LONGEVITY
PARTNERS

Carbon Footprint Analysis 2023

Varia US

Project Code:	STO-002-01
Doc Ref:	365743
Revision:	Final
Date:	06/12/2024

Report Title	Carbon Footprint Analysis 2023	Document Ref
Select Scope	Varia US	365743

Quality Control

6/12/2024

X Devasree Guggiri

Prepared by
Devasree Guggiri
Signed by: Longevity

6/12/2024

X Kitty Greenwood

Approved by
Kitty Greenwood
Signed by: Longevity

6/12/2024

X Emma Beck

Checked by
Emma Beck
Signed by: Longevity

Document History

Revision Ref	Date of Issue	Purpose of issue / description of revision
—	29/03/2024	First issue
1	04/02/2024	Second issue
2	04/22/2024	Third Issue
3	05/22/2024	Fourth Issue
4	05/29/2024	Fifth Issue
5	06/12/2024	Final

Contents

1.0

EXECUTIVE SUMMARY

1.0 Executive Summary

Varia US, a notable player in the residential real estate market, is committed to advancing sustainability within its operations as it navigates the challenges posed by climate change. Recognizing the urgency of addressing rising greenhouse gas emissions, Varia US proactively assesses its environmental impact. This report calculates and details the company's carbon footprint, identifying key sources of emissions. In doing so, Varia US not only demonstrates its commitment to sustainability but also establishes a baseline for tracking progress, informs resource allocation, sets targets aligned with the Science Based Target Initiative (SBTi), and meets reporting requirements. The analysis encompasses Varia US's entire portfolio, with 2023 serving as the base year to ensure precise benchmarking.

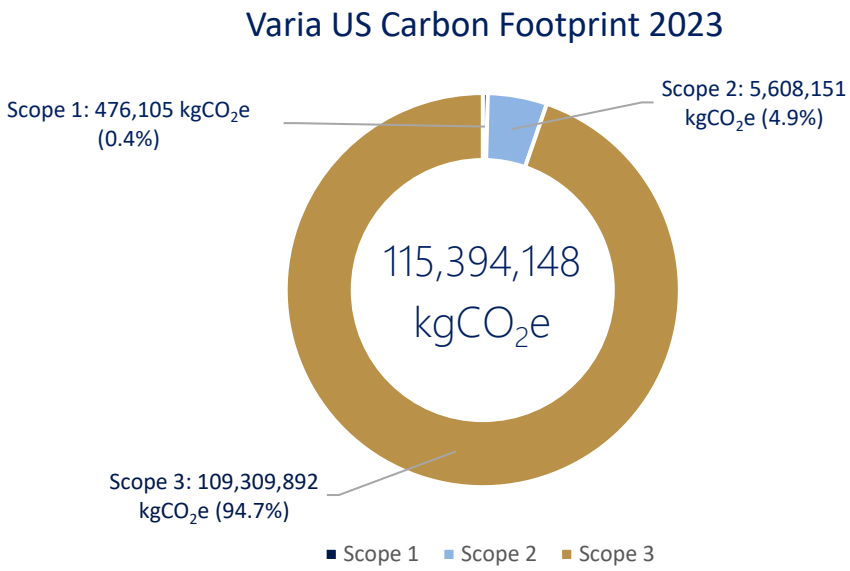

Figure 1 - Breakdown of Varia US Carbon Footprint

115,394,148 $kgCO_2e$ is equal to 27,464 gasoline-powered passenger vehicles driven for one year. OR 1,908,052 seedlings grown for 10 years.

As seen in Figure 1, Varia US' carbon emissions for the year 2023 totaled to 115,394,148 $kgCO_2e$.

This is equivalent to 27,464 gasoline-powered passenger vehicles driven for one year, or the greenhouse gas emissions that 1,908,052 tree seedlings could sequester over 10 years[1].

The contribution of Scope 3 emissions is significant at 94.7%, notably from 'Scope 3, Category 13: Downstream Leased Assets (Tenant Electricity)', attributing to 35.29% of the total emissions, highlighting the substantial impact of tenant energy use. Other major emissions sources include 'Scope 3: Category1: Capital Goods (Refurbishment)' at 27.75%, 'Scope 3, Category 3: Fuel- and Energy-Related Activities' at 19.78%, and 'Scope

[1] U.S. Environmental Protection Agency. *Greenhouse gas equivalencies calculator*. Retrieved April 18, 2024, from https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results

3, Category 5: Waste Generated in Operations (Landfilled)' accounting at 4.42%. Scope 2 emissions, primarily from electricity for both landlords and tenant vacant properties, constitute 4.86%, while Scope 1 emissions are notably lower, featuring gas usage and refrigerants at a combined 0.41%. This analysis illustrates the critical areas for targeted emissions reduction strategies, emphasizing the importance of energy efficiency and sustainable operations in reducing Varia US' carbon footprint.

For Varia US, an ambitious Science-Based Target (SBT) has been set, aiming for a 63.3% reduction in emissions by 2030. In alignment with this target, a series of potential strategies have been identified that could assist Varia US in achieving these reductions as seen in Figure 2.

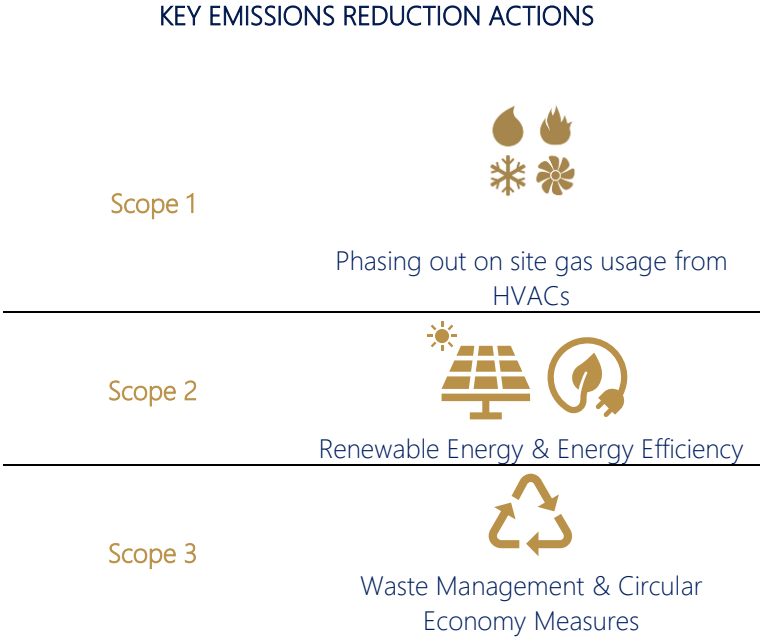

Figure 2 - Emissions Reduction Strategies

These strategies revolve around transitioning from on-site gas to electricity, complemented by an extensive suite of energy reduction and efficiency measures across the company's portfolio. Considerations include conducting energy audits, upgrading to electric HVAC systems, installing LED lighting, improving insulation, exploring renewable energy sources, promoting circular economy, and implementing carbon offsetting for any unavoidable residual emissions. This comprehensive approach is designed not only to align Varia US with the ambitious 1.5-degree Celsius pathway but also to evaluate the effectiveness of these strategies in contributing to the targeted emission reductions. The focus is on setting a clear path for Varia US to integrate these strategies effectively, showcasing their commitment to substantial environmental goals.

2.0

INTRODUCTION

2.0 Introduction

2.1 Varia US Properties

Varia US Properties, a Swiss-based company, specializes in exclusive investments within the US residential real estate market. Varia US' asset manager is Stoneweg US, an international real estate asset manager. Varia US benefits from Stoneweg US' extensive experience, overseeing a substantial portfolio encompassing over USD 2 billion in real estate assets and projects as of September 30, 2023. Notably, Varia US Properties is publicly traded on the Swiss Stock Exchange (SIX) in Zurich under the ticker symbol VARN, offering investors an opportunity to participate in the dynamic US residential real estate sector through the transparency and liquidity of the stock exchange.

2.2 Climate Emergency

The concentration of greenhouse gases (GHGs) in the Earth's atmosphere is directly linked to the average global temperature on Earth. The concentration has been rising steadily, and mean global temperatures along with it, since the time of the Industrial Revolution, which shows that human activities are the main cause of climate change. The most abundant GHG, accounting for about two-thirds of GHGs, carbon dioxide (CO_2), is largely the product of burning fossil fuels[2].

There is an urgent need for an effective and progressive response to the threat of climate change, which requires identifying and quantifying emissions followed by robust and measured implementation strategies for their reduction.

2.3 The Study

Importance

The built environment is responsible for almost 40% of global carbon emissions[3]. Therefore, it is extremely important for companies within the real estate sector to measure and understand their carbon footprint. This enables them to identify their major sources of greenhouse gas emissions, and thus effectively develop targeted strategies and initiatives to reduce their environmental impact.

Calculating their carbon footprint demonstrates the company's commitment to sustainability and responsible business practices. Clients and stakeholders increasingly value and prioritize working with organizations demonstrating environmental stewardship. By quantifying their carbon emissions, real estate companies can showcase their efforts in managing and mitigating their environmental impact, thereby enhancing their reputation, and attracting environmentally conscious clients.

Additionally, calculating the carbon footprint serves as a benchmark for tracking progress over time. It allows firms to set specific reduction targets, measure their performance against those goals, and identify areas for further improvements. This iterative process ensures continuous improvement and helps drive a culture of sustainability within the organization.

[2] Intergovernmental Panel on Climate Change. (2021). *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. IPCC. https://www.ipcc.ch/report/ar6/wg1/

[3] International Energy Agency. (2019). *World Energy Outlook 2019*. IEA. https://www.iea.org/reports/world-energy-outlook-2019

Carbon footprint calculations also provide valuable data for decision-making and resource allocation. Real estate companies can prioritize investments in energy efficiency, renewable energy, and other initiatives that offer the greatest carbon reduction potential by understanding the emissions associated with different activities. This data-driven approach enables the company to make informed choices that align with their sustainability objectives while optimizing resource allocation.

