FORM GEN. 160 (REV. 6-80)

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

DATE: March 24, 2025

TO: Energy and Environmental Committee
Honorable Adrin Nazarian, Chair
Honorable Katy Yaroslavsky, Vice Chair
Honorable Ysabel Jurado, Member
Honorable Nithya Raman, Member
Honorable Imelda Padilla, Member

FROM: Barbara Romero, Director and General Manager
LA Sanitation and Environment

SUBJECT: **LA SANITATION AND ENVIRONMENT – REPORT-BACK ON COUNCIL FILE 22-1402: ANNUAL COMMUNITY AND MUNICIPAL GREENHOUSE GAS INVENTORY REPORTS**

In response to **Council File 22-1402** (Krekorian: O'Farrel), LA Sanitation and the Environment is responding to the following Motion which states:

- Los Angeles Sanitation and Environment (LASAN) is to present to the City Council a Community and a Municipal Greenhouse Gas Emissions Inventory to inform progress toward meeting LA's climate change goals. The Municipal and Community Inventories should be developed and reported by sector, based upon established Local Government Operations Protocol and Global Protocol for Community-Scale Greenhouse Gas Inventories. Departments, including Proprietary Departments, must share requested activity data for the previous year with LASAN by October 31 of each successive year. The inventory should be finalized and presented to the Council by March 1st of each year and used to inform the subsequent year's budget process.

This report highlights two separately attached reports: the 2023 Community Greenhouse Gas (GHG) Inventory Report and 2023 Municipal GHG Inventory Report. These reports provide a comprehensive analysis and findings related to the City of Los Angeles's (City) GHG emissions from both a community-wide and a municipal perspective. This dual-focused approach emphasizes our commitment to a comprehensive understanding and reduction of our environmental footprint across the City.

Additionally, the Council has requested an update on vehicle electrification efforts. City fleets make vehicle purchases according to the Zero-Emission First procurement policy outlined in CF 21-0680, and, to date, the data on the vehicle quantities reported to LASAN's Climate Action team for the City's fleets include 2,862 alternative fuel vehicles as of 2023. In addition, there are 2,940 vehicles within the fleets that are hybrid, plug-in hybrid, or fully electric. This alignment with the City's strategic goals supports our commitment to reducing municipal emissions and advancing toward our net-zero emissions objectives.

BACKGROUND AND OBJECTIVES

In 2023, the City achieved a 33% reduction in community-wide emissions compared to the 1990 baseline, marking significant progress toward its climate targets. Despite these successes, community-wide efforts still face a 17% gap to meet the 2025 target of a 50% reduction from the 1990 baseline. For municipal operations, calculation methods were revised in 2023 to align with the Local Government Operations Protocol (LGOP). As a result, goal tracking has been impacted because the old method, which was also the basis for Green New Deal targets, is no longer the official emissions methodology. The new calculation method for municipal emissions, excluding purchased power generation, shows that the City is currently 41% below its 2008 baseline. Using the values from the prior method, the City would be ahead of schedule toward its 2025 goal, achieving an impressive 61% reduction from the 2008 baseline. The old method portrays a bigger picture of emissions reduction efforts by including the entire electricity consumption portfolio LADWP uses to power the City in compliance with the State's Renewable Portfolio Standard target and the City of LA's emission reduction goals. While the new LGOP-aligned value is a significant accomplishment, it falls slightly short of the trajectory needed to meet the 55% reduction target by 2025. These milestones highlight the City's strong commitment to environmental sustainability, while emphasizing the need for continued action to close the remaining gap and achieve its ambitious goals.

REPORT OVERVIEWS

A. 2023 Community GHG Inventory Report

In response to Council File 22-1402, LASAN is proud to present the Annual Community Greenhouse Gas (GHG) Emissions Inventory Report for 2023, showcasing the City's ongoing progress in reducing GHG emissions and advancing its ambitious climate goals. This progress underscores the City's unwavering commitment to the targets outlined in Los Angeles' Green New Deal, which aims to achieve carbon neutrality by 2050.

LASAN engages with other City Departments by reviewing their GHG data through the Climate Cabinet Working Group for GHG Accounting and Reporting Meetings, which are hosted by the Office of the Mayor. These meetings also provide a forum for discussion and collaboration amongst City Departments towards reaching GHG reductions goals.

While the City achieved a 33% reduction in community-wide emissions, it remains 17% below the 2025 target, emphasizing the need for proactive and innovative measures to close this gap.

<u>Key Findings</u>

- **Stationary Energy:**

  There has been a 44% reduction in stationary energy emissions since 1990, driven by decarbonization of the power grid and energy efficiencies in buildings. The data indicates a significant shift toward more sustainable energy practices, with a 52% reduction in carbon emission levels of the electricity in the City from 2014 to 2023, underscoring the ongoing efforts to supply 100% renewable energy by 2035/2045.

- **Transportation**:

  Since 1990, there has been an overall reduction of 12% in emissions, largely attributed to decreases in on-road transportation. Railway emissions have slightly increased, demonstrating a regional commitment to expanding public transportation. Continued efforts to reduce emissions include promoting the transition to electric off-road equipment, advancing sustainable aviation fuels, and expanding investments in clean transportation infrastructure.

- **Solid Waste:**

  Landfill disposal contributes over 95% of waste sector emissions, yet this sector's emissions account for just 6% of the total emissions from the City. In 2023, solid waste generation increased by 25% compared to the 1990 baseline, driven by rising consumer activity and shopping trends.

  Despite this increase, emissions remain below business-as-usual projections, highlighting the success of recycling and diversion programs. Organic waste, paper, and cardboard account for 90% of landfill emissions, underscoring the importance of composting, food rescue, and public education to drive further reductions.

- **Industrial Processes and Product Use:**

  The Industrial Processes and Product Use (IPPU) sector has experienced an increase in emissions, from approximately 1.79 million MT CO_2e in 2014 to over 2.06 million MT CO_2e in 2023. This is caused primarily due to the use of hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) as substitutes for ozone depleting substances that were still in use in 1990 and new processes associated with electronics and semiconductor production. While not included in BASIC emissions totals, the City is exploring policies that encourage the adoption of lower-emission alternatives.

B. 2023 Municipal GHG Inventory Report

LASAN, in strategic partnership with the Mayor's Office of Sustainability (MOS), proudly unveils the comprehensive 2023 Municipal Greenhouse Gas (GHG) Emissions Inventory Report. In this year's report we have resolved a concern regarding compliance to the Local Government Operation Protocol, specifically in the Power Generation sector. This resolution has resulted in a recalculation of prior values for total municipal emissions. This report illuminates the City's steadfast journey toward its ambitious goal of achieving carbon neutrality by 2045. The City achieved a 41% reduction in emissions compared to the 2008 baseline. While this is a significant accomplishment, it falls short of the trajectory needed to meet the 55% reduction target by 2025. Notably however, when including purchased energy, as of 2023, the City has achieved a 61% reduction in emissions compared to the 2008 baseline.This measure was the main focus when the Green New Deal goals were developed. This achievement reflects the City's unwavering dedication to environmental sustainability, while emphasizing the need for ongoing vigilance and innovative approaches to sustain and build upon this progress.

<u>Key Findings</u>

- **Power Generation:**

Despite a notable 45% reduction in emissions compared to the 2008 baseline, Los Angeles is actively reducing its GHG emissions, a significant part of which is due to the LA Department of Water and Power (LADWP) shifting to cleaner, renewable energy sources. This transition away from carbon-heavy fuels means electricity is now being generated with substantially fewer GHGs in the City.

