The Carbon Accounting Company™

The Museum of Contemporary Art in Los Angeles

Greenhouse Gas Emissions Report
for the period January 1st to December 31st, 2021

November 18, 2022

November 18, 2022

Simone Paz
Associate Director of Sustainability
The Museum of Contemporary Art
250 South Grand Avenue
Los Angeles, CA 90012

spaz@moca.org

Dear Ms. Paz,

It is my pleasure to present this quantification of greenhouse gas emissions resulting from operations during the period January 1st to December 31st, 2021.

Our review of the data is based solely on our assessment of the information provided to us by MOCA.

Based on the information provided, the emissions as reported in this document are credible and defensible as an attempt to quantify the emissions sources and resultant emissions levels for the sources provided.

If you have any questions, please do not hesitate to contact me at 416.494.9999 ext.15 or ian@thecarbonaccountingcompany.com.

Yours sincerely,

Ian Lipton
President & CEO

The Carbon Accounting Company™

Table of Contents

1 Introduction

The Museum of Contemporary Art in Los Angeles (MOCA) was established in 1979 with the mission of presenting, collecting, preserving, and interpreting contemporary art. Over time, it has come to house over 7,000 pieces created in a variety of media.

The museum operates two venues in Los Angeles: The MOCA Grand Avenue (MOCA Grand), and The Geffen Contemporary at MOCA (Geffen). The museum also operates a much smaller remote exhibit in the Nevada desert (Double Negative) which consists of land art accessible only by four-wheel drive vehicle or motorcycle.

In addition to regular museum operations and exhibitions, MOCA offers a series of events, performances, and education initiatives, as well as a travel program for donors to accompany curators on various excursions around the world.

The museum leases space in several offsite storage facilities.

The purpose of this carbon inventory is to support MOCA in their voluntary efforts to reduce the organization's environmental impact and to neutralize its carbon footprint going forward. This initiative was encouraged and supported by artist Haley Mellin and the Art into Acres non-profit.

It should be noted that the terms "carbon footprint", "GHG inventory", "carbon inventory" and "emissions inventory" are used interchangeably. They all refer to the same thing, which is the quantity of greenhouse gas emissions caused from the activities associated with MOCA's operations.

The primary greenhouse gases in this inventory are carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). While carbon (C) occurs in only two of these three gases, it is standard practice to include at least all three gases in most organizational carbon footprints as these three gases are the main drivers of global warming and the catastrophic climate crisis we are facing. Also included in this inventory are fugitive emissions from refrigerant gases used in air conditioning and refrigeration devices.

The carbon dioxide, methane, nitrous oxide, and refrigerant gas emissions are quantified and converted into an equivalent amount of carbon dioxide (CO2e) based on the global warming potentials of each of these gases. This is standard practice in all organizational carbon footprints. More on this procedure can be found in Section 3.1 General Methodology.

2 Scope of the Study

2.1 Quantification Boundaries

This carbon inventory follows the operational control approach. The operational control approach covers emissions generated from activities for which MOCA has operational control, including control over policy and management practices such as purchasing decisions.

An example of emissions-generating activities that would fall outside operational control are the business operations of a supplier that is neither owned nor operated by MOCA. However, if that supplier is hired to provide services for MOCA, the carbon associated from those activities could be included in this inventory. An example would be emissions from energy used by a supplier, such as a

carpenter, while working onsite to install an exhibition. The energy used in the carpenter's workshop could also be included if that energy is used for the MOCA project; but energy in the workshop for non-MOCA activities would not be included.

This carbon inventory consists of emissions generated from operational activities classified as Scope 1, 2 or 3. These standard classification categories refer to the direct or indirect nature of the emissions causality.

Scope 1 activities are those that create emissions directly within the operational boundaries. Examples include the combustion of natural gas in the museum's boiler, or the fuel used in vehicles operated by the museum.

Scope 2 activities are those that create emissions indirectly from the use of energy within the operational boundaries. An example is the emissions generated from the use of electricity. While the actual emissions occur at the electricity generating facility, which is outside MOCA's operational control, the electricity is used by MOCA within their operational control.

Scope 3 activities are all other activities that create emissions indirectly within the operational boundary. For example, employees traveling to and from work generate indirect emissions. The employees are required by MOCA to travel to work, even though the vehicles themselves are not operated by MOCA. As such, the emissions caused by travelling to and from work are indirectly within MOCA's control and therefore are included in the inventory as Scope 3.

Table 1 lists all activities included in this inventory.

Table 1. GHG Inventory Boundaries and Activities

Scope 1	Stationary combustion of fossil fuels (natural gas, heating oil, propane, etc.) for heating buildings and water Mobile combustion of fossil fuels (gasoline, diesel, propane, etc.) used in MOCA operated road vehicles and off-road vehicles (e.g., forklifts) Combustion of fossil fuels used in backup generators Fugitive emissions from air conditioning and refrigeration units
Scope 2	Purchased electricity Purchased district energy (e.g., hot water, chilled water, steam)
Scope 3	Freight for exhibitions and acquisitions Freight for operations Business travel including transportation and accommodations Visitor transportation to the museum Employee commute Exhibition construction materials Waste disposal Offsite storage Transportation of employees and guests to offsite events

2.2 Exclusions

It is standard practice in carbon accounting to set a de-minimis threshold below which certain activities are excluded from the inventory. In this case, activities that were deemed to contribute less than 1% of the overall carbon footprint were excluded. See Table 2 for a list of de-minimis activities.

