Document Name	2024 Forward Air Combined GHG Inventory, Updated Site Data
Reporting Year	January 1st, 2024 - December 31st, 2024
Reporting Boundary	Operational Control
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Forward Air 2024 GHG Inventory

Scope:	Global
Organizational Boundary Criteria:	Operational Control
Reporting Period:	January 1, 2024 - December 31, 2024

Document Purpose

The purpose of this document is to aid in the calculations of Forward Air's 2024 GHG Inventory. This document can be used as reference when understanding how current emissions have been calculated, what sources were used, and how to calculate emissions for future years. It also includes the raw data and calculations used for relevant calculations.

Calculation Methodology

Below you will find a high level explanation of how we calculated emissions associated with Scope 1, Scope 2, and all relevant Scope 3 categories. Additional detail can be found in the GHG Calculations tabs and the Orange (Assumptions & References) Tabs

Electricity Usage Estimations	Calculated using CBECS average office electricity usage based on U.S. Regions and Climate Zones (International), we calculated the average usage based on square footage to locations that were unable to provide direct consumption data.
Electricity Emissions Calculations	Calculated using eGrid and Green-e emission factors, we assigned electricity regions to each office based on location and used the widely approved and relevant emissions factors based on kWh of usage.
Natural Gas Usage Estimations	Calculated using CBECS average office natural gas usage based on U.S. Regions and Climate Zones (International), we calculated the average usage based on square footage to locations that were unable to provide direct consumption data.
Natural Gas Emissions Calculations	Calculated using a widely approved EPA emissions factor for the burning of natural gas fuel based on MMBTUs used
Diesel Emissions Calculations	Calculated using EPA emission factor based on assumed fuel usage for each asset for the burning of Diesel fuel based on Liters used
Propane Emissions Calculations	Calculated using EPA emission factor for the burning of Propane fuel based on Liters used
Refrigerant Emissions Calculations	Calculated using industry estimates for amount of refrigerant used and leaked in office buildings based on square footage. The GWP is used to convert refrigerant emissions to CO_2e
Category 1 - Purchased Goods & Services	Agendi applied a 80% threshold to the vendor spend list provided by Forward Air (excluding internals spends for tax departments, building management, FWRD-owned businesses, and unknown personnel). For vendors [within the top 80%] that reported to CDP or published sustainability report, emissions data was pulled from the vendor's CDP or Sustainability report to calculate an emissions factor. For vendors [within the top 80%] that didn't report to CDP, US EPA NAICs emission factors were assigned based on each vendor's respective industrial sectors. Additionally, for the other 20% of spend, the US EPA NAICs emission factors were used when available. When the NAICs code was not available, Agendi extrapolated an emissions per dollar spend value to calculate the remaining spend.
Category 2 - Capital Goods	Agendi used Forward Air's self-reported spend on Capital Expenditure in its 2024 10K to determine the percentage of supplier spend emissions associated with capital goods.
Category 3 - Fuel-and-energy related Activities	For electricity, Agendi assigned electricity regions to each office based on location and used the widely approved and relevant emissions factors based on kwh usage. For natural gas, diesel and propane, DESNZ emission factors were applied based on usage.
Category 4 - Independent Contractors	For all IC-owned trucks, calculations based on diesel usage in taxable gallons, with EPA emission factors applied based on usage. WTT emissions were estimated based on the 2023 average MPG for IC-owned trucks operated for Forward Air.
Category 5 - Waste	Calculated based on the average annual waste (in kg) generated per country and the average recycling rate. This average was used to estimate the emissions from waste per FTE.
Category 6 - Business Travel	For all unspecified/mixed business travel expenses, an average NAICs spend-based emission factor was used after adjusting for inflation.
Category 7 - Employee Commuting	Agendi leveraged US census data and other international commuting statistics to make assumptions on commuting transport mode and distance. Using office occupancy data provided by Forward Air, emissions were calculated based on estimated distances of employee commute for each year. EPA emission factors applied as appropriate.
Category 9 - Brokerage	Calculated based on the total metricton.km or TEU.km for each shipping mode and vehicle using the GLEC Framework and applying the relevant emission factors.