- **Buildings and Facilities:**

  Emissions in this sector have decreased by 47% from the 2008 baseline, including a 5% reduction from the previous year. However, to reach the 55% reduction target by 2025, it is essential to intensify efforts in energy efficiency and accelerate the integration of renewable energy in municipal buildings, ensuring sustained progress toward the City's climate goals.

- **Water Conveyance and Reclamation:**

  These sectors have collectively achieved a 68% reduction in emissions compared to 2008, this decrease reflects ongoing improvements in energy efficiency, operational practices, and the decrease of carbon intensity on the power grid.

- **Transportation (Vehicle and Transit Fleets):**

  These sectors' combined emissions were reduced by 43% relative to the 2008 baseline. As the transit fleet moves towards electrification and the carbon intensity of electricity continues to decrease, a further reduction in emissions is anticipated.

- **Solid Waste Management**:

  The decrease in emissions, marked at 25% from the 2008 baseline, is primarily attributed to the methodology of a first-order decay model used in calculating solid waste emissions according to Local Government Operation Protocol (LGOP), rather than direct policy impacts. Last year, LASAN's Solid Resources Division led to an alternate estimate of emissions, focusing on measured data inputs, which differs from LGOP's methodologies, thereby providing another view of emission trends.

CONCLUSION

Los Angeles has made significant strides in reducing greenhouse gas emissions, reflecting a deep commitment to sustainability and climate leadership. The 2023 Municipal GHG Inventory Report conveys two values, one is a 61% reduction in emissions from 2008 levels when including purchased power, keeping the City on track to meet its ambitious Green New Deal goals. The other is a new metric that strictly aligns with LGOP, which excludes purchased power, resulting in a reduction of 41%. This reflects substantial progress, but also puts new calculations up against previous GND targets that were developed in a different context for the 55% reduction target by 2025. The 2023 Community GHG Inventory Report highlights a 33% reduction from the 1990 baseline, with a 17% gap remaining to achieve the 2025 goal of a 50% reduction. This demonstrates the urgency of accelerating GHG reduction efforts across all sectors.

To achieve these targets, the City of Los Angeles must scale up clean energy adoption, electrify transportation, and enhance waste management, ensuring equity and inclusivity remain central to

its approach. Guided by the Green New Deal, these achievements reflect the City's ability to decouple emissions from economic growth, while empowering the City to make sustainable choices. With innovation, collaboration, and unwavering dedication, Los Angeles continues to set a global benchmark for urban climate leadership, forging a resilient, carbon-neutral future for all.

Attachments
Attachment 1: 2023 Annual Community Greenhouse Gas Inventory Report
Attachment 2: 2023 Annual Municipal Greenhouse Gas Inventory Report

CITY OF LOS ANGELES

2023 COMMUNITY GREENHOUSE GAS INVENTORY REPORT

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Executive Summary

In 2023, Los Angeles achieved a significant milestone in its environmental efforts, with community-wide greenhouse gas (GHG) emissions falling 33% below the 1990 baseline, as depicted in Figure 1. The City is making progress towards its interim targets of a 50% reduction by 2025 and a 73% reduction by 2035. These efforts are part of a broader, ambitious plan encapsulated in Los Angeles' Green New Deal, which sets the ultimate goal of reaching carbon neutrality by 2050. This commitment reflects the City's proactive approach to combating climate change and fostering a sustainable future.

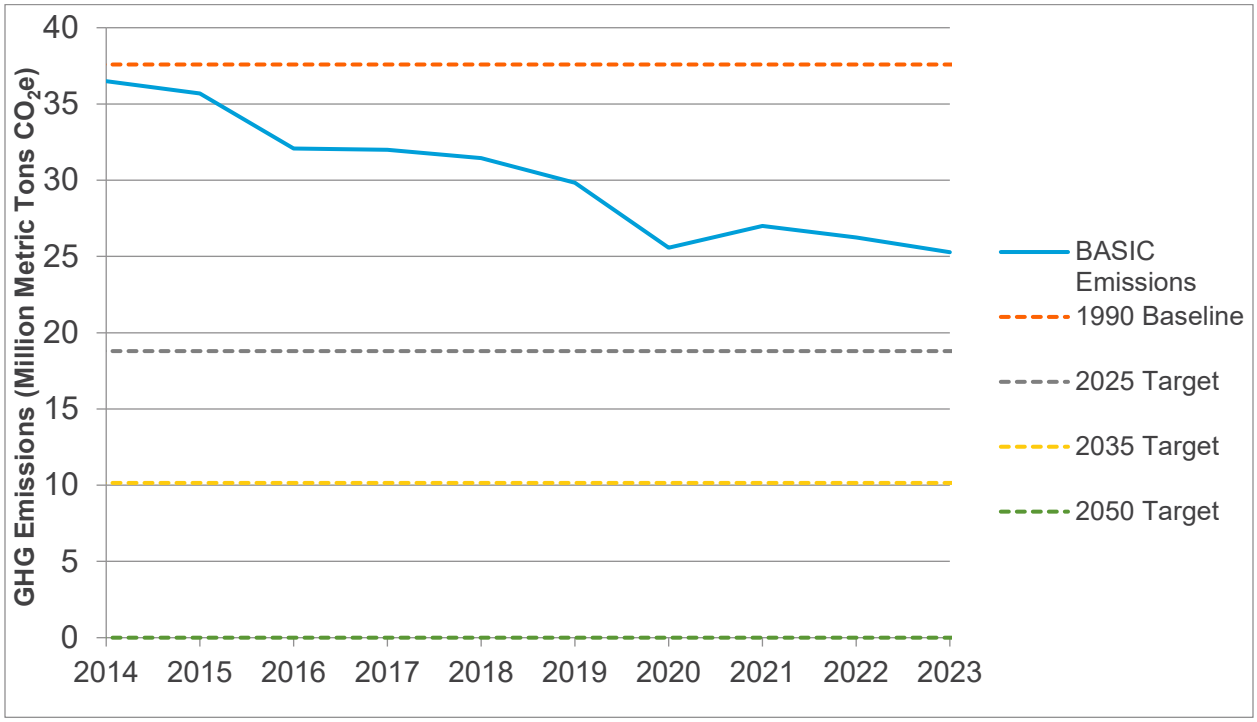

Figure 1. Emissions Progress Compared to Targets

In 2023, Los Angeles experienced a significant decline in community-wide greenhouse gas (GHG) emissions, spanning the stationary energy, transportation, and solid waste sectors. Total emissions for the year amounted to 25.2 million metric tons of carbon dioxide equivalent (MMT CO_2e), marking a reduction of about 1 million metric tons compared to the total in 2022. However, to achieve the target of reducing emissions to 50% below the 1990 baseline, it would require a reduction of 3.5 MMT annually in both 2024 and 2025.

Table 1. BASIC Emissions by Sector (Million Metric Tons CO_2e)

	1990	2018	2019	2020	2021	2022	2023	1990 vs 2023 Percent Change
Stationary Energy	26.0	19.0	17.7	16.8	16.8	15.6	14.6	**-44%**
Transportation	10.4	11.1	10.7	7.4	9.0	9.3	9.2	**-12%**
Waste	1.2	1.3	1.3	1.3	1.2	1.3	1.5	**25%**
Total Emissions	37.6	31.3	29.8	25.6	27.0	26.2	25.3	**-33%**

As detailed in Table 1, the stationary energy sector has seen a substantial decrease of 44% in emissions compared to the 1990 baseline, reducing to 14.6 MMT CO_2e in 2023. The transportation sector, which had 9.2 MMT CO_2e in 2023, has experienced a 12% decrease from 1990 levels. The waste sector showed an increase of 25% compared to 1990, settling at 1.5 MMT CO_2e but only accounts for 6% of the total BASIC emissions. Overall, these sectors contributed to a total decrease of 33% in GHG emissions compared to the 1990 baseline. This trend reflects the City's ongoing efforts to mitigate environmental impact and showcases a successful effort in reduction of emission levels while maintaining urban growth and development.