Table 2. De-Minimis Activities Excluded from the Emissions Inventory

Scope 1	None
Scope 2	None
Scope 3	Double Negative Desert Exhibit: The only emissions from this remote permanent installation in the Nevada Desert are from fossil fuel powered off-road vehicles visitors use to access the site. It is deemed that these visits are few and infrequent, and therefore the emissions are well below the de-minimis threshold of 1%. Rentals of furniture and other supplies Purchase and consumption of supplies Marketing material including website

3 Methodology and Assumptions

3.1 General Methodology

This emissions quantification follows the principles and methods of The GHG Protocol Corporate Accounting and Reporting Standard (https://ghgprotocol.org/corporate-standard).

Emissions were calculated as follows:

3.1.1 Stationary combustion of fossil fuels, mobile combustion of fossil fuels, and combustion of fossil fuels in backup generators

Three main greenhouse gases from stationary combustion – carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) – were quantified and converted into carbon dioxide equivalents (CO2e) as follows:

$$CO2e = \sum [\, Q_{ft} \times (CO2_{EF\,ft} + (CH4_{EF\,ft})(CH4_{GWP}) + (N2O_{EF\,ft})(N2O_{GWP})) \,]_{ft}$$

where,

Q_{ft} = quantity of fuel type used

$CO2_{EF\,ft}$ = carbon dioxide emissions factor for fuel type

$CH4_{EF\,ft}$ = methane emissions factor for fuel type

$CH4_{GWP}$ = methane global warming potential

$N2O_{EF\ ft}$ = nitrous oxide emissions factor for fuel type

$N2O_{GWP}$ = nitrous oxide global warming potential

ft = fuel type

3.1.2 Fugitive emissions from air conditioning and refrigeration units

Greenhouse gases from air conditioning and refrigeration units (see Table 4) were quantified and converted into carbon dioxide equivalents (CO2e) following the US EPA Source Level Refrigeration Gas CO2 Equivalent Emissions - Screening Method.

3.1.3 Purchased electricity

MOCA purchases electricity from the local utility grid. They do not engage in electricity purchase agreements with providers sourcing electricity from other markets. Therefore, the location-based electricity emissions method was used.

Three main greenhouse gases from the generation of electricity – carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) – were quantified and converted into carbon dioxide equivalents (CO2e) as follows:

$$CO2e = \sum [E_{local\ grid} \times (CO2_{EF\ local\ grid} + (CH4_{EF\ local\ grid})(CH4_{GWP}) + (N2O_{EF\ local\ grid})(N2O_{GWP}))]_{local\ grid}$$

where,

$E_{local\ rid}$ = kilowatt-hours (kWh) of electricity purchased from local grid

$CO2_{EF\ local\ grid}$ = carbon dioxide emissions factor for local grid

$CH4_{EF\ local\ grid}$ = methane emissions factor for local grid

$CH4_{GWP}$ = methane global warming potential

$N2O_{EF\ local\ grid}$ = nitrous oxide emissions factor for local grid

$N2O_{GWP}$ = nitrous oxide global warming potential

local grid = electricity grid on which each building is located

3.1.4 Purchased district energy (i.e., hot water, chilled water)

MOCA purchases hot water and chilled water from the local utility for the MOCA Grand.

Three main greenhouse gases from the generation of hot water – carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) – were quantified and converted into carbon dioxide equivalents (CO2e) as follows:

$$CO2e = [HW \times (CO2_{EF\ HW} + (CH4_{EF\ HW})(CH4_{GWP}) + (N2O_{EF\ HW})(N2O_{GWP}))]$$

where,

HW = quantity of hot water purchased

$CO2_{EF\ HW}$ = carbon dioxide emissions factor for purchased hot water (reference US EPA Emissions Factors)

$CH4_{EF\ HW}$ = methane emissions factor for purchased hot water (reference US EPA Emissions Factors)

$CH4_{GWP}$ = methane global warming potential

$N2O_{EF\ HW}$ = nitrous oxide emissions factor for purchased hot water (reference US EPA Emissions Factors)

$N2O_{GWP}$ = nitrous oxide global warming potential

Three main greenhouse gases from the generation of chilled water – carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) – were quantified and converted into carbon dioxide equivalents (CO2e) as follows:

$$CO2e = [CW \times (CO2_{EF\ CW} + (CH4_{EF\ CW})(CH4_{GWP}) + (N2O_{EF\ CW})(N2O_{GWP}))]$$

where,

CW = quantity of chilled water purchased

$CO2_{EF\ CW}$ = carbon dioxide emissions factor for purchased chilled water (reference Energy Star Portfolio Manager, District Chilled Water)

$CH4_{EF\ CW}$ = methane emissions factor for purchased chilled water (reference Energy Star Portfolio Manager, District Chilled Water)

$CH4_{GWP}$ = methane global warming potential

$N2O_{EF\ CW}$ = nitrous oxide emissions factor for purchased chilled water (reference Energy Star Portfolio Manager, District Chilled Water)

$N2O_{GWP}$ = nitrous oxide global warming potential

3.1.5 Freight

Each freight shipment was recorded by longitude and latitude coordinates. Using the Haversine formula, "as-the-crow-flies" distances were then calculated. Any air or sea shipment distance was then based on this result. To determine road (rail) shipment distances, the Haversine formula result was grossed up by a factor of 25% to account for longer, indirect ground travel routes.

Freight shipment weights (chargeable weight) were gathered from shipping invoices. Where no such data was provided, an algorithm using the shipped item's dimensions was used to arrive at a best estimate of the chargeable shipping weight. See Section 3.3 Assumptions for further information.