Lastly, calculating the carbon footprint is often a requirement for participating in sustainability reporting and disclosure frameworks. Clients, investors, and regulatory bodies increasingly expect transparency and accountability regarding carbon emissions. Real estate companies can comply with reporting obligations and demonstrate their commitment to corporate social responsibility by quantifying and reporting their carbon footprint.

Purpose

Longevity Partners has been commissioned to measure Varia US' carbon footprint covering the calendar year 2023.

2.4 Base Year

The entity's GHG emission base year represents a reference point in the past, enabling a meaningful comparison of future emissions. The year 2023 was chosen as the base year for this emissions report as it reflects the most recent emissions, providing the best representation of the fund's operations.

The base year's emissions will be recalculated in case Varia US experiences changes in its business operations in the future, through acquiring or selling different entities, using a 5% threshold. This ensures consistency between data sets, which are used to determine the impact of reduction efforts on the entity's GHG inventory.

3.0

METHODOLOGY

3.0 Methodology

3.1 Calculation Methodologies

The methodology in this study is based on the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (GHG Protocol), which sets corporate accounting and reporting principles to aid organizations worldwide in their carbon accounting efforts. It has become the most widely adopted emission accounting framework globally following its introduction in 2001. Under the GHG Protocol, seven types of greenhouse gases (GHGs) are to be reported in line with the Kyoto Protocol, i.e. carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), nitrogen trifluoride (NF_3), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). To make the data comparable across different GHGs, the Intergovernmental Panel on Climate Change (IPCC) quantifies the global warming potential (GWP) of the seven main greenhouse gases and groups of gases, with CO_2 taken as the base unit. For emissions calculations, it's common to use the GWP-100, which refers to the global warming potential of the gas over 100 years, showing the long-term impact of the pollutant. The total gross emissions are measured in kilograms of carbon dioxide equivalent ($kgCO_2e$) and includes the impact of all other GHGs with their relative global warming potentials. As stipulated by the Protocol, emission-releasing activities are identified, categorized, and quantified into three distinct scopes. The three scopes are:

1. Scope 1: Direct Emissions Scope 1 includes all direct emissions from the activities of an organization or under their control, including fuel combustion on site such as gas boilers, fleet vehicles and air-conditioning leaks.

2. Scope 2: Indirect Emissions from Electricity Scope 2 covers all indirect emissions from the consumption of purchased electricity, steam, heating, and cooling. Despite not occurring at the company's own site, these emissions are considered part of its responsibility since they are a result of the energy it has chosen to purchase and use.

3. Scope 3: Other Indirect Emissions Scope 3 includes all other indirect emissions that occur in a company's value chain. This includes emissions associated with the production of purchased goods and services, business travel, employee commuting, waste disposal, use of sold products, transportation, and distribution (both upstream and downstream), and leasing activities. Scope 3 emissions often represent the largest source of greenhouse gas emissions and can offer significant opportunities for climate impact reduction.

Combined, they represent a reporting portfolio's total GHG inventory[4].

3.2 Organizational Boundaries

Varia US had 42 assets in its portfolio during the reporting period of 2023[5]. These assets are spread across 14 states in the United States, including Arizona, Florida, Georgia, Indiana, Kansas, Kentucky, Missouri, Nebraska, New Mexico, North Carolina, Ohio, South Carolina, Tennessee, and Texas as seen in Figure 3 (please refer to Appendix 1 for full list of assets).

[4] World Resources Institute. GHG Protocol. Retrieved 2023, from https://www.ghgprotocol.org/

[5] 11 of these assets were sold at some point during the reporting year. Consequently, when utilizing benchmarks to estimate emissions related to these assets, the duration in the portfolio has been factored into consideration.

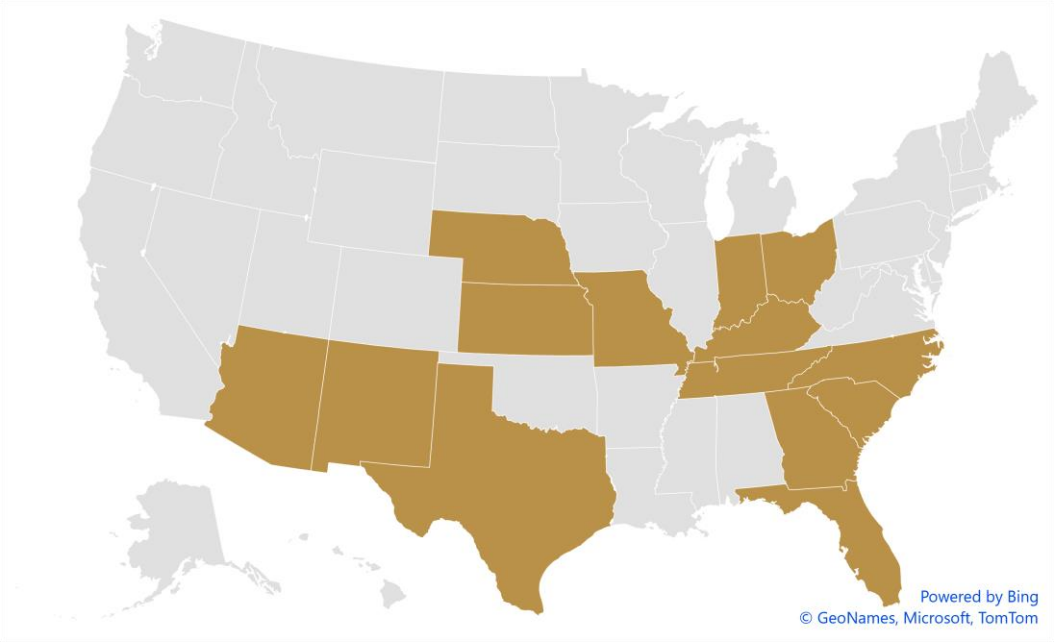

Figure 3 - Varia US Properties Asset Locations

3.3 Operational Boundaries Varia US

Table 1 summarizes operational boundaries of the carbon footprint study with scope differentiation.

Table 1- Operational Boundaries

SCOPE 1	Inclusion	Details
Gas for heating	YES	Landlord + Tenant Vacant
Refrigerants	YES	Landlord
SCOPE 2		
Electricity	YES	Landlord + Tenant Vacant
SCOPE 3		
Upstream Activities		
Category 1: Purchased Goods and Services	YES	Tenant Water Usage + Water Usage for Irrigation + Administrative Expenses + Marketing Expenses + Turnover Maintenance + Contractual Services
Category 2: Capital Goods	YES	Minor Replacements + Capital Expenses + Operating Maintenance
Category 3: Fuel- and Energy-Related Activities	YES	T&D losses
Category 4: Upstream Transportation and Distribution	NO	Not Applicable
Category 5: Waste Generated in Operations	YES	Landfilled and Recycled Tenant Waste + Wastewater
Category 6: Business Travel	YES	Flights and Hotels Stays
Category 7: Employee Commuting	YES	Employee Commute at Site Level
Category 8: Upstream Leased Assets	NO	Not Applicable
Downstream Activities		
Category 9: Downstream Transportation and Distribution	NO	Not Applicable
Category 10: Processing of Sold Products	NO	Not Applicable
Category 11: Use of Sold Products	NO	Not Applicable
Category 12: End-of-Life Treatment of Sold Products	NO	Not Applicable
Category 13: Downstream Leased Assets	YES	Tenant Gas + Tenant Electricity
Category 14: Franchises	NO	Not Applicable
Category 15: Investments	NO	Not Applicable

It has been reported that there are 9 golf carts used on the sites; however, the type of fuel used, and mileage is unknown. Given that the emissions from these carts are expected to be minimal compared to the overall study related emissions, they have been excluded from the analysis.

3.4 Assumptions and Calculations

All energy calculations (landlord and tenant) relevant to the fund were based on data provided by the Conservice (GOBY) platform. Bearing in mind that not all assets might have access to all building meters, Longevity has conducted Energy Use Intensity (EUI) checks to avoid potential underestimation of energy use and relevant emissions. The check identified 11 assets that had an EUI lower than the 25th median of industry benchmarks, which was established as the threshold for further investigation.

Electricity and gas consumption for those assets have been exchanged with ENERGY STAR® benchmarks based on asset type (residential) and location (by state). The same methodology has been applied to assets with no available data. In instances where assets were sold or acquired during the reporting period, the benchmarked energy consumption has been adjusted by the number of days under Varia US ownership and vacancy rate provided.

Wherever feasible, primary data was utilized to calculate energy-related emissions, encompassing 55% of the total emissions derived from primary data sources.

The split between landlord and tenant emissions has been based on primary data when possible; in other circumstances, the split was determined using the Common Area to Rentable Floor Area ratio provided by the client. It is important to note that vacant tenant consumption has been allocated to the landlord emissions, as this area was under the full operational control of the management company.

Scope 1

- **Gas**

After data adjustments, the total landlord including tenant-vacant gas consumption for the 42 assets amounted to 2,59,535 kWh in 2023. The Environmental Protection Agency (EPA) 2024[6] emission factor has been applied to estimate emissions related to natural gas usage across all sites. Refer to Table 2, for more information about the Scope 1: Gas Usage emission results.

Table 2 - Scope 1: Gas Purchased (Landlord) Results

Emission Source	Consumption	Unit	Emission Factor	Unit	GHG Emissions	Unit
Gas Purchased (Landlord)	1,387,114	kWh	0.19	$kgCO_2e/kWh$	257,933	$kgCO_2e$
Gas Purchased (Tenant-Vacant)	1,162,421	kWh	0.19	$kgCO_2e/kWh$	216,151	$kgCO_2e$
Total					474,084	$kgCO_2e$

- **Refrigerants**

Fugitive emissions encompass releases from refrigeration and air conditioning systems due to leaks and maintenance activities throughout the equipment's operational lifespan. The emission of refrigerant gas, while relatively minor, significantly contributes to greenhouse gas emissions due to the elevated Global Warming Potential (GWP) associated with these gases.