Figure 2 illustrates that despite an increase in gross domestic product (GDP) from 2022, the ratio of emissions per GDP unit has continued its downward trend. This ongoing reduction in emissions relative to economic output effectively demonstrates the decoupling of greenhouse gas (GHG) emissions from economic growth, indicating progress towards a more sustainable and less carbon-intensive economy.

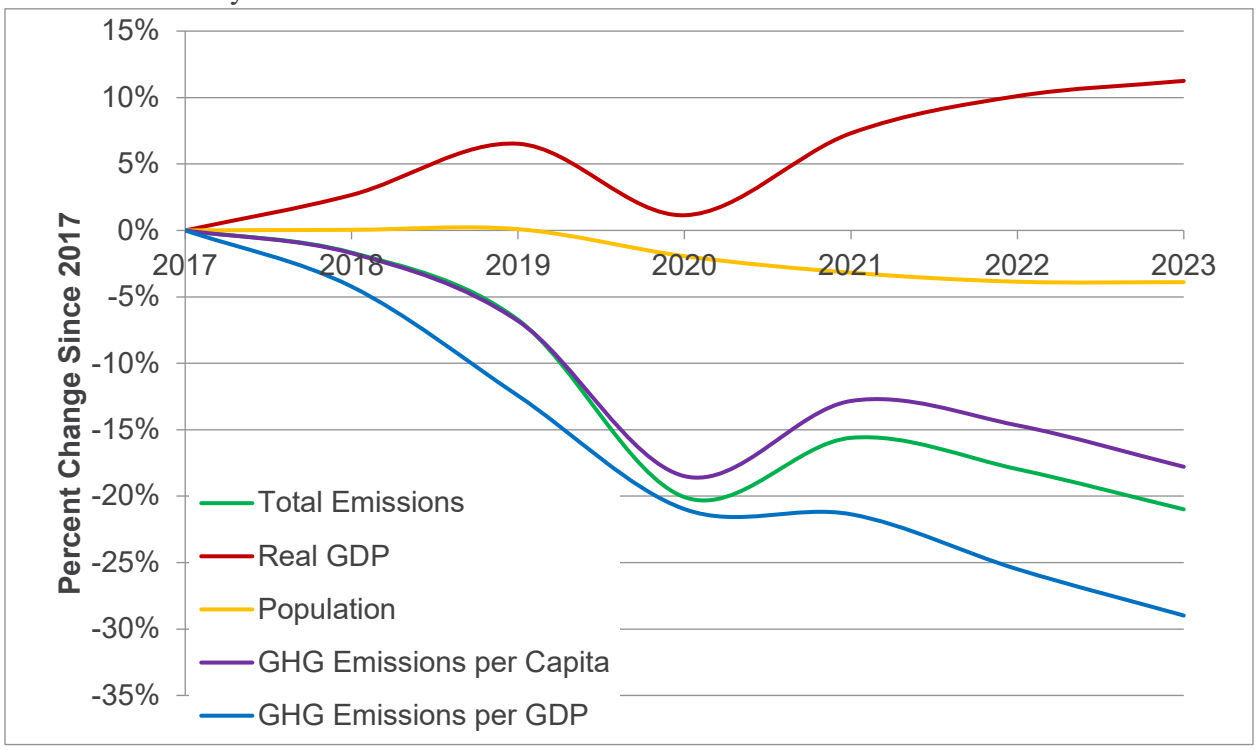

Figure 2. Emissions Trends and Metrics

1. Introduction

Climate change, a critical global challenge, requires decisive local actions. The City of Los Angeles is at the forefront of this battle, implementing robust measures to curb greenhouse gas (GHG) emissions and mitigate climate impacts. LA Sanitation and Environment (LASAN) plays a vital role in the City's climate strategy. Understanding the quantity, sources, and trends of Los Angeles' GHG emissions is crucial for effective climate action. This knowledge enables policymakers and stakeholders to take targeted and adaptive measures against climate change. LASAN's annual, detailed community GHG inventories are instrumental in gaining this insight and tracking the City's progress toward its ambitious climate objectives.

Since 2019, as originally requested by the Mayor's Office of Sustainability (MOS), LASAN has been responsible for preparing the City of Los Angeles' annual Community GHG Inventory. This task included enhancing the previously prepared inventories from a BASIC to a BASIC+ rating, a change necessitated by the availability of more comprehensive data sources. The BASIC+ inventory offers a deeper understanding of Los Angeles' emissions scenario because it includes industrial processes, product use, agriculture, forestry, and other land uses, along with Scope 3 emissions from stationary sources and transportation sectors.

To date, LASAN has compiled community-wide inventories for the years 2014-2023, in addition to the baseline year of 1990, as established in the City's Sustainable City pLAn. This report presents the 2023 Community GHG Inventory values alongside the updated values for the City's prior inventories, offering insights into the City's emission trends over time and using the 1990 figures as the benchmark for all reduction percentages.

2. Methodology

LASAN compiles the City of Los Angeles' Community Greenhouse Gas (GHG) Inventory adhering to the standards set by C40's Global Protocol for Community-Scale Greenhouse Gas Emissions (GPC), a globally recognized framework. This approach integrates two key methods: the scopes framework and the city-induced framework, accommodating emissions generated both inside and outside the City's borders. The inventory accounts for five GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs), each with a specific Global Warming Potential (GWP). GWP measures a gas's heat-trapping ability relative to CO_2. For a consistent assessment, emissions of these gases are converted to CO_2 equivalents (CO_2e) throughout this report.

Table 2. Greenhouse Gas Global Warming Potential Factors

Greenhouse Gas	Formula	GWP*
Carbon Dioxide	CO_2	1
Methane	CH_4	25
Nitrous Oxide	N_2O	298
Hydrofluorocarbons	HFCs	124-14,800
Perfluorocarbons	PFCs	7,390-12,200
*100-year time horizon.		

This inventory employs the Intergovernmental Panel on Climate Change's (IPCC) AR4 GWP values, aligning with the California Air Resources Board's (CARB) methodology for the statewide California Greenhouse Gas Emissions Inventory (see Table 2).

2.1 Scopes

Scope 1 emissions are from sources located within the City boundary (in-boundary activities). These can also be considered "territorial" emissions because they are all produced within the geographic boundary. Scope 2 emissions occur from the use of grid-supplied electricity, heat, steam, and/or cooling within the city boundary. Scope 3 emissions are from sources outside the city boundary because of actions occurring within the city boundary (out-of-boundary activities).

2.2 BASIC vs BASIC+

The GPC categorizes two levels, BASIC and BASIC+ (see Figure 3). BASIC encompasses Scopes 1 and 2 emissions from stationary energy and transportation, and Scopes 1 and 3 from waste. BASIC+ extends this to include industrial processes and product use (IPPU), and agriculture, forestry, and other land use (AFOLU), plus Scope 3 emissions from stationary energy and transportation sectors. Although BASIC+ provides a more comprehensive view of emissions, the City has limited direct control over some of these sectors. However, tracking BASIC+ emissions is essential for understanding the scope of emissions within the community and identifying indirect mitigation opportunities through policy incentives, regional partnerships, and state-level regulatory efforts. This report discusses all sectors under BASIC+, but tracks progress towards L.A.'s Green New Deal goals using BASIC emissions.