Recommendations for Future Improvement

Forward Air recognizes that there were some gaps in data for the 2024 GHG Inventory and as such the Scope 3 emissions may not be 100% accurate. The following items are recommended to improve future iterations of FWRD's GHG Inventory:

1. Category 1 & 2: Develop an internal process to differentiate capital goods from other purchased goods and services, and keep track of and remove internal spends (e.g. payroll, taxes, lease payments) as they are not relevant to this Category.
2. Category 1 & 2: Consider integrating NAICS code in supplier list to ensure consistency and validity year over year
3. Category 1 & 2: Engage with top suppliers to receive supplier-specific emissions intensities
4. Category 6: Begin to collect business travel data by mode of transport and mileage. When only spend-based sources are available, FWRD should itemize them by travel type.
5. Category 7: Administer a survey to FTEs asking their average commute distance, typical mode of transportation, and average days per week remote.

Known Inclusions and Exclusions

To ensure comprehensive reporting, the following items were included and excluded from this Inventory:

Inclusions:

1. All known electricity and fuel usage (with exceptions listed below)
2. All global facilities for full reporting period (for relevant facilities with lease dates overlapping the reporting period)
3. Fuel usage from company- and IC-owned vehicles
4. Scope 3 Categories 1-7, and 9
5. Refrigerant leakage estimations based on square footage of office

Exclusions:

1. Work from home emissions due to limited data and assumption of immateriality
2. Scope 3 Categories 8, and 10-15 as they were deemed not relevant

Glossary of Terms

CO2e	Carbon Dioxide equivalent. Used to have a standard method for reporting different relevant GHG emissions from multiple sources
CBECS	Commercial Buildings Energy Consumption Survey. It is a national sample survey that collects information on the stock of U.S. commercial buildings, including their energy-related building characteristics and energy usage data (consumption and expenditures).
EAC	Energy Attribute Certificate
EIA	Energy Information Administration
EPA	Environmental Protection Agency
GHGs	Greenhouse gases
GWP	Global Warming Potential. Used to convert other relevant GHGs to CO2 equivalents
Location Based Scope 2	Total Scope 2 emissions without taking into consideration any EACs or renewable energy production
Market Based Scope 2	Scope 2 emissions subtracting the amount of EACs or renewable energy production associated with the facilities under Lennar's operational control and the relevant Reporting Year
MT	Metric Tons
NAICS	Supply Chain Greenhouse Gas Emission Factors v1.2 by NAICS (North American Industry Classification System) developed by the EPA
RECs	Renewable Energy Certificates, a type of EAC
Relevant GHGs	carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and Sulphur hexafluoride (SF6)

Forward Air 2024 GHG Inventory

Summary

Scope: Global
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Reporting Periods Considered: January 1st 2024 - December 31st 2024