[6] U.S. Environmental Protection Agency & U.S. Department of Energy. (n.d.). Data Explorer - ENERGY STAR Portfolio Manager. Retrieved February 2024, from https://portfoliomanager.energystar.gov/dataExplorer/?_gl=1*1mgdo8h*_ga*MjAwNDMyNDczNS4xNjk4MjY0MzYz*_ga_S0KJTVVLQ6*MTY5ODI2NDM2My4xLjEuMTY5ODI2Njc1NS4wLjAuMA

The calculation of refrigerant leakage-related emissions utilizes the Screening Method from the GHG Protocol Refrigerants Calculator[7]. This method takes into consideration the number of units, type of refrigerant, GWP of the refrigerant, refrigerant charge (kg), and annual leakage rate (%). The calculator available on the GHG Protocol website includes Global Warming Potentials (GWPs) of Common Greenhouse Gases and Refrigerants based on outdated values from the IPCC Second Assessment Report (1995). To ensure accuracy and relevance, these values have been adjusted to align with the more recent IPCC Fifth Assessment Report (2014)[8] for better reflection of emissions.

All of the calculations were in majority based on the primary data, where the client provided with number of units in each asset and type of refrigerants used. See Table 3 for more information about the Scope 1; Refrigerant emission results and total Scope 1 emission results.

Table 3 - Scope 1: Refrigerants Emission Results

Emission Source	Refrigerant Type	Refrigerant Charge (kg)	Annual Leakage Rate	GHG Emissions	Unit
Refrigerants	HFC-134A	21	5%	1,999	$kgCO_2e$
	R-410A	41	5%	22	$kgCO_2e$
Total				2,021	$kgCO_2e$

TOTAL SCOPE 1 EMISSIONS	476,105	$kgCO_2e$

Scope 2

- ### Electricity

Following data adjustments, the combined electricity (Landlord and Tenant Vacant) consumption for all the assets was 10,824,800 kWh in 2023. The EPA 2024 emission factors based on different states were utilized to calculate the emissions associated with the usage of natural gas across all sites. ENERGY STAR®[9] benchmarks were used to estimate the electricity consumption data for the ten sold assets and seven of the assets in the portfolio which did not have complete consumption data.

The use of green tariffs has not been reported; therefore, only the location-based method has been used as this is considered best practice. Refer to Table 4 and Table 5 for Scope 2: Electricity Purchased (Landlord and Tenant Vacant) emission results categorized by the location of the state in which the asset is situated.

[7] It should be noted that the GWPs in the tool have been updated from the IPCC Second Assessment Report (1995) to the 'IPCC Fifth Assessment Report (2014) to be the more representative.
[8] Intergovernmental Panel on Climate Change. (2014). Climate change 2014: Synthesis report. In R.K. Pachauri & L.A. Meyer (Eds.), Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change IPCC.
[9] U.S. Environmental Protection Agency & U.S. Department of Energy. (n.d.). Data Explorer - ENERGY STAR Portfolio Manager. Retrieved February 2024, from https://portfoliomanager.energystar.gov/dataExplorer/?_gl=1*1mgdo8h*_ga*MjAwNDMyNDczNS4xNjk4MjY0MzYz*_ga_S0KJTVVLQ6*MTY5ODI2NDM2My4xLjEuMTY5ODI2Njc1NS4wLjAuMA

Table 4 - Scope 2: Electricity Purchased (Landlord) Emission Results

Emission Source	Location	Consumption	Unit	Emission Factor	Unit	GHG Emissions	Unit
Scope 2: Electricity Purchased (Landlord)	NC	1,027,174	kWh	0.40	$kgCO_2e/kWh$	414,348	$kgCO_2e$
	TX	565,926	kWh	0.47	$kgCO_2e/kWh$	266,319	$kgCO_2e$
	AZ	138,499	kWh	0.47	$kgCO_2e/kWh$	65,488	$kgCO_2e$
	MO	1,625,489	kWh	0.56	$kgCO_2e/kWh$	912,358	$kgCO_2e$
	NE	206,942	kWh	0.63	$kgCO_2e/kWh$	130,731	$kgCO_2e$
	KY	663,524	kWh	0.57	$kgCO_2e/kWh$	381,489	$kgCO_2e$
	TN	92,006	kWh	0.55	$kgCO_2e/kWh$	50,096	$kgCO_2e$
	IN	1,126,358	kWh	0.58	$kgCO_2e/kWh$	647,592	$kgCO_2e$
	KS	492,544	kWh	0.55	$kgCO_2e/kWh$	272,655	$kgCO_2e$
	NM	33,545	kWh	0.47	$kgCO_2e/kWh$	15,861	$kgCO_2e$
	SC	424,188	kWh	0.40	$kgCO_2e/kWh$	171,112	$kgCO_2e$
	OH	194,274	kWh	0.58	$kgCO_2e/kWh$	111,697	$kgCO_2e$
	GA	56,137	kWh	0.74	$kgCO_2e/kWh$	41,738	$kgCO_2e$
	FL	60,350	kWh	0.49	$kgCO_2e/kWh$	29,568	$kgCO_2e$
Total						3,511,052	$kgCO_2e$

Table 5 - Scope 2: Electricity Purchased (Tenant Vacant) Results

Emission Source	Location	Consumption	Unit	Emission Factor	Unit	GHG Emissions	Unit
Scope 2: Electricity Purchased (Tenant Vacant)	NC	282,542	kWh	0.40	$kgCO_2e/kWh$	113,974	$kgCO_2e$
	TX	546,520	kWh	0.47	$kgCO_2e/kWh$	257,186	$kgCO_2e$
	AZ	307,091	kWh	0.47	$kgCO_2e/kWh$	145,204	$kgCO_2e$
	MO	272,552	kWh	0.56	$kgCO_2e/kWh$	152,979	$kgCO_2e$
	NE	65,234	kWh	0.63	$kgCO_2e/kWh$	41,210	$kgCO_2e$
	KY	821,478	kWh	0.57	$kgCO_2e/kWh$	472,304	$kgCO_2e$
	TN	289,014	kWh	0.55	$kgCO_2e/kWh$	157,365	$kgCO_2e$
	IN	961,439	kWh	0.58	$kgCO_2e/kWh$	552,774	$kgCO_2e$
	KS	99,195	kWh	0.55	$kgCO_2e/kWh$	54,911	$kgCO_2e$
	NM	65,499	kWh	0.47	$kgCO_2e/kWh$	30,970	$kgCO_2e$
	SC	51,218	kWh	0.40	$kgCO_2e/kWh$	20,661	$kgCO_2e$
	OH	102,636	kWh	0.58	$kgCO_2e/kWh$	59,010	$kgCO_2e$
	GA	10,159	kWh	0.74	$kgCO_2e/kWh$	7,553	$kgCO_2e$
	FL	63,267	kWh	0.49	$kgCO_2e/kWh$	30,998	$kgCO_2e$
Total						2,097,099	$kgCO_2e$

TOTAL ELECTRICTY EMISSIONS	5,608,151	$kgCO_2e$

Scope 3

- ## Category 1: Purchased Goods and Services

Water

In this category, tenant water usage and the water used for irrigation at the assets were considered. Primary data available in Conservice (GOBY) was used, and data gaps were benchmarked to estimate the emissions associated with tenant water usage. The total tenant water usage was then multiplied by the water supply emissions factor obtained from the 'Journal of Cleaner Production'[10] to calculate the emissions associated with tenant water consumption. Primary irrigation data was available for only two assets, "Beau Jardin" and "West End at Fayetteville." Due to the lack of primary data for irrigation water usage at other assets, this was estimated using the ratio of irrigation water consumption to site size from the available primary data and applied similarly to all other assets. This was then multiplied by the water supply emission factor to determine the emissions associated with irrigation. Refer to Table 6 for more information regarding Scope 3, Category 1: Purchased Goods and Services (Water) emission results.

Table 6 - Scope 3, Category 1: Purchased Goods and Services (Water) Results

Emission Source	Location	Consumption	Unit	Emission Factor	Unit	GHG Emissions	Unit
Category 1: Purchased Goods and Services	Water used by tenants	1,681,272,000	L	0.00046	$kgCO_2e/L$	773,385	$kgCO_2e$
	Water used for irrigation	23,230,807	L	0.00046	$kgCO_2e/L$	10,686	$kgCO_2e$
	Total					784,071	$kgCO_2e$

Operating Expenses

Each site has recurring operating expenses associated with building administration, marketing, turnover maintenance, and contractual services on an annual basis, including painting, pest control, landscaping, cleaning the carpets, maintaining the building energy systems, and water systems, etc. The emission factor for spend on marketing and spend on turnover maintenance has been obtained from Climatiq[11] and the emission factors for spend on administration and spend on contractual service have been obtained from DEFRA[12]. These emission factors have been used to estimate the associated emissions. Spend based method was utilized to calculate the emissions. Refer to Table 7 for Scope 3, Category 1: Purchased Goods and Services (Operating Expenses) Results.

[10] Zib, L., Byrne, D. M., Marston, L. T., & Chini, C. M. (2021). Operational carbon footprint of the U.S. water and wastewater sector's energy consumption. *Journal of Cleaner Production, 321*, 128815. https://doi.org/10.1016/j.jclepro.2021.128815
[11] Climatiq. Data. Retrieved May 21, 2024, from https://www.climatiq.io/data
[12] UK Government. *UK's carbon footprint*. Retrieved May 21, 2024, from https://www.gov.uk/government/statistics/uks-carbon-footprint

Table 7 - Scope 3, Category 1: Purchased Goods and Services (Operating Expenses) Results

Emission Source	Category	Spend	Unit	Emission Factor	Unit	GHG Emissions	Unit
Category 1: Spend on Services	Spend on administration	4,765,011	$	0.15	$kgCO_2e/$	709,124	$kgCO_2e$
	Spend on marketing	2,438,825	$	0.07	$kgCO_2e/$	189,838	$kgCO_2e$
	Spend on turnover maintenance	3,253,349	$	0.42	$kgCO_2e/$	1,367,058	$kgCO_2e$
	Spend on contractual services	2,097,767	$	0.08	$kgCO_2e/$	171,786	$kgCO_2e$
	Total					2,437,806	$kgCO_2e$

TOTAL PURCHASED GOODS EMISSIONS	3,221,877	$kgCO_2e$

- ## Category 2: Capital Goods

Refurbishment

Each site undergoes necessary refurbishment annually, falling under the categories of Minor Replacements, Capital Expenses, and Maintenance of the building systems. This includes the replacement of doors, windows, interior and exterior building maintenance, flooring, unit renovation and the exchange of HVAC, electrical, and plumbing parts. Based on spend ($), the online carbon footprint calculator[13] has been used to estimate emissions. Refer to Table 8, for more information regarding Scope 3, Category 2: Capital Goods (Refurbishment) emission results.