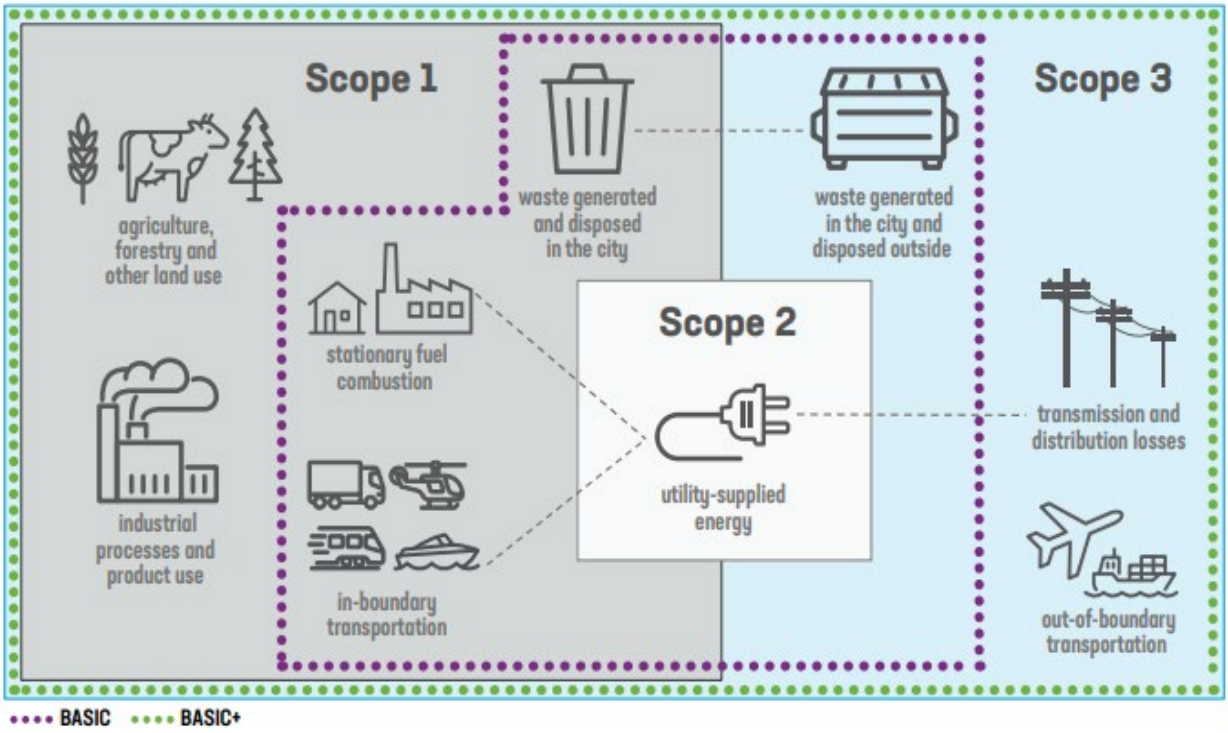

Figure 3. Sources Included in BASIC and BASIC+

2.3 Data Collection and Providers

LASAN's inventory preparation involves collaboration with multiple departments and agencies, ensuring a comprehensive data collection process. Table 3 summarizes these data contributors.

Table 3. Community GHG Inventory Data Providers

Data Provider	Data
City Department	
LASAN	Solid waste characterization; compost tonnage; biosolids; wastewater treatment
LADWP	Residential, commercial, institutional, and industrial electricity consumption; transmission and distribution losses; water services-related electricity consumption, power generation fuel consumption, EV charging electricity consumption
LAWA	Commercial jet fuel usage
POLA	Local harbor craft fuel usage
LA Animal Services Department	Livestock estimates
Regulatory Agency	
California Air Resources Board (CARB)	EMFAC2021 Model for vehicle fuel efficiency; off-road transportation emissions estimate; fuel estimate for vessel bunkering; industrial facilities involved with mineral, chemical, or metal production; ODS usage
South Coast Air Quality Management District (SCAQMD)	Industrial fuel consumption, landfill flaring
EPA	Refinery feed flaring; industrial facilities involved with mineral, chemical, or metal production
California Geologic Energy Management (CalGEM)	Oil and gas wells
FAA	Local aircraft fuel usage
CalRecycle	Solid waste disposal tonnage
CDFA	Fertilizer usage
Other	
Energy Information Administration (EIA)	Residential, commercial, and industrial wood and ethanol consumption
SoCal Gas	Residential, commercial, and industrial natural gas consumption
SCE	Utility's electricity emission factor
Google Environmental Insights Explorer	On-road VMTs
Amtrak	Annual trips estimate
Metrolink	Annual trips estimate
Burlington Northern Santa Fe (BNSF) Railway	Fuel usage
Union Pacific	Fuel usage
LA Metro	Rail propulsion electricity usage
International Council for Local Environmental Initiatives (ICLEI)	Land use change emissions estimate

3. Findings by Sector

The following sections present findings from the City's 2014-2023 Community GHG Inventories. Every year, LASAN continues to update the community GHG inventory to incorporate new procedures, as well as make improvements to data collection processes, methodologies, emissions factors, and quality assurance. Inventories from previous years are updated and revised to reflect these changes and to maintain a consistent time series following recommendations from the IPCC for developing GHG inventories. Therefore, the new inventory may report different emission levels than previous inventory reports.

As shown in Figure 4, the largest sector in Los Angeles' Community GHG Inventory (at the BASIC level) is the stationary energy sector, accounting for 58% of total emissions, followed by the transportation sector and the waste sector.