		2024 Total (MTCO2e)	Expedited	Intermodal	Omni	Percent of Total
Scope 1	Natural Gas	12,899	4,382	80	8,438	1%
	Actual Consumption	1,116	501	74	542	
	Estimated Consumption	11,783	3,881	6	7,896	
	Refrigerant Leakages	382	200	23	159	0%
	Propane	6,765	6,164	-	601	0%
	Private Fleet	47,712	19,047	13,021	15,644	3%
	Sub-Total Scope 1	**67,759**	**29,793**	**13,124**	**24,842**	**5%**
Scope 2	Electricity (Location-Based)	24,311	10,328	544	13,439	2%
	Actual Consumption	2,656	2,186	311	160	
	Estimated Consumption	21,655	8,143	233	13,280	
	Electricity (Market-Based)	26,093	11,268	598	14,227	2%
	Actual Consumption	2,890	2,387	344	160	
	Estimated Consumption	23,203	8,881	255	14,068	
	Sub-Total (Location-based) Scope 2	**24,311**	**10,328**	**544**	**13,439**	**2%**
	Sub-Total (Market-based) Scope 2	**26,093**	**11,268**	**598**	**14,227**	**2%**
Scope 3	Category 1: Purchased goods and services	52,332	22,932	4,788	24,612	4%
	Category 2: Capital goods	3,596	1,576	329	1,691	0%
	Category 3: Fuel- and energy- related activities	16,045	7,031	1,468	7,546	1%
	Category 4: Upstream Transportation & Distribution	373,811	373,589	-	-	25%
	IC owned vehicles	315,079	315,079	-	-	
	WTT	58,732	58,510	-	-	
	Category 5: Waste generated in operations	1,767	774	162	831	0%
	Category 6: Business travel	2,562	1,519	448	596	0%
	Category 7: Employee commuting	15,756	6,904	1,442	7,410	1%
	Category 9: Brokerage Data	926,268	-	-	926,268	62%
	Sub-Total Scope 3	**1,392,137**	**414,325**	**8,636**	**968,954**	**94%**
	Sub-Total Location-based (Scope 1 + Scope 2)	**92,070**	**40,121**	**13,668**	**38,281**	**6.20%**
	Sub-Total Market-based (Scope 1 + Scope 2)	**93,852**	**41,061**	**13,722**	**39,069**	**6.32%**
	Location-based Total (All Scopes)	**1,484,207**	**454,446**	**22,304**	**1,007,235**	
	Market-based Total (All Scopes)	**1,485,989**	**455,386**	**22,358**	**1,008,023**	

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Intensity Metric	2024 Value
Revenue	$ 2,474,262,000
FTE	8,751
SQFT	18,331,253

Emission Intensities (kgCO2e/Unit)

Scope	2024 Revenue Intensity	2024 FTE Intensity	2024 SQFT Intensity
Scope 1	0.0273856	7,743	3.70
Scope 2 (Market-Based)	0.0105458	2,982	1.42
Scope 1&2 (Market-Based)	**0.0379314**	**10,725**	**5.12**
Scope 3	0.5626472	159,083	75.94
Scope 1, 2 & 3 (Market-Based)	**0.6005787**	**169,808**	**81.06**

Forward Air 2024 GHG Inventory - Air Pollutants

Calculations

Vehicles

Total Emissions (Metric Tons)	**NOx**	32.30	MT
	SOx	0.16	MT
	PM2.5	0.30	MT
	PM10	1.74	MT
	CO	51.47	MT
	VOC	1.85	MT

FWRD-Owned Diesel

Line of Business	Total Diesel Used (Gallons)	Total Miles Driven	NOx Emissions (metric tonnes)	SOx Emissions (metric tonnes)	PM2.5 Emissions (metric tonnes)	PM10 Emissions (metric tonnes)	CO Emissions (metric tonnes)	VOC Emissions (metric tonnes)
IM	1,049,536.74	6,968,908.82	12.68	0.06	0.12	0.68	20.20	0.72
FAF	1,524,525.00	10,122,824.02	18.41	0.09	0.17	0.99	29.35	1.05
PUD	10,679.22	70,909.85	0.13	0.00	0.00	0.01	0.21	0.01
Omni	89,216.00	592,392.95	1.08	0.01	0.01	0.06	1.72	0.06
TOTAL	2,673,956.96	17,755,035.64	32.30	0.16	0.30	1.74	51.47	1.85

IC-Owned Diesel

Line of Business	Total Diesel Used (Gallons)	Total Miles Driven	NOx Emissions (metric tonnes)	SOx Emissions (metric tonnes)	PM2.5 Emissions (metric tonnes)	PM10 Emissions (metric tonnes)	CO Emissions (metric tonnes)	VOC Emissions (metric tonnes)
CST	3,549,903.23	23,571,306.30	42.88	0.21	0.40	2.31	68.33	2.45
FAF	21,749,698.00	144,417,681.15	262.70	1.30	2.46	14.15	418.67	15.02
PUD	96,030.00	637,637.82	1.16	0.01	0.01	0.06	1.85	0.07
TOTAL	25,395,631.23	168,626,625.27	306.73	1.52	2.87	16.53	488.85	17.54

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