Table 8 - Scope 3, Category 2: Capital Goods (Refurbishment) Emission Results

Emission Source	Spend	Unit	Emission Factor	Unit	GHG Emissions	Unit
Category 2: Capital Goods (Refurbishment)	45,024,056	$	0.71	$kgCO_2e/$	32,021,108	$kgCO_2e$

TOTAL REFURBISHEMENT EMISSIONS	32,021,108	$kgCO_2e$

- ## Category 3: Fuel and Energy-Related Activities

T&D Losses

Emissions associated with transmission and distribution (T&D) losses from electricity supply was based on the electricity consumption multiplied by well to tank emissions factor from DEFRA 2022[14]. Refer to Table 9 for more information regarding Scope 3, Category 3: Fuel and Energy Related Activities (T&D Losses) emission results, categorized by the location of the state the asset is situated in.

[13] Carbon Footprint Ltd. Carbon Footprint Calculator. Retrieved 2023, from https://www.carbonfootprint.com/calculator.aspx
[14] "Low Emission Buses: Well-to-Tank." Zemo Partnership. Accessed January 2024. https://www.zemo.org.uk/work-with-us/buses-coaches/low-emission-buses/well-to-tank.htm.

Table 9 - Scope 3, Category 3: Fuel and Energy Related Activities (T&D Losses) Emission Results

Emission Source	Location	Consumption	Unit	Emission Factor	Unit	GHG Emissions	Unit
Category 3: Fuel and Energy-Related Activities (T&D Losses)	NC	5,646,710	kWh	0.22	$kgCO_2e/kWh$	1,476,897	$kgCO_2e$
	TX	8,610,981	kWh	0.22	$kgCO_2e/kWh$	2,252,202	$kgCO_2e$
	AZ	9,517,474	kWh	0.22	$kgCO_2e/kWh$	2,489,295	$kgCO_2e$
	MO	11,420,632	kWh	0.22	$kgCO_2e/kWh$	2,987,066	$kgCO_2e$
	NE	1,795,699	kWh	0.22	$kgCO_2e/kWh$	469,665	$kgCO_2e$
	KY	1,242,3371	kWh	0.22	$kgCO_2e/kWh$	3,249,333	$kgCO_2e$
	TN	8,245,963	kWh	0.22	$kgCO_2e/kWh$	2,156,732	$kgCO_2e$
	IN	16,043,807	kWh	0.22	$kgCO_2e/kWh$	4,196,258	$kgCO_2e$
	KS	3,036,017	kWh	0.22	$kgCO_2e/kWh$	794,070	$kgCO_2e$
	NM	1,317,839	kWh	0.22	$kgCO_2e/kWh$	344,681	$kgCO_2e$
	SC	2,752,263	kWh	0.22	$kgCO_2e/kWh$	719,855	$kgCO_2e$
	OH	3,560,567	kWh	0.22	$kgCO_2e/kWh$	931,266	$kgCO_2e$
	GA	837,568	kWh	0.22	$kgCO_2e/kWh$	219,066	$kgCO_2e$
	FL	2,072,232	kWh	0.22	$kgCO_2e/kWh$	541,992	$kgCO_2e$
Total						22,828,378	$kgCO_2e$

TOTAL T&D LOSSES EMISSIONS	22,828,378	$kgCO_2e$

- ## Category 5: Waste Generated in Operations

Waste generated in operations was categorized into landfill and recycled waste, with each category's emissions calculated by multiplying the quantity of waste by its respective emission factor, as obtained from the EPA's WARM Tool[15].

Additionally, wastewater generated from tenant water usage also falls under this category. It's estimated that approximately 90% of the water consumed by tenants becomes wastewater, which is then treated at a wastewater treatment plant before being released into the water bodies. Data on tenant water consumption, sourced from GOBY, was multiplied by the wastewater emission factor from a study published in the 'Journal of Cleaner Production' to obtain the emissions associated with wastewater treatment. Refer to 9, for more information regarding Scope 3, Category 5: Waste Generated in Operations emission results.

[15] Version 16 of the Waste Reduction Model (WARM)." U.S. Environmental Protection Agency, [publication date of version 16]. Accessed November 2023. https://www.epa.gov/warm/versions-waste-reduction-model#v16.

Table 10 - Scope 3, Category 5: Waste Generated in Operations Emission Results

Emission Source	Category	Consumption	Unit	Emission Factor	Unit	GHG Emissions	Unit
Category 5: Waste Generated in Operations	Landfilled Waste	14,933,248	kg	0.34172	$kgCO_2e/kg$	5,102,945	$kgCO_2e$
	Recycled Waste	499,597	kg	0.31416	$kgCO_2e/kg$	156,953	$kgCO_2e$
	Wastewater	1,520,563,000	L	0.00038	$kgCO_2e/L$	577,814	$kgCO_2e$
TOTAL WASTE GENERATED IN OPERATIONS EMISSIONS						5,837,711	$kgCO_2e$

• Category 6: Business Travel

Business Travel emissions are associated with the annual meeting of eight board members that govern asset level operations. It has been assumed that all board members travelled the same distance between Zurich and New York City. The travel distance has been calculated using Great Circle Map[16] software that takes under account exact flight distance from selected airports.

Considering that the board meeting takes place once a year and it is three days long, emissions related to hotel stays has been calculated using DEFRA 2023[17] emissions factor for 'Hotel Stay' in the 'US'. Refer to Table 11, for more information regarding Scope 3, Category 6: Business Travel emission results.

Table 11 - Scope 3, Category 6: Business Travel Emission Results

Emission Source	Category	Consumption	Unit	Emission Factor	Unit	GHG Emissions	Unit
Category 6: Business Travel	Flights	118,129	Miles	0.13	$kgCO_2e/mile$	15,372	$kgCO_2e$
	Hotels	24	days	16.1	$kgCO_2e$/room per night	386	$kgCO_2e$
TOTAL BUSINESS TRAVEL EMISSIONS						15,759	$kgCO_2e$

• Category 7: Employee Commuting

Employee commuting emissions were assessed through a questionnaire. In this process, each employee disclosed their commuting habits throughout the year.

Employees working at site level provided details such as the frequency of commute to the asset location, mode of transportation, type of fuel used, and the distance travelled. This information enabled the precise calculation of emissions coming from employees' daily commutes. The assessment operated on the assumption that all employees have an equal number of holidays annually, with 48 working weeks considered as the standard. The associated emission factor was sourced from EPA 2024 which was then multiplied with the total number of miles driven in 2023 to obtain the total emissions generated from employee commuting.

[16] Great Circle Mapper. (n.d.) Retrieved February 2024, from https://www.greatcirclemap.com/?routes=LHR-CDG
[17] Department for Business, Energy & Industrial Strategy. (2023). 2023 GHG conversion factors methodology paper [PDF]. Retrieved from https://assets.publishing.service.gov.uk/media/647f50dd103ca60013039a8a/2023-ghg-cf-methodology-paper.pdf

Refer to Table 12, for more information regarding Scope 3, Category 7: Employee Commuting emission results.

Table 12 - Scope 3, Category 7: Employee Commuting Emission Results

Emission Source	Distance	Unit	Emission Factor	Unit	GHG Emissions	Unit
Category 7: Employee Commute	891,457	Miles	0.18	$kgCO_2e$/mile	156,839	$kgCO_2e$

TOTAL EMPLOYEE COMMUTE EMISSIONS	156,839	$kgCO_2e$

- ## Category 13: Downstream Leased Assets

Tenant gas and electricity usage emissions are classified under Category 13: Downstream Leased Assets. Energy consumption data was sourced from Conservice (GOBY). Benchmark values were used for the ten out of the eleven sold assets, as the data for these assets was unavailable. Following data adjustments, the combined energy consumption (gas and electricity) for all the assets was 100,866,207 kWh in 2023. The EPA 2024 emission factors based on different states were utilized to calculate the emissions associated with the usage of electricity across all sites. The EPA 2024 emission factor was utilized to calculate the emissions associated with Natural Gas usage.

The use of green tariffs has not been reported; therefore, only the location-based method has been used. Refer to Table 13 and Table 14, for more information regarding Scope 3, Category 13: Downstream Leased Assets (Tenant Gas and Electricity) emission results.