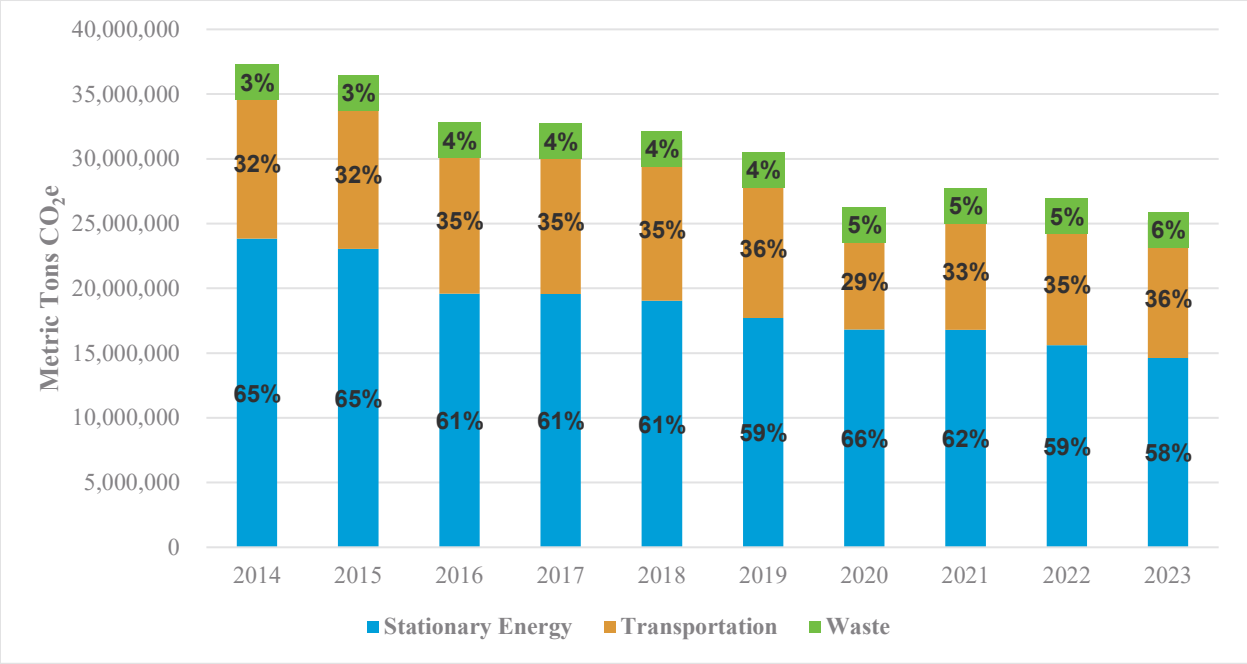

Figure 4. Basic Emissions by Sector

Between 2014 and 2023, Los Angeles saw significant changes in greenhouse gas (GHG) emissions in key sectors. In the stationary energy sector, emissions decreased from 23.8 million metric tons in 2014 to 14.6 million in 2023, a substantial reduction reflecting the City's energy efficiency and sustainable energy initiatives. The transportation sector, identified as the second-largest contributor to emissions, has shown a gradual decline compared to the 1990 baseline. Waste sector emissions, while a smaller portion of the total, increased slightly from the following year, accounting for about 6% of the City's emissions throughout this period. These trends demonstrate Los Angeles' effective strategies in reducing its environmental impact in major emission-generating sectors.

3.1 Stationary Energy

The stationary energy sector includes fuel combustion and fugitive emissions that occur while generating, delivering, and consuming useful forms of energy (such as electricity or heat). The five main subsectors are residential buildings, commercial and institutional buildings and facilities, manufacturing industries and construction, energy industries, and fugitive emissions from oil and natural gas systems.

Table 4. BASIC Stationary Energy Emissions by Subsector (MT CO_2e)

	Residential buildings	Commercial and institutional buildings and facilities	Manufacturing industries and construction	Energy industries	Fugitive emissions from oil and natural gas systems	Total Stationary Energy Emissions
1990	7,188,792	9,903,709	4,297,840	4,146,575	437,185	25,974,102
2014	6,585,035	8,460,163	3,995,230	4,587,057	214,610	23,842,094
2015	6,543,251	8,218,274	3,918,539	4,161,174	213,396	23,054,634
2016	5,394,410	6,226,515	3,446,961	4,294,149	216,983	19,579,017
2017	5,212,031	5,885,760	3,817,250	4,437,001	215,680	19,567,722
2018	5,099,756	5,902,502	3,324,850	4,494,205	216,611	19,037,923
2019	5,023,171	5,536,819	2,724,736	4,219,939	216,173	17,720,837
2020	5,039,695	4,700,410	2,660,925	4,201,503	211,973	16,814,505
2021	4,848,815	4,896,054	2,706,020	4,131,840	208,662	16,791,392
2022	4,641,986	4,856,690	1,840,049	4,061,659	207,544	15,607,928
2023	4,526,202	4,650,203	997,187	4,247,210	202,996	14,623,798

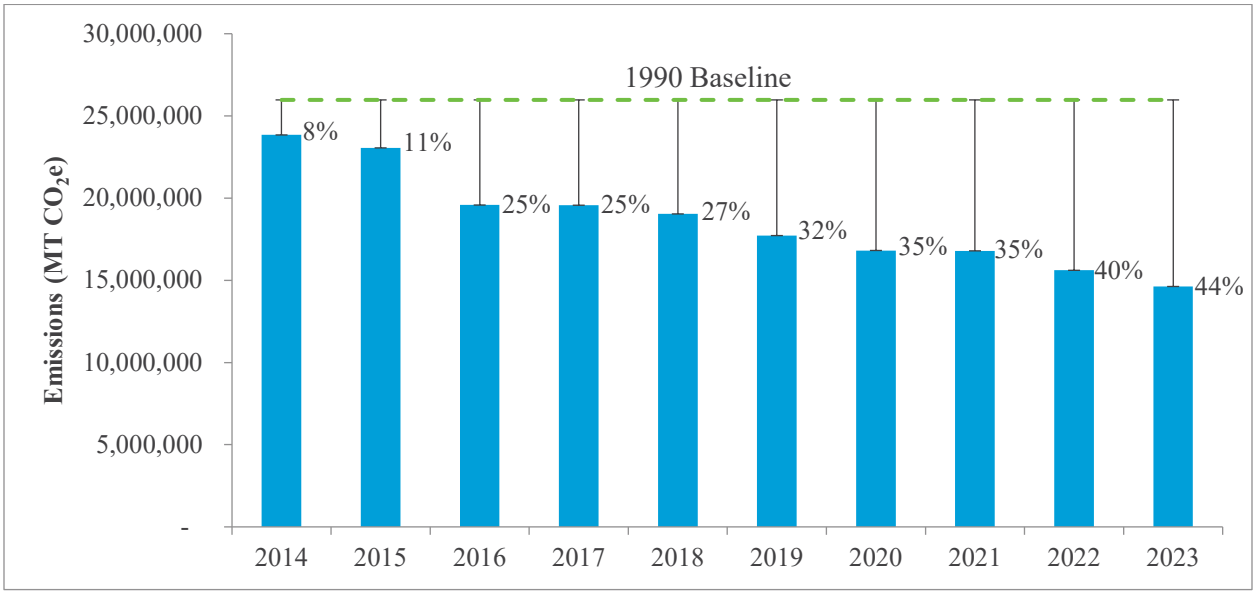

Figure 5. BASIC Stationary Energy Sector Emissions Reductions from Baseline

While Figure 5 shows a 4% decrease in emissions between 2022 and 2023, overall emissions in this sector have decreased by 44% since 1990 (Figure 5) with reductions primarily driven by decarbonization of the electricity grid.

Between 2014 and 2023, the ratio of MWh generated to the GHG emissions of the City's electricity has decreased by 52% (Figure 6).

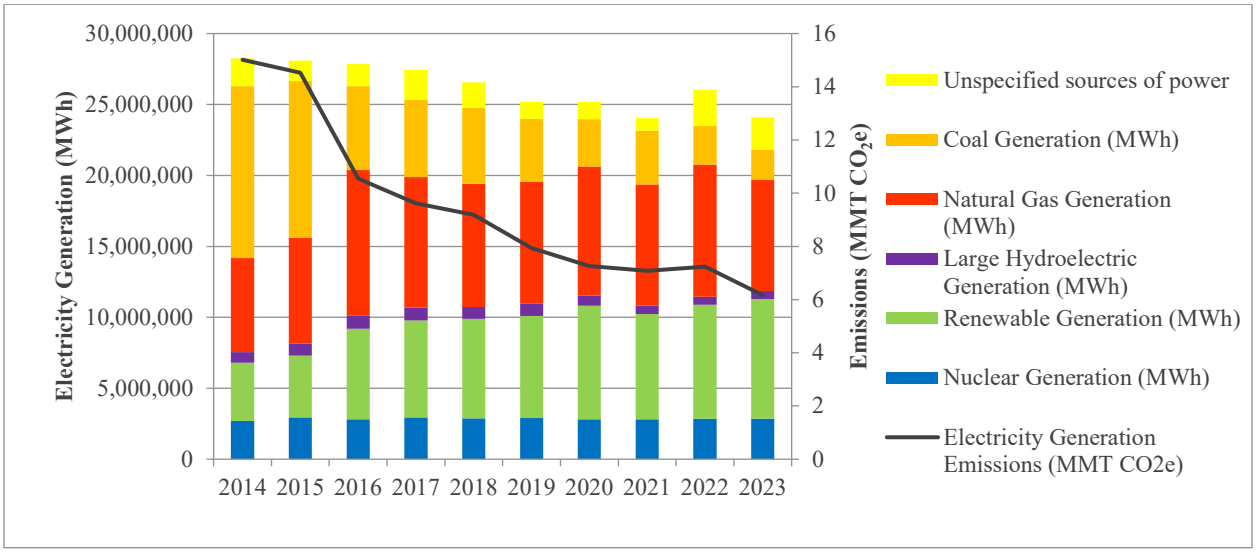

Figure 6. Electricity Generation Portfolio vs Emissions[1]