Three main greenhouse gases from the transportation of freight – carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) – were quantified and converted into carbon dioxide equivalents (CO2e) as follows:

$$CO2e = \sum [\ D_{mode} \times W \times (CO2_{EF\ mode} + (CH4_{EF\ mode})(CH4_{GWP}) + (N2O_{EF\ mode})(N2O_{GWP}))\ ]_{mode}$$

where,

D_{mode} = distance travelled by mode of transportation

W = chargeable shipping weight

$CO2_{EF\ mode}$ = carbon dioxide emissions factor for mode of freight transportation

$CH4_{EF\ mode}$ = methane emissions factor for mode of freight transportation

$CH4_{GWP}$ = methane global warming potential

$N2O_{EF\ mode}$ = nitrous oxide emissions factor for mode of freight transportation

$N2O_{GWP}$ = nitrous oxide global warming potential

mode = mode of freight transportation

All freight emissions factors were sourced from US EPA Emissions Factors.

3.1.6 Visitor transportation to and from museum

MOCA provided the total number of visitors, the estimated round-trip distance traveled per visit, and the average number of visitors per group. Assuming all visits were by passenger vehicles, three main greenhouse gases from transportation – carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) – were quantified and converted into carbon dioxide equivalents (CO2e) as follows:

$$CO2e = \sum [\ D_{mode} \times (CO2_{EF\ mode} + (CH4_{EF\ mode})(CH4_{GWP}) + (N2O_{EF\ mode})(N2O_{GWP}))\ ]_{mode}$$

where,

D_{mode} = distance travelled by mode of transportation

$CO2_{EF\ mode}$ = carbon dioxide emissions factor for mode of transportation (reference US EPA Emissions Factors)

$CH4_{EF\ mode}$ = methane emissions factor for mode of transportation (reference US EPA Emissions Factors)

$CH4_{GWP}$ = methane global warming potential

$N2O_{EF\ mode}$ = nitrous oxide emissions factor for mode of transportation (reference US EPA Emissions Factors)

$N2O_{GWP}$ = nitrous oxide global warming potential

mode = mode of transportation

3.1.7 Business travel transportation and accommodations

Three main greenhouse gases from business travel transportation – carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) – were quantified and converted into carbon dioxide equivalents (CO2e) as follows:

$$CO2e = \sum [\ D_{mode} \times (CO2_{EF\ mode} + (CH4_{EF\ mode})(CH4_{GWP}) + (N2O_{EF\ mode})(N2O_{GWP}))\ ]_{mode}$$

where,

D_{mode} = distance travelled by mode of transportation

$CO2_{EF\ mode}$ = carbon dioxide emissions factor for mode of transportation (reference US EPA Emissions Factors)

$CH4_{EF\ mode}$ = methane emissions factor for mode of transportation (reference US EPA Emissions Factors)

$CH4_{GWP}$ = methane global warming potential

$N2O_{EF\ mode}$ = nitrous oxide emissions factor for mode of transportation (reference US EPA Emissions Factors)

$N2O_{GWP}$ = nitrous oxide global warming potential

mode = mode of transportation

For emissions from overnight hotel accommodations, MOCA provided the number of hotel room-nights by country of destination. Using the accommodation room-night carbon factors of the UK Department for Business, Energy and Industrial Strategy, and the Department for Environment, Food and Rural Affairs (DEFRA), the total room-nights for each country were multiplied by the corresponding room-night carbon factor.

3.1.8 Exhibition construction materials

Life cycle emissions factors for exhibition construction materials were primarily sourced from the UK Department for Business, Energy and Industrial Strategy, and the Department for Environment, Food and Rural Affairs (DEFRA) or from the Ecoinvent version 3.8 (2021) database. For material not found in these databases, other online sources were used. For complete information, contact The Carbon Accounting Company.

The emission activity boundary was "cradle-to-gate".

3.1.9 Waste disposal

Two types of waste were accounted for: Dry mixed recycling, and general landfill waste. Quantities were tracked based on the cubic yards of waste bins emptied during the period.

Total volumes were multiplied by the corresponding emission factors sourced from US EPA Emissions Factors

For more information, see Section 3.3 Assumptions.

3.1.10 Offsite storage

The total electricity and fossil fuel used in each of MOCA's shared offsite storage facilities were apportioned according to MOCA's share of the storage space leased in each facility. The consumption of each energy source was then multiplied by the corresponding emissions factor following the same formula as in sections 3.1.1 and 3.1.3 above.

3.1.11 Commute to and from work by employees, and transportation of employees and guests to and from offsite events

Three main greenhouse gases from employee commute and other forms of transportation – carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) – were quantified and converted into carbon dioxide equivalents (CO2e) as follows:

$$CO2e = \sum [\, D_{mode} \times (CO2_{EF\,mode} + (CH4_{EF\,mode})(CH4_{GWP}) + (N2O_{EF\,mode})(N2O_{GWP})) \,]_{mode}$$

where,

D_{mode} = distance travelled by mode of transportation

$CO2_{EF\,mode}$ = carbon dioxide emissions factor for mode of transportation (reference US EPA Emissions Factors)

$CH4_{EF\ mode}$ = methane emissions factor for mode of transportation (reference US EPA Emissions Factors)

$CH4_{GWP}$ = methane global warming potential

$N2O_{EF\ mode}$ = nitrous oxide emissions factor for mode of transportation (reference US EPA Emissions Factors

$N2O_{GWP}$ = nitrous oxide global warming potential

mode = mode of transportation

3.2 Emissions Factors

Unless otherwise stated, all emissions calculations were based on the April 1, 2021 version of the US EPA GHG Emissions Factors. Construction material life cycle emissions factors were primarily sourced from the UK Department for Business, Energy and Industrial Strategy, and the Department for Environment, Food and Rural Affairs (DEFRA) or from the Ecoinvent version 3.8 (2021) database.