Table 13 - Scope 3, Category 13: Downstream Leased Assets (Tenant Gas) Emission Results

Emission Source	Location	Consumption	Unit	Emission Factor	Unit	GHG Emissions	Unit
Category 13: Downstream Leased Assets (Tenant Gas Consumption)	NC	15,380	kWh	0.19	$kgCO_2e$/kWh	2,860	$kgCO_2e$
	TX	2,090,782	kWh	0.19	$kgCO_2e$/kWh	388,780	$kgCO_2e$
	AZ	3,087,618	kWh	0.19	$kgCO_2e$/kWh	574,141	$kgCO_2e$
	MO	220,627	kWh	0.19	$kgCO_2e$/kWh	41,025	$kgCO_2e$
	NE	1,222,230	kWh	0.19	$kgCO_2e$/kWh	227,273	$kgCO_2e$
	KY	13,229,259	kWh	0.19	$kgCO_2e$/kWh	2,459,973	$kgCO_2e$
	TN	-	kWh	0.19	$kgCO_2e$/kWh	-	$kgCO_2e$
	IN	1,663,018	kWh	0.19	$kgCO_2e$/kWh	309,237	$kgCO_2e$
	KS	22,206	kWh	0.19	$kgCO_2e$/kWh	4,129	$kgCO_2e$
	NM	145,818	kWh	0.19	$kgCO_2e$/kWh	27,115	$kgCO_2e$
	SC	-	kWh	0.19	$kgCO_2e$/kWh	-	$kgCO_2e$
	OH	2,532,951	kWh	0.19	$kgCO_2e$/kWh	471,001	$kgCO_2e$
	GA	-	kWh	0.19	$kgCO_2e$/kWh	-	$kgCO_2e$
	FL	-	kWh	0.19	$kgCO_2e$/kWh	-	$kgCO_2e$
Total						4,505,534	$kgCO_2e$

Table 14 - Scope 3, Category 13: Downstream Leased Assets (Tenant Electricity) Emission Results

Emission Source	Location	Consumption	Unit	Emission Factor	Unit	GHG Emissions	Unit
Category 13: Downstream Leased Assets (Tenant Electricity Consumption)	NC	4,336,993	kWh	0.40	$kgCO_2e/kWh$	1,749,485	$kgCO_2e$
	TX	7,498,535	kWh	0.47	$kgCO_2e/kWh$	3,528,728	$kgCO_2e$
	AZ	9,071,883	kWh	0.47	$kgCO_2e/kWh$	4,289,522	$kgCO_2e$
	MO	9,522,591	kWh	0.56	$kgCO_2e/kWh$	5,344,589	$kgCO_2e$
	NE	1,523,523	kWh	0.63	$kgCO_2e/kWh$	962,455	$kgCO_2e$
	KY	10,938,369	kWh	0.57	$kgCO_2e/kWh$	6,288,950	$kgCO_2e$
	TN	7,864,943	kWh	0.55	$kgCO_2e/kWh$	4,282,383	$kgCO_2e$
	IN	13,956,009	kWh	0.58	$kgCO_2e/kWh$	8,023,924	$kgCO_2e$
	KS	2,444,278	kWh	0.55	$kgCO_2e/kWh$	1,353,064	$kgCO_2e$
	NM	1,218,795	kWh	0.47	$kgCO_2e/kWh$	576,291	$kgCO_2e$
	SC	2,276,857	kWh	0.40	$kgCO_2e/kWh$	918,454	$kgCO_2e$
	OH	3,263,656	kWh	0.58	$kgCO_2e/kWh$	1,876,420	$kgCO_2e$
	GA	771,272	kWh	0.74	$kgCO_2e/kWh$	573,437	$kgCO_2e$
	FL	1,948,614	kWh	0.49	$kgCO_2e/kWh$	954,714	$kgCO_2e$
Total						40,722,686	$kgCO_2e$

TOTAL DOWNSTREAM LEASED ASSETS EMISSIONS	45,228,220	$kgCO_2e$

4.0

TARGET SETTING AND EMISSION REDUCTION STRATEGIES

4.0 Target Setting

4.1 SBT

Science-Based Targets (SBTs)[18] refer to greenhouse gas emissions reduction targets that are aligned with the level of decarbonization required to keep global temperature increase below 1.5 degrees Celsius above pre-industrial levels, as specified in the Paris Agreement. These targets are considered "science-based" because they are founded on scientific evidence and data that dictate the pace and scale of emission reductions needed to avert catastrophic climate change. By setting SBTs, organizations commit to making measurable and significant progress in reducing their carbon footprint within a specific timeframe, ensuring their growth does not come at the expense of the planet's health.

For Varia US, integrating SBTs into its business strategy is crucial for demonstrating its commitment to sustainability and climate action within the residential real estate market. By setting and striving to meet SBTs, Varia US not only aligns its growth with the global imperative to limit warming but also positions itself as a responsible leader in providing sustainable housing solutions. This strategic focus on sustainability can enhance Varia US' appeal to sustainability-oriented residents, investors, and stakeholders, setting it apart in a competitive market. Pursuing SBTs encourages innovation in energy efficiency, renewable energy integration, and resource conservation, driving Varia US towards operational excellence and long-term viability in a world increasingly shaped by sustainability considerations.

4.2 Methodology

The Sectoral Decarbonization Approach (SDA) is a target-setting methodology that allows for the modelling of physical intensity greenhouse gas (GHG) reduction targets, which align with sector-specific decarbonization pathways based on the climate scenarios outlined in the Paris Agreement. This approach is distinguished by its focus on intensity convergence, meaning it sets targets based on the emissions intensity per unit of economic output or physical output, such as per square foot for the real estate sector. The SDA considers the unique emissions profiles and reduction opportunities within each sector, allowing for a tailored pathway to achieve the global goal of limiting warming to 1.5 degrees Celsius. By accounting for sectoral growth projections and technological advancements, the SDA methodology provides a framework for setting realistic and achievable emissions reduction targets that are in line with science-based climate objectives. For Varia US, Building Sector Science Based Targets have been employed and In-Use Operational Emissions have been identified as a primary source of concern aligning with the Building Sector SBTs.

In the development of Science-Based Targets (SBTs), the focus has been placed solely on 1.5°C pathway in accordance with the methodology and guidance provided by the SBT initiative (SBTi). This decision to not incorporate the 2°C pathway into their strategic framework is informed by the initiative's emphasis on the urgency and scale of action required to mitigate the worst impacts of climate change. By adhering to the 1.5°C threshold, the approach aligns with a global scientific consensus, prioritizing more stringent and impactful climate goals.

4.3 Results

Varia US will need to reduce their emissions by 98.9%, ensuring that yearly in-use operational emissions do not exceed 74,582 $kgCO_2e$ to achieve net zero by 2050. The SBT reduction percentage is contingent upon

[18] Science Based Targets initiative. Retrieved [3/27/24], from https://sciencebasedtargets.org/

the floor area currently under the operational control of Varia US. Should there be any alterations to this area, the reduction percentage will require an adjustment.

Table 15 and Figure 4, provide an analysis estimating the required reductions in emissions for Varia US to align with SBTs, specifically focusing on in-use operational emissions. Operational emissions as defined by SBTi encompasses Scope-1, Scope-2 and Scope 3, Category 13: Downstream Leased Assets (electricity and gas). Currently, the in use operational emissions total 51,312,447 $kgCO_2e$, with an intensity of 49.21 $kgCO_2e$ per square meter. By 2030, to adhere to the ambitious goals consistent with limiting global warming, emissions need to be curtailed to 18,815,483 $kgCO_2e$ (23.27 $kgCO_2e/m^2$). This represents a projected reduction of 63.3% from the baseline. Varia US will need to reduce their emissions by 98.9%, ensuring that yearly in-use operational emissions do not exceed 74,582.03 $kgCO_2e$ to achieve net zero by 2050. The SBT reduction percentage is contingent upon the floor area currently under the operational control of Varia US. Should there be any alterations to this area, the reduction percentage will require an adjustment.

Table 15 - SBT Reduction Targets for 1.5-degree Celsius Pathway

Emissions Source	Emissions in Base Year ($kgCO_2e$)	In-use Emissions Intensity ($kgCO_2e/m^2$)	SBT Required Reduction (%) for 2030	Projected Emissions After SBT Reduction by 2030 ($kgCO_we$)	SBT Required Reduction for Net Zero in 2050	Projected Emissions After Achieving Net Zero by 2050 ($kgCO_we$)
In-Use Operational Emissions	51,312,476	49.2	63.3	18,815,483	98.9%	74,582

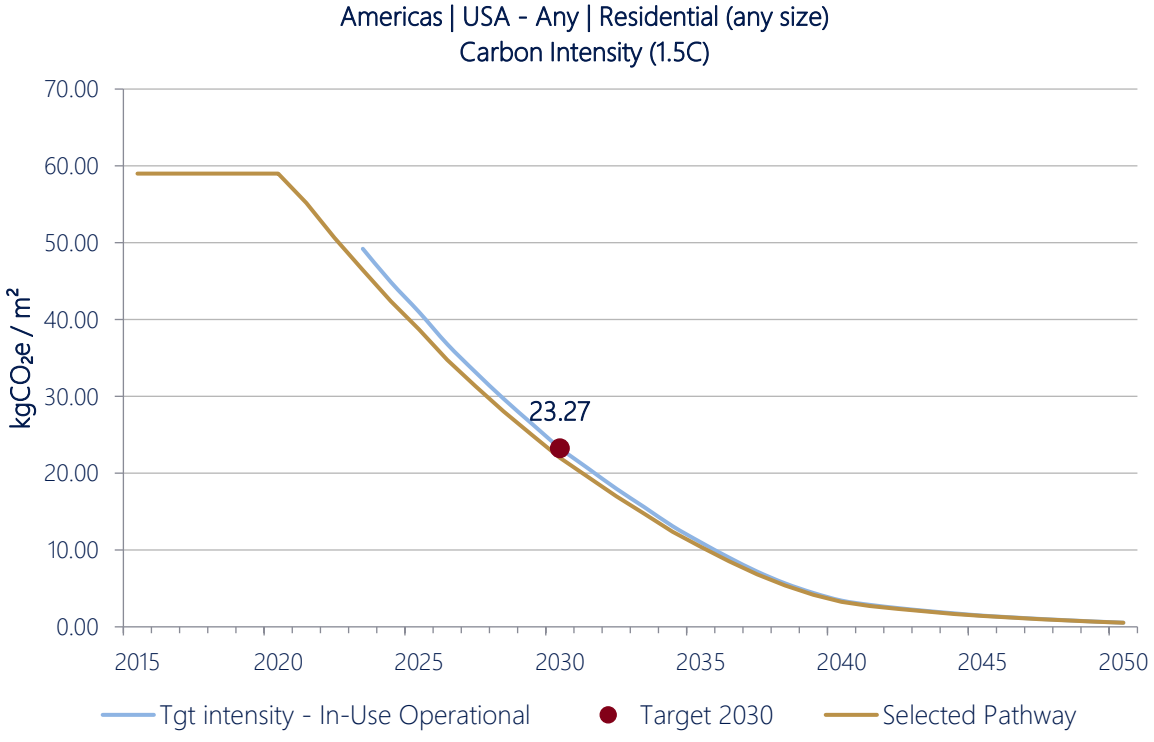

Figure 4 - SBT 1.5-degree pathway for Varia US for In-Use Operational emissions.