LADWP progresses towards supplying 100% renewable energy by 2045, as outlined in the LA100 plan and the Los Angeles Green New Deal. The City remains steadfast in advancing its ambitious clean energy targets, with the potential to achieve its objectives as early as 2035. While significant progress has been made, reaching these goals will require further action to decarbonize buildings, improve energy efficiency across all sectors, and reduce fuel combustion in industrial activities. Notably, the increased emissions observed between the BASIC level in Table 4 and the BASIC+ level in Table 5 are largely attributed to electricity transmission and distribution losses. Including both BASIC and BASIC+ metrics allows us to track emissions within the City's direct influence while also gaining a broader understanding of indirect impacts, such as transmission losses and industrial activities.

In 2023, the stationary energy sector experienced notable trends. Emissions from residential and commercial buildings continued their steady decline. However, emissions from energy industries saw a slight increase, highlighting ongoing challenges in decarbonizing this subsector, while fugitive emissions from oil and natural gas systems showed only a modest decrease.

It is important to emphasize that the reported data, particularly the dramatic decline in manufacturing and construction emissions, has not yet been verified with the South Coast Air Quality Management District (AQMD). A verification process is essential to confirm whether reductions stem from actual emissions reductions, shifts in industrial activity, or data limitations. This verification step is critical to ensure the accuracy of these findings and to identify the

[1] Power generation and emissions data provided by LADWP.

factors driving these trends, whether through policy interventions, technological advancements, or operational shifts.

Table 5. BASIC+ Stationary Energy Emissions by Subsector (MT CO_2e)

	Residential buildings	Commercial and institutional buildings and facilities	Manufacturing industries and construction	Energy industries	Fugitive emissions from oil and natural gas systems	Total Stationary Energy Emissions
1990	7,636,543	11,105,676	4,508,456	4,146,575	437,185	27,834,436
2014	7,199,130	9,659,486	4,132,757	4,587,057	214,610	25,793,040
2015	7,100,858	9,311,586	4,031,961	4,161,174	213,396	24,818,912
2016	5,774,009	6,971,781	3,522,091	4,294,149	216,983	20,779,013
2017	5,559,937	6,440,128	3,886,707	4,437,001	215,680	20,539,454
2018	5,428,269	6,564,167	3,379,549	4,494,205	216,611	20,082,800
2019	5,316,558	6,079,030	2,770,620	4,219,939	216,173	18,602,319
2020	5,334,948	4,851,102	2,701,097	4,201,503	211,973	17,300,622
2021	5,130,246	5,454,444	2,744,493	4,131,840	208,662	17,669,685
2022	4,913,838	5,483,767	1,879,337	4,061,659	207,544	16,546,145
2023	4,762,585	5,077,534	1,030,098	4,247,210	202,996	15,320,422

3.2 Transportation

The transportation sector includes GHG emissions from fuel combustion and electricity used for transportation activities. The sector covers five subsectors: on-road transportation, railways, waterborne navigation, aviation, and off-road transportation.

Table 6. BASIC Transportation Emissions by Subsector (MT CO_2e)

	On-road transportation	Railways	Waterborne navigation	Aviation	Off-road transportation	Total Transportation Emissions
1990	10,197,626	24,508	36,204	11,833	160,255	10,430,427
2014	11,128,431	98,421	55,892	17,336	239,507	11,539,586
2015	10,980,018	99,356	61,013	16,792	300,569	11,457,748
2016	10,827,904	82,100	58,348	14,906	276,693	11,259,952
2017	10,750,193	83,800	62,331	17,959	224,603	11,138,885
2018	10,605,673	85,269	66,092	16,828	321,258	11,095,119
2019	10,296,705	86,196	60,884	16,157	328,534	10,788,476
2020	6,961,453	76,900	60,734	14,068	327,406	7,440,562
2021	8,486,904	68,835	53,521	15,565	336,063	8,960,887
2022	8,836,599	66,992	50,811	15,116	342,143	9,311,662
2023	8,688,602	67,635	51,808	15,007	349,552	9,172,605

Overall, transportation sector emissions have decreased by 12% since 1990 (Figure 7), primarily driven by reductions in on-road transportation emissions. The data in Table 6, spanning 2014 to 2023, highlights key trends. Railways have seen a slight increase in emissions between 2022 and 2023, reflecting the City's mission to expand public transportation, while waterborne navigation emissions experienced a minor rise from 2022. Harbor craft emissions for particulate matter (PM) and nitrogen oxides (NO_x) decreased in 2023 compared to 2022, primarily due to the adoption of renewable diesel. However, increases in sulfur oxides (SO_x), hydrocarbons (HC), and CO_2e emissions were linked to higher activity among other vessel types, offsetting gains from reduced tugboat and fishing vessel emissions.[2] The Port of Los Angeles continues to partner with tenants and technology providers to develop and implement zero-emission technologies for new and retrofitted harbor craft vessels to reduce emissions associated with waterborne navigation.

Off-road transportation emissions, which originate from equipment and vehicles operating off public roads—such as construction machinery, agricultural equipment, and recreational vehicles—continue to rise in Los Angeles. Addressing these emissions requires targeted strategies, including transitioning to electric off-road equipment, decarbonizing the grid, and implementing policies that promote cleaner technologies in these sectors. Complementary efforts

[2] Port of Los Angeles. *2023 Air Emissions Inventory*. 2023, https://kentico.portoflosangeles.org/getmedia/3fad9979-f2cb-4b3d-bf82-687434cbd628/2023-Air-Emissions-Inventory.

to reduce on-road vehicle miles traveled (VMTs) through investments in public transportation and walkable, people-centric infrastructure remain critical to achieving broader emission reduction goals.

The BASIC+ transportation emissions, shown in Table 7, reflect the inclusion of harbor and airport tenant commercial cargo ship and aircraft fuel usage, leading to higher totals. This broader scope ensures a comprehensive understanding of transportation emissions, balancing the focus on areas the City can influence directly while addressing the global impact of indirect sources. Despite this, the City of Los Angeles is making significant progress in reducing overall transportation emissions, with a 25% decrease since 1990. Efforts to address emissions from aviation and waterborne navigation, such as Los Angeles World Airports' (LAWA) promotion of sustainable aviation fuels and the Port of Los Angeles' (POLA) shore-side electricity program, highlight the City's commitment to tackling emissions even in sectors outside its direct control. These initiatives, combined with ongoing investments in clean transportation and infrastructure, demonstrate the City's dedication to achieving its climate goals.