3.3 Assumptions

Data Collection:

- All data were collected and entered by MOCA personnel directly in the data collection workbook provided by The Carbon Accounting Company. It is assumed that the data entered by MOCA personnel were accurate and complete

Mobile Combustion:

- It is assumed mobile combustion of gasoline and propane is split evenly between MOCA Grand and Geffen

Freight:

- Road distances were based on the Haversine formula and grossed up by 25% to account for non-linear road routes
- Road freight vehicles are assumed to be average laden, diesel-powered heavy goods vehicles (HGVs)

Offsite Event Transportation:

- It is assumed transportation was in single-occupant passenger cars (for definition of "passenger car", please see Employee Commute below

Waste Disposal:

- It is assumed average density of municipal solid waste is 64 lbs per cubic yard and average density of dry mixed recycling is 155 lbs per cubic yard. (reference: https://www.epa.gov/sites/default/files/2016-04/documents/volume_to_weight_conversion_factors_memorandum_04192016_508fnl.pdf
- It is assumed general waste goes to landfill
- It is assumed exhibition construction waste goes to landfill
- It is assumed dry mixed recycled was goes to an open-loop recycling facility (i.e., the waste material is recycled into other products)
- Landfill and recycling emissions include transport to the landfill and recycling facilities

Visitor Transportation:

- It is assumed all trips to the museum are in passenger cars and that each car was occupied on average by 2.27 visitors. It is also assumed any overnight hotel accommodations, if required, were insignificant and well below de-minimis thresholds

Exhibition Construction Material:

- It is assumed the density of paint is 1.1 kg/L (reference https://www.jotun.com/Datasheets/Download?url=%2FTDS%2FTDS__12300__Alkyd+Topcoat__Euk__GB.pdf)
- It is assumed the density of plywood is 1.91 lbs/square foot (reference https://www.inchcalculator.com/how-much-does-plywood-weigh/)
- It is assumed the density of steel studs is 1.75 lbs/linear foot (reference https://www.bgstructuralengineering.com/BGASCE7_10/BGASCE7003/BGASCE700302.htm)
- It is assumed the density of drywall is 10.1 kg/square meter (reference https://www.british-gypsum.com/documents/product-data-sheet-pds/british-gypsum-pds-gyproc-wallboard-ten-12-5mm.pdf)

Employee Commute:

- "Passenger car" includes passenger cars, minivans, SUVs, and small pickup trucks (vehicles with wheelbase less than 121 inches). It is assumed each passenger car commute contained one vehicle occupant (i.e., no car-pooling).
- Emissions from electric bike are negligible

4 Results

Table 3. Emissions Sources

	MOCA Grand	MOCA Geffen	Total
Scope 1			
Stationary Combustion: Natural Gas	0	12,245 therms	12,245 therms
Stationary Combustion: Diesel	24 gallons	0	24 gallons
Mobile Combustion: Gasoline	138 gallons	138 gallons	276 gallons
Mobile Combustion: Propane	18 gallons	18 gallons	36 gallons
Air Conditioning & Refrigeration	See Table 4	See Table 4	
Scope 2			
Grid Electricity	635,880 kWh	303,000 kWh	938,880 kWh
Purchased Hot Water	37,360 therms	0	37,360 therms
Purchased Chilled Water	362,269 ton-hours	0	362,269 ton-hours
Scope 3			
Freight: Exhibitions, Acquisitions & Store	See Table 5	See Table 5	
Freight: Operations	See Table 6	See Table 6	
Business Travel: Transportation	See Table 7	See Table 7	
Business Travel: Accommodations	-	-	56 room-nights
Visitor Transportation	316,665 miles	189,460 miles	
Employee Commute	See Table 8	See Table 8	
Exhibition Construction	See Table 9	See Table 9	
Waste Disposal	See Table 10	See Table 10	
Offsite Storage	See Table 11	See Table 11	
Offsite Events Transportation	-	-	2,597 miles

Table 4. Air Conditioning and Refrigeration

	MOCA Grand	MOCA Geffen
Scope 1: Fugitive Emissions		
Refrigerant	R-410A	R-410A
	R-410A	R-410A
	R-410A	R-410A
	R-410A	R-410A
	R-410A	R-410A
	R-600A	R-410A
	HFC-134a/R-134a	R-410A
	HFC-134a/R-134a	R-410A
	HFC-134a/R-134a	R-410A
	CFC-12/R-12	R-410A
	HFC-134a/R-134a	R-410A
	HFC-134a/R-134a	R-410A
	CFC-12/R-12	CFC-12/R-12

	R-600A	HFC-134a/R-134a
	HFC-134a/R-134a	HFC-134a/R-134a

Table 5. Freight: Exhibitions, Acquisitions & Store

	Total	
Scope 3: Freight: Exhibitions, Acquisitions & Store	Weight (lbs)	Distance (miles)
Road Shipments	13,819	149,628
Air Shipments	2,190	73,608
Rail Shipments	0	0
Sea Shipments	0	0

Table 6. Freight: Operations

	Total	
Scope 3: Operations	Weight (lbs)	Distance (miles)
Road Shipments	1,514	14,076
Air Shipments	106	16,346
Rail Shipments	0	0
Sea Shipments	0	0

Table 7. Business Travel: Transportation

	Total	
Scope 3: Business Travel		miles
Business Travel Transportation	Passenger car	7,849
	Intercity rail	437
	Air: Short haul (<300 miles)	296
	Air: Medium haul (300-2300 miles)	58,680
	Air: Long haul (>2300 miles)	289,530