4.4 Emission Reduction Strategies

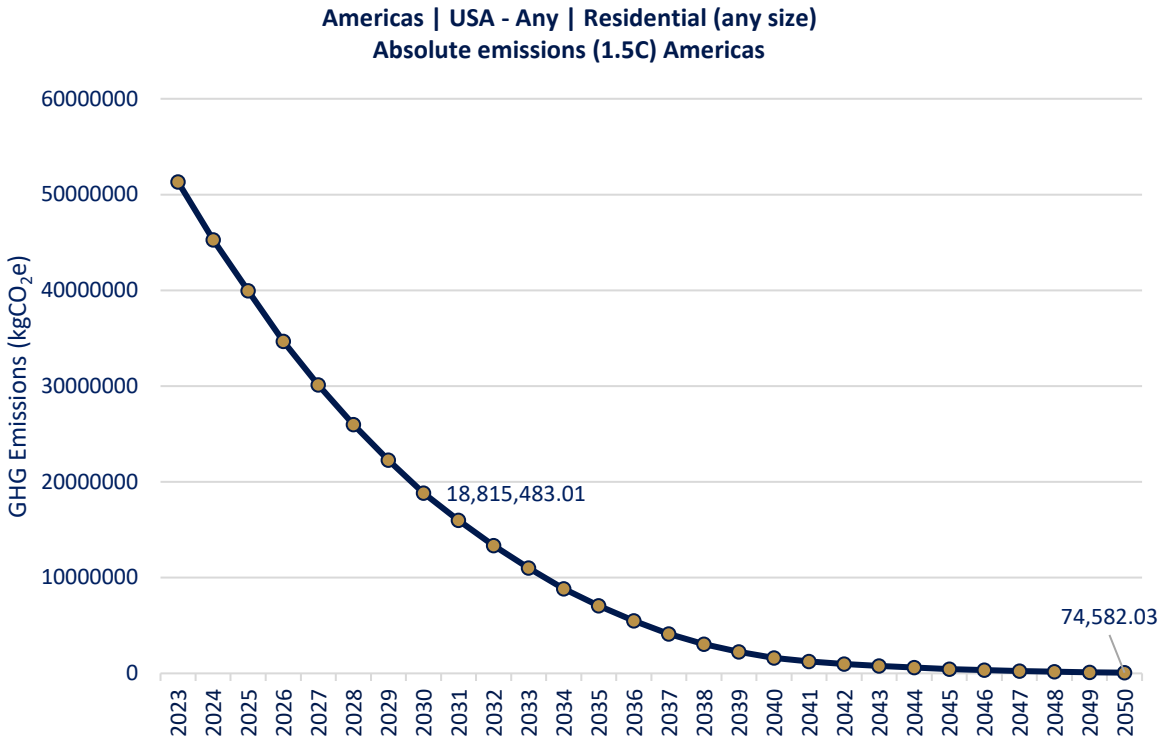

Figure 5 - SBT 1.5-degree pathway for Varia US excluding the on-site gas usage.

As outlined in Figure 5, by phasing out on-site gas use, Varia US can expect a reduction in emissions generated, albeit with an accompanying rise from increased electricity consumption as it replaces gas. To address this and further reduce emissions generated, it is imperative for Varia US to engage in substantial energy retrofitting across its portfolio. Some of the ways in which this can achieved are listed below.

Energy Conservation Measures

Tenant Electricity (35.29%) and Gas (3.9%) contribute to nearly 40% of the total emissions, and the emissions from transmission and distribution losses account for a total of 19.78%. Reducing the energy consumption and generating on-site renewable energy are the only two ways transmission and distribution loss emissions can be addressed as this falls outside of Vaira US' direct control. To align with the ambitious 1.5-degree Celsius pathway, Varia US is tasked with reducing its emissions by 63.3%.

Energy Audits

Conduct Energy Audits for the assets to identify measures to improve energy efficiency and decrease emissions. This can include installing LED lighting, improving insulation, and upgrading HVAC systems such as transitioning from Gas-fired Rooftop Units to Electric Rooftop Unit Packages. These initiatives not only reduce carbon emissions but can also result in long-term cost savings.

Tenant Vacant Spaces (Gas and Electricity):

Turning off the heating and cooling units and lighting in the units which are not in use by tenants, would save significant cost and energy. Currently electricity and gas at tenant vacant spaces contribute to a combined 2% of the total emissions.

Renewable Energy Adoption

The feasibility of renewable energy sources and transitioning to clean energy, both on-site and off-site, such as virtual power purchase agreements, should be explored. This has the potential to result in significant emission reductions. Engage with utility providers to explore the option of sourcing renewable energy through the green tariffs.

Carbon Offsetting

For unavoidable emissions from Downstream Leased Assets, Varia US can invest in carbon offset programs to mitigate residual emissions generated. These initiatives should be:

- publicly disclosed,
- aligned to best practice principles such as the Oxford Principles for Net Zero Aligned Carbon Offsetting or Green Building Council Carbon Offsets Principal to ensure offsets are accurate and of high quality,
- verified using offsetting registry such as Verified Carbon Standard, the Gold Standard, and Climate Action Reserve,
- prioritize removal offsets where available.

Some of the other recommendations which could assist in addressing the emissions in Varia US' carbon chain are implementing Waste Management Strategies to address the 4.45% emissions from Scope 3, Category 5: Waste Generated in Operations (Tenant Landfilled Waste).

Waste Management Strategies

Adopting a Waste Management Policy

By integrating a waste management policy directly into leases, Varia US can achieve both emission reductions and cost savings. Several factors which influence the emissions and cost saving are listed below.

1. Enhance Tenant Compliance and Engagement: To maximize the effectiveness of the waste management policy, it is crucial to engage residents through education and incentives that promote compliance. Tailored communication strategies and engagement programs can drive better adherence to waste management practices.

2. Implement Comprehensive Waste Management Measures: Adopting a broad range of waste management measures such as recycling, composting, reducing single-use items, and ensuring the proper disposal of hazardous waste will significantly impact the reduction of emissions and operational costs. Varia US should consider the specific needs and capabilities of each property when designing these measures.

3. Establish Robust Monitoring and Enforcement: Implementing regular monitoring and strict enforcement mechanisms will ensure that waste management policies are followed. This could include routine waste audits, resident surveys, and feedback mechanisms, as well as penalties for non-compliance, to maintain high standards across all properties.

4. Develop Necessary Infrastructure and Support: Providing adequate infrastructure such as recycling bins, compost facilities, and easy access to local waste management services is critical for the successful implementation of the policy. Active support from property management teams will ensure that these facilities are effectively utilized.

5. Align with Local Regulations and Leverage Incentives: Ensuring that the waste management policy aligns with local environmental regulations not only guarantees compliance but also positions Varia US to benefit from governmental incentives for reducing waste. This alignment will enhance the policy's acceptance and success.

Quantifying exact emissions savings from this initiative presents challenges due to variable factors such as tenant behavior and the effectiveness of implemented measures. It is recommended that Varia US adopt a systematic approach to track waste types, quantities, and management practices to better understand and optimize the policy's impact resulting in cost and emissions savings.

Conducting Biannual Waste Audits

Implementing biannual waste audits allows Varia US to identify the specific types of waste produced across its portfolio. This knowledge enables targeted actions to reduce emissions and tackle waste effectively.

Enhancing Recycling Efforts

Although recycling is already practiced to some extent across Varia US' properties, there's room to improve the recycling rate. Enhancing these efforts can decrease emissions from landfilled waste, though it may also slightly increase emissions from the recycling process itself, however this will have a net positive effect.

Introducing a Composting Program

Given that a considerable amount of waste at multifamily assets is organic food waste, establishing a composting program presents an efficient strategy to tackle these specific emission sources.

These recommendations have the potential to enable Varia US to achieve the 2030 SBT reduction goals.

Circular Economy

The key to reducing emissions from operating expenses and capital goods which contribute to nearly 30% of the total emissions is through circular economy principles. Primary focus should be on the use of recycled materials in maintenance and sustainable materials for minor replacements. In maintenance activities, incorporating recycled materials such as reclaimed wood, recycled metal, and repurposed building components can significantly reduce the carbon footprint associated with material extraction and processing.

This approach not only minimizes waste but also conserves natural resources by giving new life to existing materials. For minor replacements, selecting sustainable materials is crucial. Opting for products made from renewable resources like bamboo flooring, which grows quickly and regenerates without the need for replanting. Use low-VOC (volatile organic compounds) paints and finishes to improve indoor air quality and reduce harmful emissions. Sourcing materials locally can also reduce transportation emissions and support local economies.

By prioritizing durability and lifecycle impact, such as choosing long-lasting fixtures and fittings, the frequency of replacements decreases, further contributing to emission reductions.