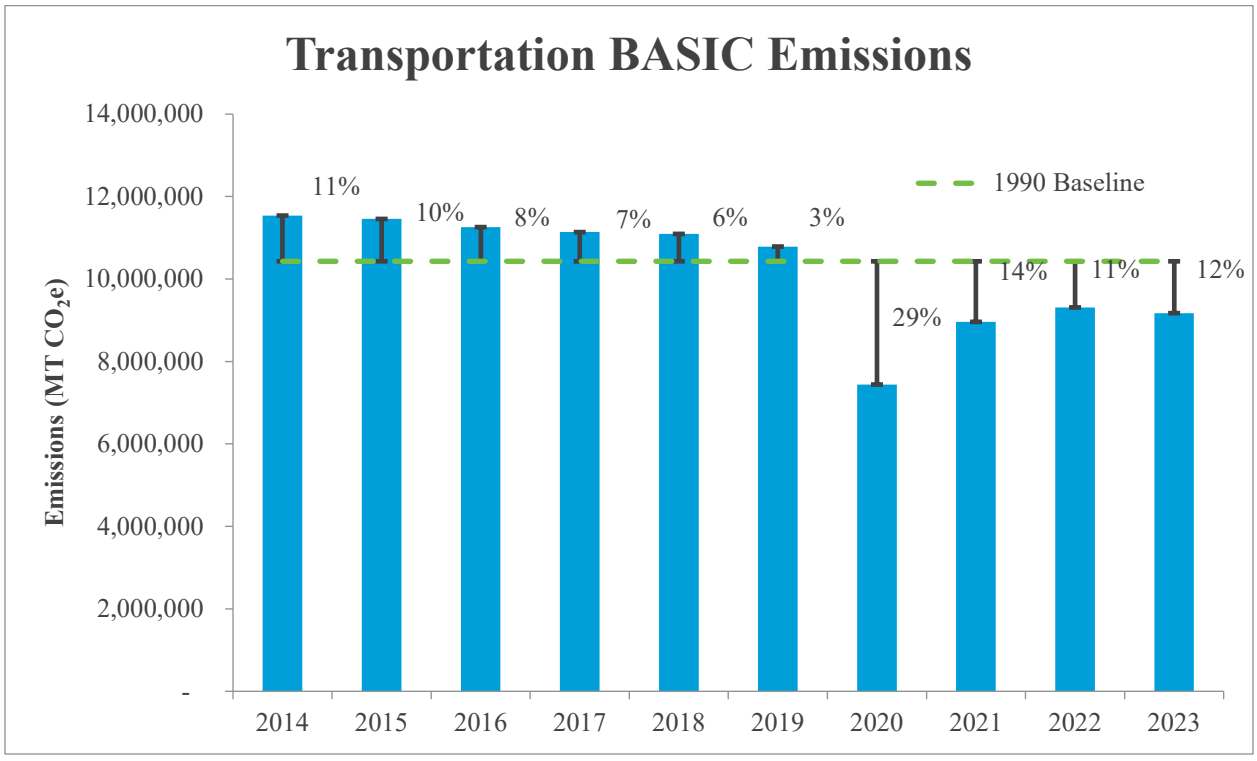

Figure 7. BASIC Transportation Sector Emissions Reductions from Baseline

Table 7. BASIC+ Transportation Emissions by Subsector (MT CO_2e)

	On-road transportation	Railways	Waterborne navigation	Aviation	Off-road transportation	Total Transportation Emissions
1990	10,197,626	74,287	8,786,351	14,431,582	160,255	33,650,100
2014	11,130,442	205,088	2,866,564	15,837,678	162,034	30,201,806
2015	10,983,242	201,855	3,494,079	17,009,219	220,511	31,908,906
2016	10,834,837	181,741	4,479,269	18,323,514	276,693	34,096,055
2017	10,757,820	188,836	3,043,868	19,147,217	224,603	33,362,344
2018	10,615,057	197,677	2,311,149	19,559,534	321,258	33,004,676
2019	10,306,160	212,229	3,044,750	19,401,839	328,534	33,293,511
2020	6,969,168	187,003	1,898,903	11,451,145	327,406	20,833,625
2021	8,496,451	175,178	2,230,736	13,987,150	336,063	25,225,578
2022	8,847,752	175,258	2,082,060	15,219,042	342,143	26,666,254
2023	8,701,565	163,387	2,546,545	13,328,490	349,552	25,089,538

3.3 Waste

The waste sector is responsible for emissions stemming from the disposal and treatment of both solid waste and wastewater, with processes such as decomposition and incineration as primary contributors.

Table 8. Waste Emissions by Subsector (MT CO_2e)[3]

	Solid waste generated in the city	Biological waste generated in the city	Incinerated and burned waste generated in the city	Wastewater generated in the city	Total Waste Emissions
1990	1,120,499	3,642	11,183	47,775	1,183,101
2014	1,046,584	5,798	14,670	44,841	1,111,893
2015	1,111,432	6,871	13,314	46,839	1,178,456
2016	1,157,181	11,692	15,581	44,471	1,228,924
2017	1,228,286	5,189	3,890	49,616	1,286,980
2018	1,262,352	9,454	2,596	51,317	1,325,719
2019	1,267,111	8,363	2,262	53,344	1,331,079
2020	1,256,478	6,650	3,451	49,154	1,315,733
2021	1,186,929	8,213	3,158	48,453	1,246,753
2022	1,250,175	6,672	19,202	49,859	1,325,907
2023	1,413,797	5,626	11,896	49,873	1,481,192

Landfill disposal, primarily from solid waste, remains the largest contributor to emissions within the waste sector, accounting for over 95% of the total (see Table 8). In 2023, solid waste generation in the city increased by 25% compared to 1990, reflecting a rise in consumer activity and shopping trends among Angelenos. However, waste emissions require additional context to avoid misinterpretation. While waste emissions in 2023 may be 25% higher than the 1990 baseline, they represent only 6% of the City's total BASIC emissions. This underscores the relatively minor contribution of waste compared to other sectors, such as stationary energy and transportation, which together account for 94% of emissions.

It is also important to note that population is greater than it was in 1990 and consumption has grown significantly since 1990. Despite this, current waste emissions remain below what would have occurred under a business-as-usual scenario, highlighting the success of the City's recycling and diversion programs. Framing waste emissions within the context of the City's total reduction goals is essential to prevent an overemphasis on the 25% increase, which could unintentionally suggest a failure in waste management. Instead, this sector offers significant potential for further reductions through robust public education campaigns, behavioral changes, and continued community engagement.

[3] For the waste sector, BASIC and BASIC+ emissions are the same (see Figure 3).