Table 8. Employee Commute

		Total
Scope 3: Commute		
Employee Commute	Walking (miles)	10,097
	Biking (miles)	2,719
	Motorcycle (miles)	0
	Bus (passenger miles)	17,476
	Commuter train (passenger miles)	777
	Subway/Tram (passenger miles)	2,330
	Passenger car (passenger miles)	354,967

Table 9. Exhibition Construction

	Total
Scope 3: Exhibition Construction Materials	
Paint	1,472 gallons
5/8" plywood	216 square feet
6" steel studs	10,532 linear feet

Table 10. Waste Disposal

	Total
Scope 3: Waste Disposal	
General waste to landfill	23 tons
Exhibition construction waste to landfill	3 tons
Dry mixed recycling	55 tons

Table 11. Offsite Storage

	Total		
Scope 3: Offsite Storage Facilities	Electricity (kWh)	Natural Gas (therms)	Propane (lbs)
Vernon 1	324	0	0
LA	2,829	0	0
Vernon 2	26,919	5	18
Inglewood	5,781	85	0.7
Culver City	3,778	43	7
Vernon 3	101	0	0
Compton	70,715	0	0
South Gate	209	0	0

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Table 12. Greenhouse Gas Emissions for 2021

	MOCA Grand	MOCA Geffen	Total*
Scope 1	kg CO2e	kg CO2e	kg CO2e
Stationary Combustion: Natural Gas	0	65,039	65,039
Stationary Combustion: Diesel	246	0	246
Mobile Combustion: Gasoline	1,216	1,216	2,432
Mobile Combustion: Propane	103	103	206
Air Conditioning & Refrigeration	3,108	11,401	14,509
Total Scope 1	4,674	77,759	82,433
Scope 2	kg CO2e	kg CO2e	kg CO2e
Grid Electricity	131,298	62,564	193,863
Purchased Hot Water	248,063	0	248,063
Purchased Chilled Water	254,903	0	254,903
Total Scope 2	634,264	62,564	696,828
Scope 3	kg CO2e	kg CO2e	kg CO2e
Freight: Exhibitions, Acquisitions & Store	-	-	18,588
Freight: Operations	-	-	648
Business Travel: Transportation	-	-	57,097
Business Travel: Accommodations	-	-	1,166
Visitor Transportation	47,933	28,678	76,612
Employee Commute	-	-	123,288
Exhibition Construction	-	-	36,961
Waste Disposal	-	-	20
Offsite Storage	-	-	23,353
Offsite Events Transportation	-	-	892
Total Scope 3	-	-	338,626
		Total Emissions (kg CO2e)	1,117,888
		Total Emissions (metric tons CO2e)	**1,118**