5.0

OVERALL RESULTS

5.0 Overall Results

5.1 Total Scope 1 & 2 Emissions

Table 16 - Total Scope 1 & 2 Emissions Results

SCOPE 1	Emissions	Unit	Emissions Share
Gas (Landlord)	257,933	$kgCO_2e$	0.22%
Gas (Tenant Vacant)	216,151	$kgCO_2e$	0.19%
Refrigerants	2,021	$kgCO_2e$	0.002%
SCOPE 2			
Electricity (Landlord)	3,511,052	$kgCO_2e$	3.04%
Electricity (Tenant Vacant)	2,097,099	$kgCO_2e$	1.82%
TOTAL	6,084,256	$kgCO_2e$	5.27%

5.2 Total Scope 3 Emissions

Table 17 - Total Scope 3 Emissions Results

SCOPE 3	Emissions	Unit	Emissions Share
Category 1: Purchased Goods and Services (Tenant Water)	773,385	$kgCO_2e$	0.67%
Category 1: Purchased Goods and Services (Irrigation)	10,686	$kgCO_2e$	0.01%
Category 1: Purchased Goods and Services (Admin, Marketing, Turnover Maintenance and Contract Services)	2,437,806	$kgCO_2e$	2.11%
Category 2: Capital Goods (Refurbishment)	32,021,108	$kgCO_2e$	27.75%
Category 3: Fuel- and Energy-Related Activities (T&D losses)	22,828,378	$kgCO_2e$	19.78%
Category 5: Waste Generated in Operations (Landfilled)	5,102,945	$kgCO_2e$	4.42%
Category 5: Waste Generated in Operations (Recycled)	156,953	$kgCO_2e$	0.14%
Category 5: Waste Generated in Operations (Wastewater)	577,814	$kgCO_2e$	0.50%
Category 6: Business Travel (Flights)	15,372	$kgCO_2e$	0.01%
Category 6: Business Travel (Hotels)	386	$kgCO_2e$	0.0003%
Category 7: Employee Commuting	156,839	$kgCO_2e$	0.14%
Category 13: Downstream Leased Assets (Tenant Gas)	4,505,534	$kgCO_2e$	3.90%
Category 13: Downstream Leased Assets (Tenant Electricity)	40,722,686	$kgCO_2e$	35.29%
TOTAL	109,309,892	$kgCO_2e$	94.73%

5.3 Results

2023 Results

In 2023, Varia US' total emissions were 115,394,148 $kgCO_2e$, with 94.7% coming from Scope 3 as seen in Figure 6 and Figure 7. The largest portion, 35.29%, was due to 'Scope 3, Category 13: Downstream Leased Assets,' specifically from tenant electricity use, 'Scope 3, Category 2: Capital Goods (Refurbishment)' at 27.75% and 'Scope 3, Category 3: Fuel and Energy Related Activities (T&D losses)' at 19.78%. Other significant contributors include, 'Scope 3, Category 5: Waste Generated in Operations (Landfill)' at 4.42%, and 'Scope 3, Category 13: Downstream Leased Assets (Tenant Gas)' at 3.90%. See Figure 7 for the breakdown of Scope 3 emissions. Scope 1 emissions, from gas usage and refrigerants, account for only 0.41%.

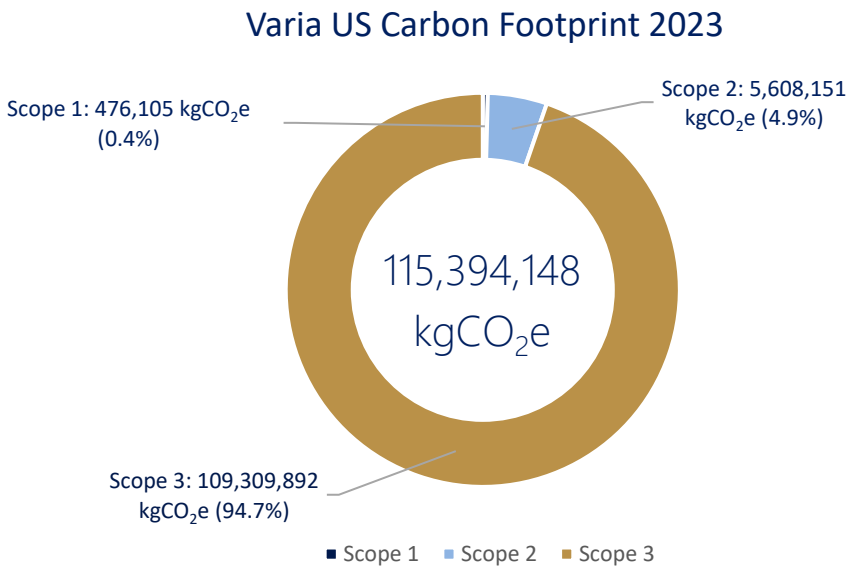

Figure 6 - Breakdown of Varia US Carbon Footprint 2023

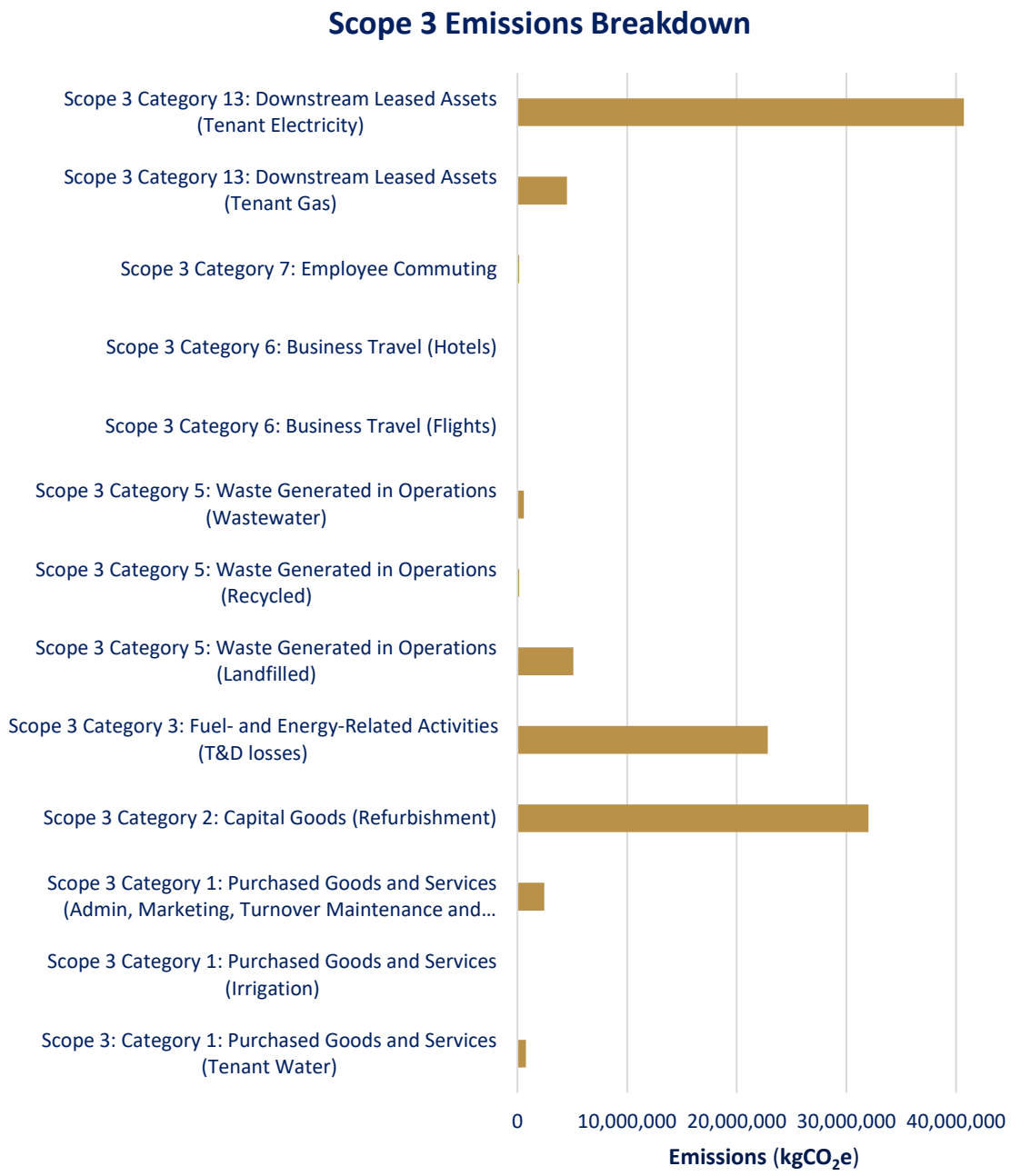

Figure 7 - Varia US Carbon Footprint 2023 Scope 3 Emissions Breakdown

Results by Assets under Varia US' Operational Control

Figure 8 presents greenhouse gas (GHG) emissions data across Varia US' real estate assets, categorized by Scope 1, Scope 2, and Scope 3 emissions. The data illustrates that while Scope 1 emissions are consistently low across the portfolio, there are significant variations in Scope 2 and Scope 3 emissions. Mallard Crossing at St. Matthew, M Club, The Wild Oak Apartments and Rolling Hills exhibit the highest overall emissions, with Mallard Crossing at St. Matthew and M Club nearing the 7,000,000 $kgCO_2e$ mark and Wild Oaks and Rolling Hills nearing the 6,000,000 $kgCO_2e$ mark. These properties have substantial Scope 3 emissions, making them some of the highest emitters in the portfolio. In contrast, Bellevue Hills, JRG Lofts and The Willows of Cummings have relatively lower emissions overall.

Lochwood Apartments, Breckenridge Square and Wood Hollow exhibit the highest Scope 1 emissions. In contrast, The Willows of Cummings, Cordova Creek and The Meadows have the lowest Scope 1 emissions. For Scope 2 emissions, the properties with the highest levels are Residences at Echelon, Mallard Crossing at St. Matthew, and The Wylde Apartments at Eagle Creek. Conversely, The Ridge on Spring Valley, Zona Village and River Oaks show the lowest Scope 2 emissions. The highest Scope 3 emissions across the Varia US Asset Portfolio are observed in Mallard Crossing at St. Matthew, M Club, and Wild Oak Apartments. Conversely, The Willows of Cummings, JRG Lofts and Bellevue Hills demonstrate the lowest Scope 3 emissions

Figure 8 - Emission Breakdown for the Assets in Varia US Portfolio

Figure 9 showcases the breakdown of the scope 1, 2, and 3 emissions for the assets that were sold in 2023. It can be seen that Lynnfield Place contributed most to the carbon footprint of Varia US followed by Maryland Park, Harrison Point and Woodbridge. The Scope 1 emissions are consistently low across all ten assets. The Scope 2 emissions are highest at Maryland Park followed by Aura, Harrison Point and Lynnfield Place. Maryland Park leads in Scope 2 emissions, possibly due to its sale date close to the end of the year, influencing its annual emission figures.

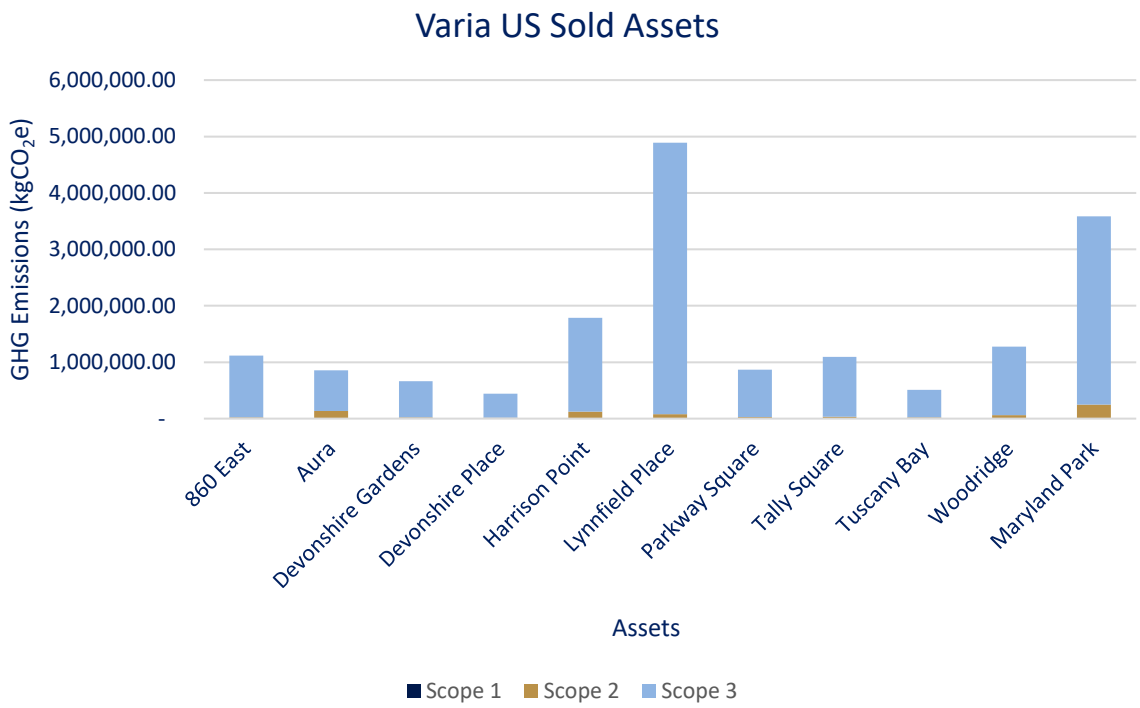

Figure 9 - Emission Breakdown for the Assets Sold in 2023.

6.0

DATA LIMITATIONS AND RECOMMENDATIONS

6.0 Next steps

6.1 Improvements

Identifying the limitations of the current study and understanding the potential improvements are essential steps for Varia US in refining its data collection and analysis methods. By addressing data quality issues and adopting the proposed recommendations, Varia US can significantly enhance the accuracy and reliability of its environmental impact assessments. This, in turn, supports more informed decision-making and the effective execution of Varia US' sustainability strategies.

Table 18 - Limitations and recommendations

Category	Current limitations	Recommendations
Scope 1 and 2 Energy Consumption	- The energy consumption data for ten out of eleven sold assets was estimated using benchmarks	- To record and store the energy consumption data of the sold assets to accurately track the emissions.
Category 1: Purchased Goods and Services (Water)	- Water usage for irrigation was based on average estimated value. - Water consumption benchmarks were used for assets with unusually low water consumption values. - Benchmarks were utilized to estimate the water consumption of the sold assets.	- Submeter and track the water consumption for irrigation usage. - Track and store the water consumption data of the sold assets to accurately estimate the company's emissions. - Track and perform quality checks on the water consumption data for the assets JRG Lofts, Varia at Highland Village, The Willows of the Cummings, and Zona Village in the portfolio.
Category 5: Waste Generated in Operations	- Waste generation for the sold assets was approximated to be an average of the available data from the rest of the assets in the portfolio.	- Track and store the waste generation data of the sold assets to accurately track the company's emissions.
Category 13: Downstream Leased Assets (Electricity and Gas)	- Seven of the assets in the portfolio did not have complete energy consumption data. - Benchmarks were utilized to estimate the emissions for ten of the sold assets.	- Track and perform quality checks on the energy consumption data of Beau Jardin, Brent Village, M Club, Maryland Park, Residences at Echelon, The Retreat at Northwest, and Shawnee Station - Track and store the energy consumption of the sold assets in order to accurately track the company's emissions.

Appendix 1

List of residential assets in Varia US portfolio in 2023.

#	Asset Name	State	City	Gross Floor Area (sqft)	Rentable Floor Area (sqft)	Landlord area (sqft)	Number of bedrooms	No. of days owned in the selected reporting year
1	Amaze at NoDa	NC	Charlotte	277,328	221,215	56,113	696	365
2	Ashford	TX	Houston	286,549	260,852	25,697	374	365
3	Avenue 8	AZ	Mesa	216,788	213,400	3,388	388	365
4	Beau Jardin	MO	Saint Louis	191,000	159,520	31,480	289	365
5	Bellevue Hills	NE	Bellevue	275,961	243,960	32,001	504	365
6	Breckenridge Square	KY	Louisville	362,464	332,090	30,374	535	365
7	Brent Village	NE	Bellevue	167,101	147,875	19,226	280	365
8	Brookwood	AZ	Tucson	209,118	206,784	2,334	368	365
9	Cordova Creek	TN	Cordova	217,145	214,038	3,107	336	365
10	JRG Lofts	KY	Covington	171,393	131,543	39,850	225	365
11	Lochwood Apartments	IN	New Albany	313,600	268,800	44,800	369	365
12	M Club	IN	Indianapolis	310,287	303,544	6,743	540	365
13	Mallard Crossing at St. Matthew	KY	Louisville	603,028	587,718	15,310	960	365
14	Maryland Park	MO	Maryland Hts	218,651	193,284	25,367	377	361
15	Meadows, The	TN	Memphis	194,200	191,200	3,000	290	365
16	Mission Palms	AZ	Tucson	377,807	372,918	4,889	600	365
17	Residences at Echelon	MO	Lee Summit	325,761	235,513	90,248	368	365
18	Retreat Northwest, The	IN	Indianapolis	357,072	347,620	9,452	616	365
19	Ridge on Spring Valley, The	TX	Dallas	166,453	166,194	259	296	365
20	River Oaks	AZ	Tucson	216,311	212,074	4,237	424	365
21	Rolling Hills	KY	Louisville	510,040	504,640	5,400	800	365
22	Shawnee Station	KS	Shawnee	251,440	210,648	40,792	426	365
23	Tierra Pointe	NM	Albuquerque	217,250	211,720	5,530	576	365
24	Varia at Highland Village	TX	Highland Village	234,581	195,115	39,466	279	365
25	Varia at Oakcrest	SC	Columbia	353,600	299,102	54,498	472	365
26	Village at Mayfield, The	OH	Mayfield	299,559	274,825	24,734	348	365
27	West End at Fayetteville	NC	Fayetteville	509,241	425,784	83,457	662	365
28	Wild Oak Apartments	MO	Kansas City	329,964	325,488	4,476	558	365
29	Willows of Cummings, The	GA	Cumming	157,719	147,148	10,571	319	365
30	Wood Hollow	TX	Euless	256,779	251,639	5,140	428	365
31	Wylde Apartments at Eagle Creek	IN	Indianapolis	242,400	202,000	40,400	360	365
32	Zona Village	AZ	Tucson	100,430	98,868	1,562	219	365
33	860 East	OH	Cincinnati	215,134	211,684	3,450	416	165

34	Aura	IN	Indianapolis	172,244	150,867	21,377	341	144
35	Devonshire Gardens	IN	Evansville	143,552	142,830	722	196	150
36	Devonshire Place	IN	Evansville	93,918	92,981	937	160	150
37	Harrison Point	IN	Indianapolis	314,655	286,550	28,105	614	176
38	Lynnfield Place	TN	Memphis	467,770	465,350	2,420	816	233
39	Parkway Square	FL	Tallahassee	231,060	224,330	6,730	393	149
40	Tally Square	FL	Tallahassee	285,984	277,656	8,328	452	149
41	Tuscany Bay	IN	Lawrenceburg	108,969	104,160	4,809	240	135
42	Woodridge	OH	Fairfield	268,800	254,600	14,200	671	171

Carbon Footprint Analysis 2023

06/12/2024

Longevity Partners offices

London

Longevity Partners Limited
9 Wimpole Street
London W1G 9SR
United Kingdom

Contact:
+44 (0)20 3693 9814
info@longevity.co.uk

Paris

Longevity Partners SAS (France & Belux)
69 Boulevard Haussmann
75008 Paris
France

Contact:
0170754914
info@longevity.co.uk

Amsterdam

Longevity Partners B.V.
Gustav Mahlerplein 28
1082 MA Amsterdam
Nederland

Contact:
+31 (0)20 237 93 56
info@longevitypartners.nl

Munich

Longevity Partners GmbH
Mindspace Stachus
Herzogspitalstraße 24
80331
Munich
Germany

Contact:
info@longevity.de

Austin

Longevity Partners, Inc.
823 Congress Ave #1330
Austin
TX 78701
USA

Contact:
info@longevity-partners.com

Seattle

WeWork c/o Longevity Partners, Inc.
107 Spring St
Seattle
WA 98104
USA

Contact:
info@longevity-partners.com

New York

Longevity Partners, Inc.
1325 Avenue of the Americas, Suite 2753A
New York
NY 10019
USA

Contact:
info@longevity-partners.com

Milan

Longevity Partners SRL
Via Pola 11
20124
Zona Isola
Milan
Italy

Contact:
info@longevity-partners.com