*Totals include rounding

Figure 1. Emissions by Scope

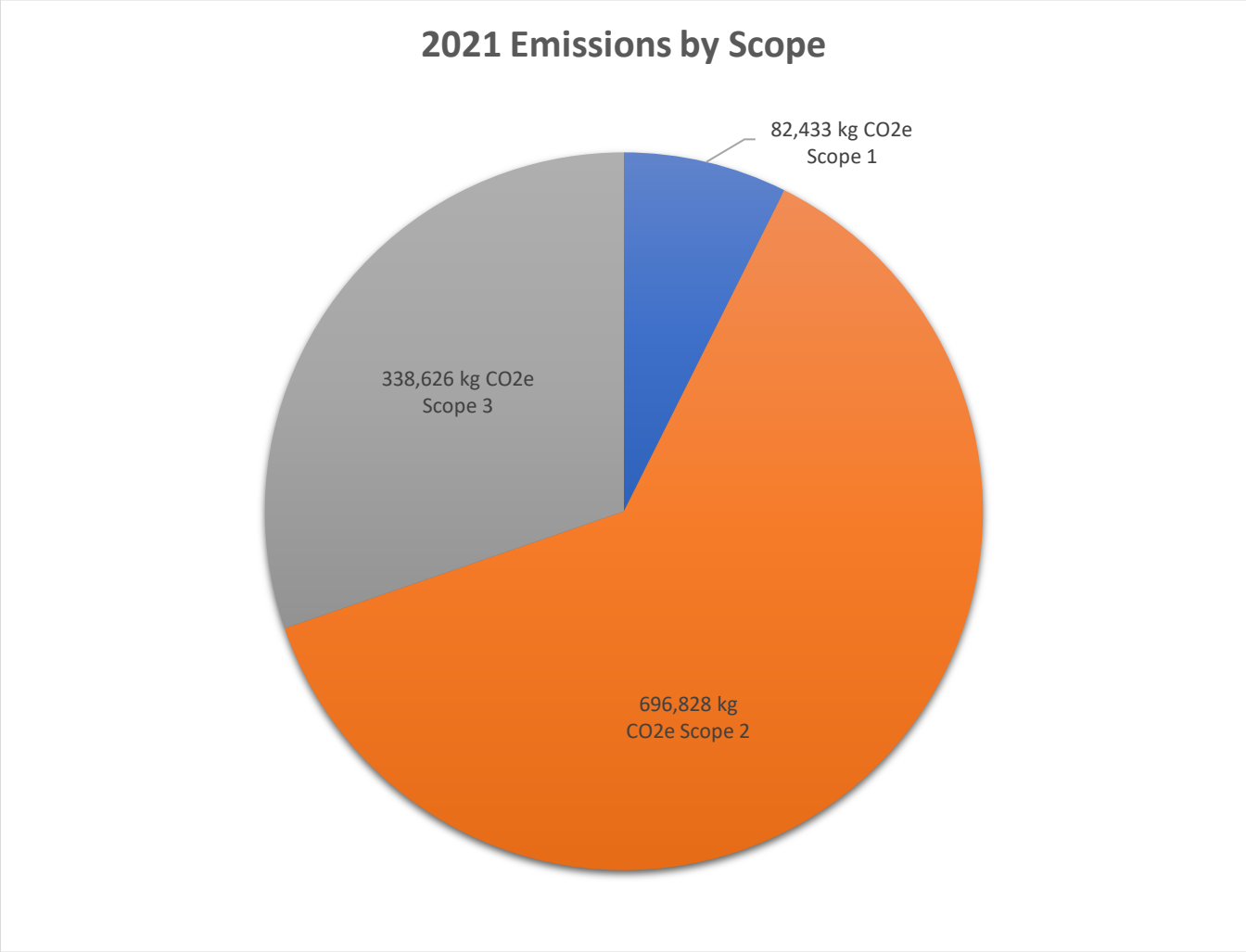

Figure 2. Emissions by Source

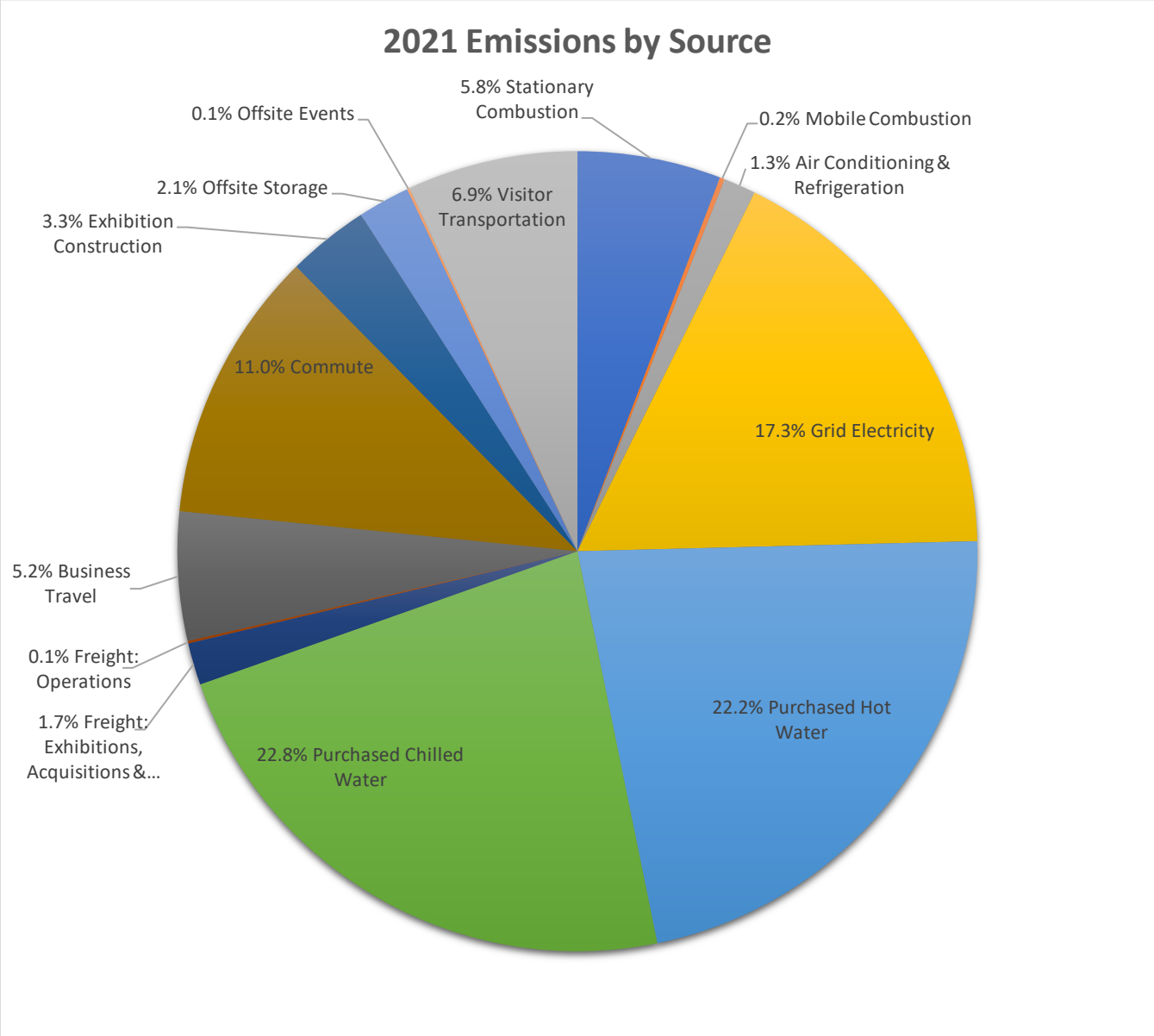

Figure 3. Scope 1, 2 & 3 Emissions Since 2019 Base Year

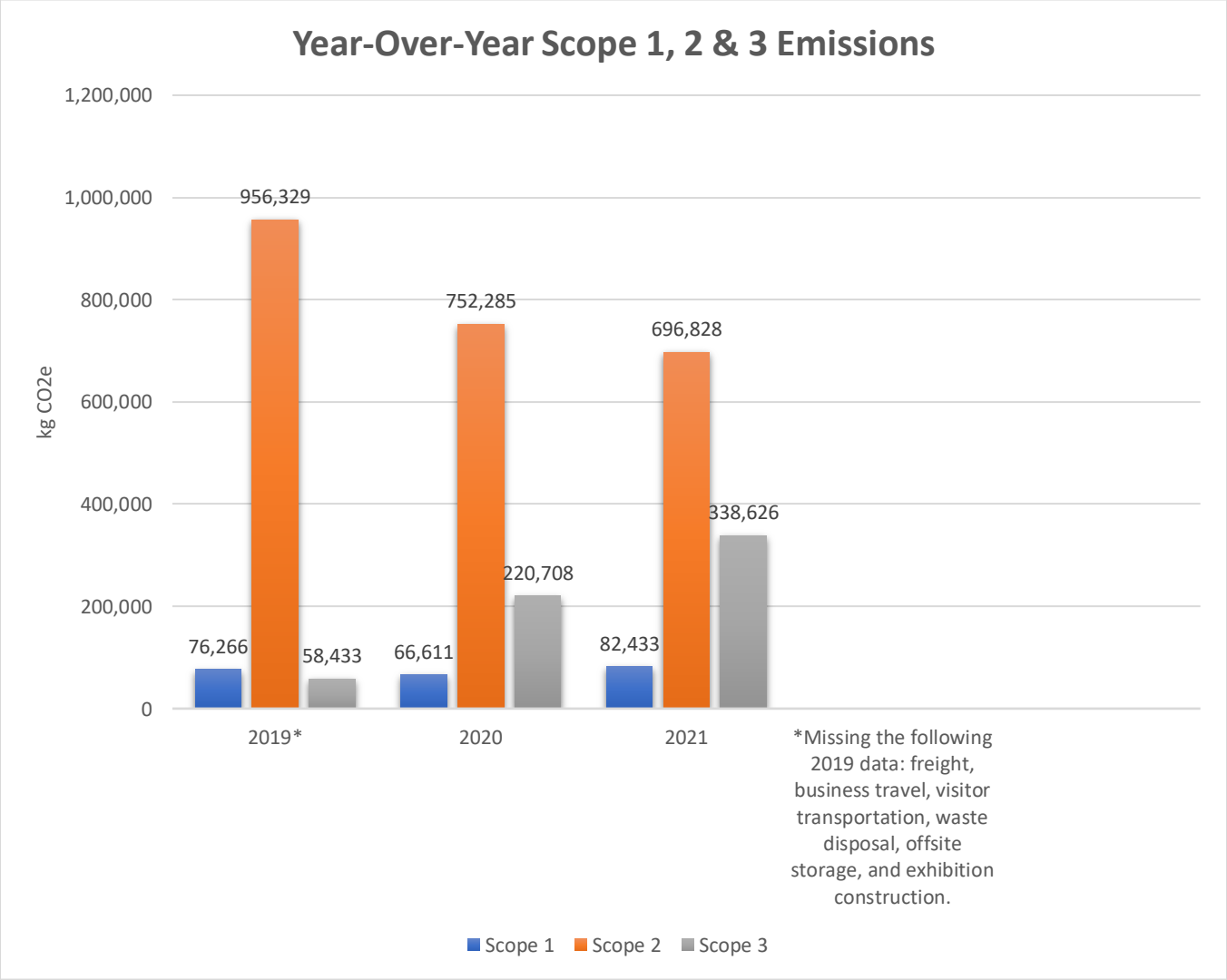

Figure 4. Total Emissions Since 2019 Base Year

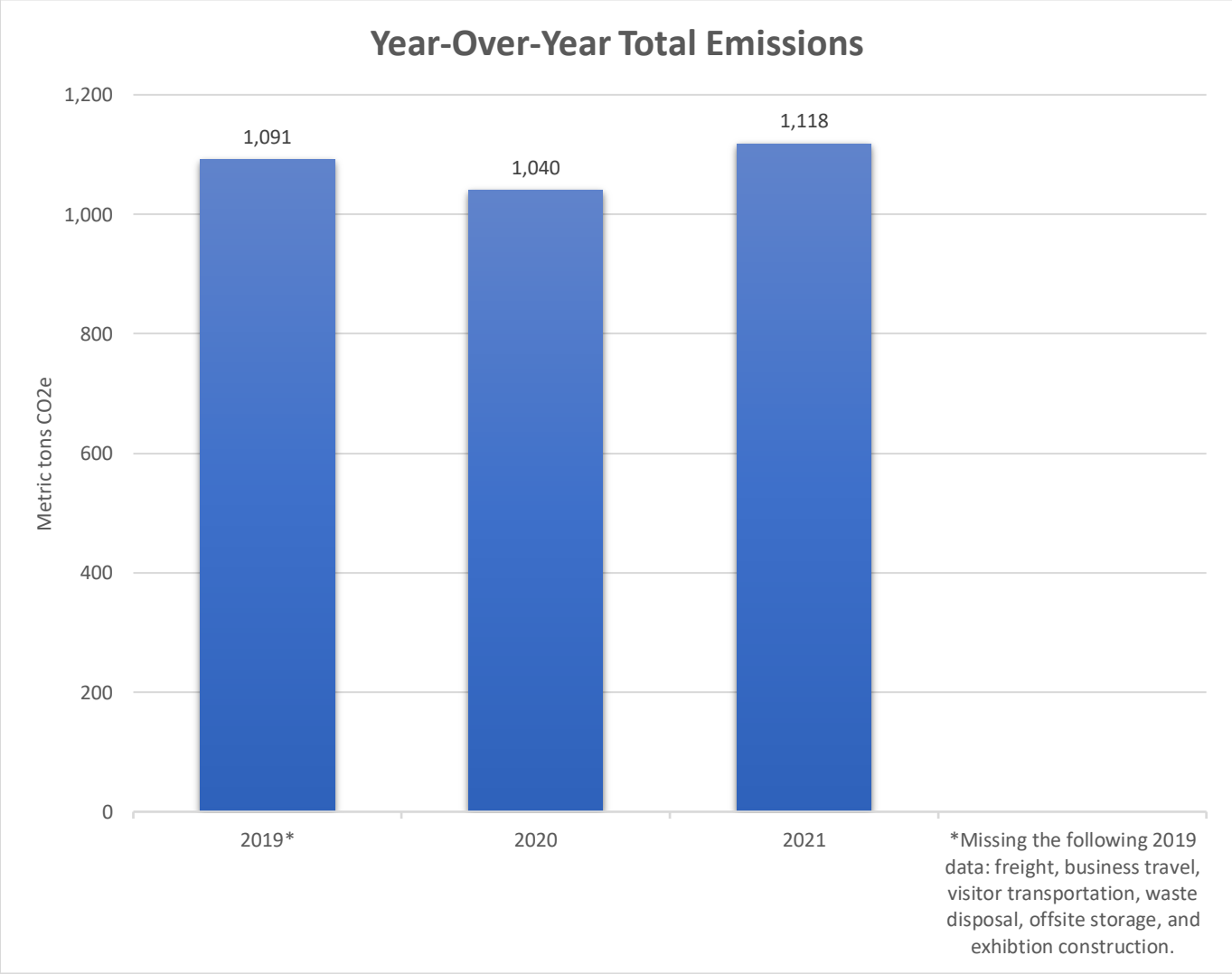

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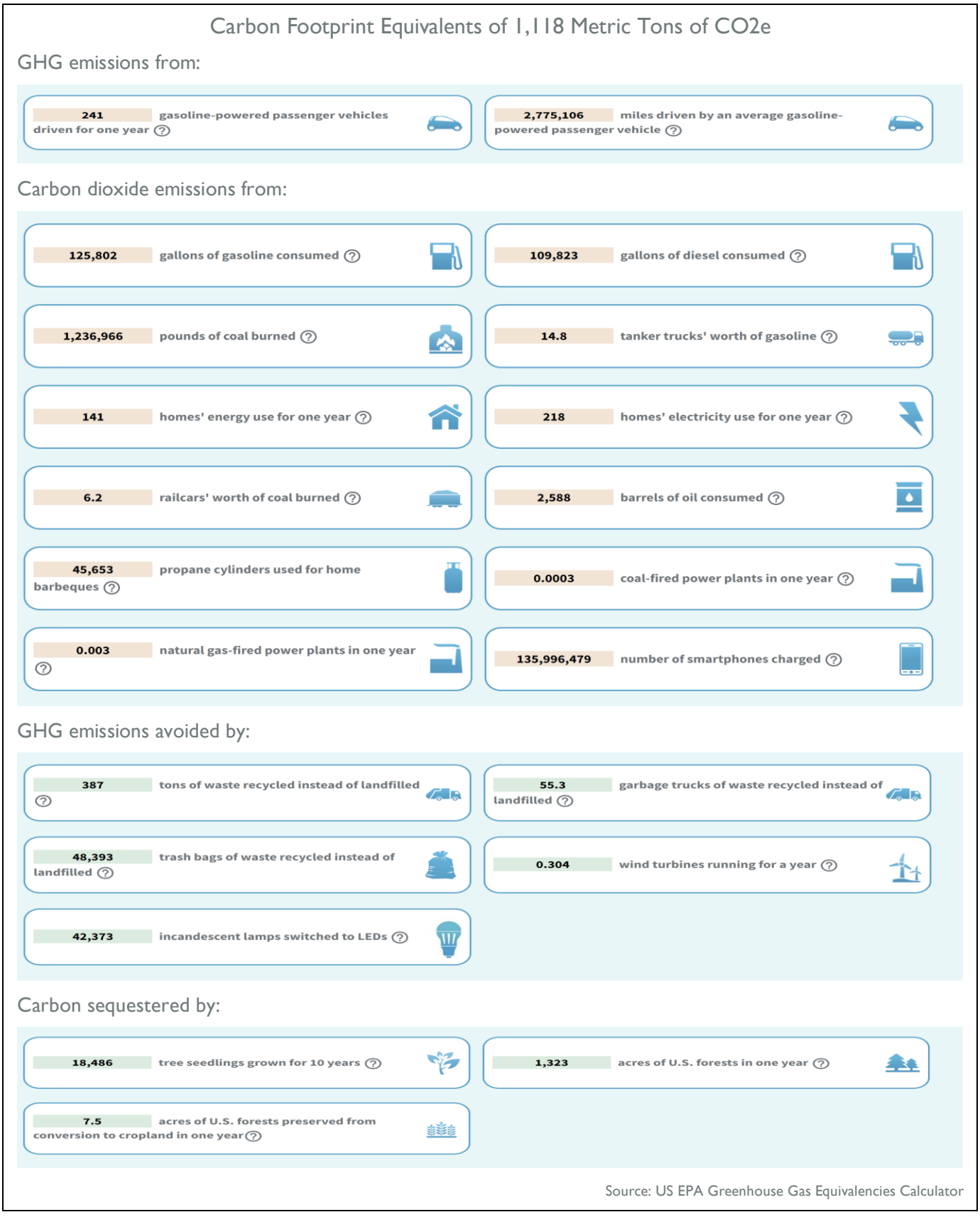
Figure 5. Carbon Footprint Equivalents for 2021



5 Statement of Accuracy

The Carbon Accounting Company states that, based on the information provided, MOCA's emissions as reported in this document are credible and defensible as an attempt to quantify the emissions sources and resultant emissions levels for the sources provided.

For more information regarding this report, please contact:

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