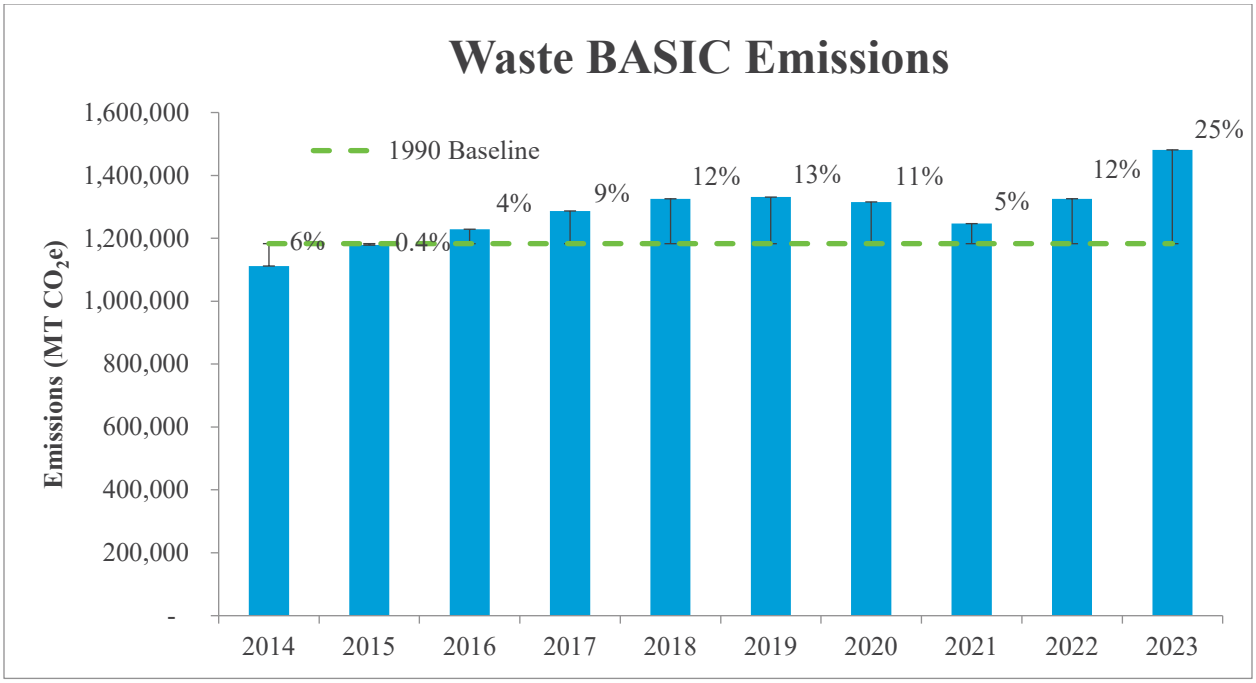

Figure 8. BASIC Waste Sector Emissions Reductions from Baseline

Figure 9 shows how waste composition significantly affects emissions levels; the different materials have varying organic content that decomposes at different rates. Paper and cardboard make up 23% of the City's waste by volume, yet they contribute to 53% of emissions from landfilled waste. Organic waste, while constituting 26% of the waste stream, accounts for 37% of emissions. These two categories alone represent 90% of emissions from landfilled waste, underscoring the importance of targeted waste reduction in these areas.[4]

[4] Waste characterization obtained from *Sunshine Canyon Landfill Comprehensive Waste Characterization Study,* May 2016.

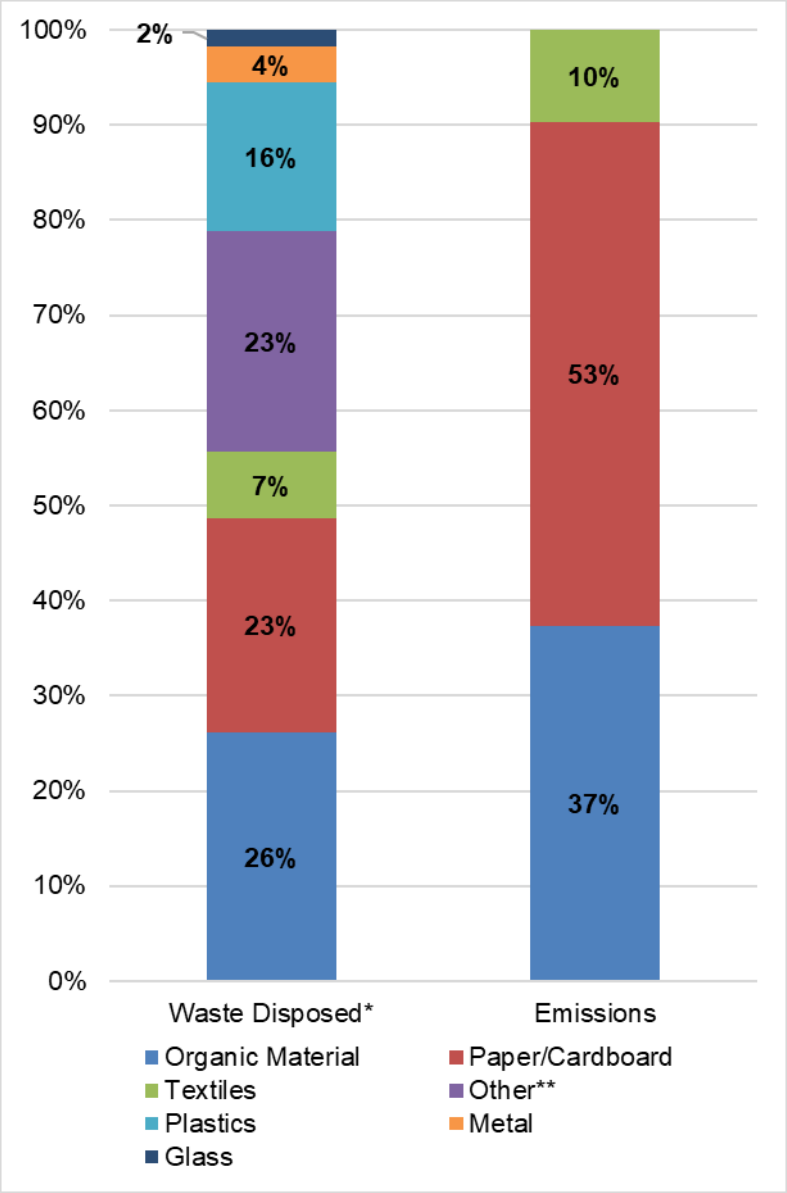

Figure 9. Landfilled Waste Characterization vs. Emissions

*Percentages may not total to 100 percent due to rounding.
**Other includes rubber and leather, electronics, gypsum board, inert material, household hazardous waste, special waste, and mixed residue.

3.4 Agriculture, Forestry, and Other Land Use

The AFOLU sector is characterized by GHG emissions from several sources, including land-use changes, enteric fermentation in livestock, and agricultural nutrient management. In the City's emissions framework, these emissions are detailed only in the BASIC+ inventory, not the BASIC total. While carbon sequestration data is captured for reference, it isn't factored into the net emissions for BASIC+.

Table 9. AFOLU Emissions by Subsector (MT CO_2e)

	Livestock	Land		Aggregate Emission Sources		
	Sources	Sources	Sinks	Sources	Sinks	Total (sources)
1990	4,418	13,981	(112,441)	9,144	(48,556)	27,543
2014	4,418	12,165	(112,706)	5,616	(79,865)	22,198
2015	4,418	12,165	(112,736)	5,689	(80,407)	22,271
2016	4,418	12,165	(112,541)	5,506	(63,510)	22,089
2017	4,418	11,581	(112,797)	6,018	(34,888)	22,016
2018	4,418	11,492	(112,827)	7,517	(45,678)	23,427
2019	4,418	11,344	(112,523)	32,810	(72,411)	48,572
2020	4,418	11,286	(112,729)	8,681	(76,818)	24,384
2021	4,275	11,224	(112,609)	12,144	(66,524)	27,643
2022	4,275	11,115	(112,716)	28,211	(58,158)	43,601
2023	4,275	16,546	(108,509)	3,684	(62,130)	24,505

The primary emissions source in this sector is synthetic fertilizer use, with a notable increase in 2019 and 2022 emissions driven by greater application of synthetic fertilizers (Figure 10). Preliminary data for 2023 suggests a significant decrease in overall emissions, which may be partially attributed to the expansion of the City's organic waste recycling and healthy soils programs. These initiatives have likely contributed to increased compost production and application, potentially reducing reliance on synthetic fertilizers and promoting soil carbon sequestration. Beyond reducing emissions, composting offers co-benefits such as water conservation, improved soil microbial health, erosion control, and air quality improvements. This progress highlights the critical role of sustainable waste management practices in mitigating climate impacts and fostering healthier ecosystems.

In 2023, while emissions from land sources increased—potentially due to shifts in land use or reduced sequestration capacity—the City's efforts to scale composting and soil health improvements underscore the potential for targeted programs to drive meaningful reductions in greenhouse gas emissions. It is also important to note that aggregate emission source values differ due to updates to emission factors in the 2019 IPCC refinement.

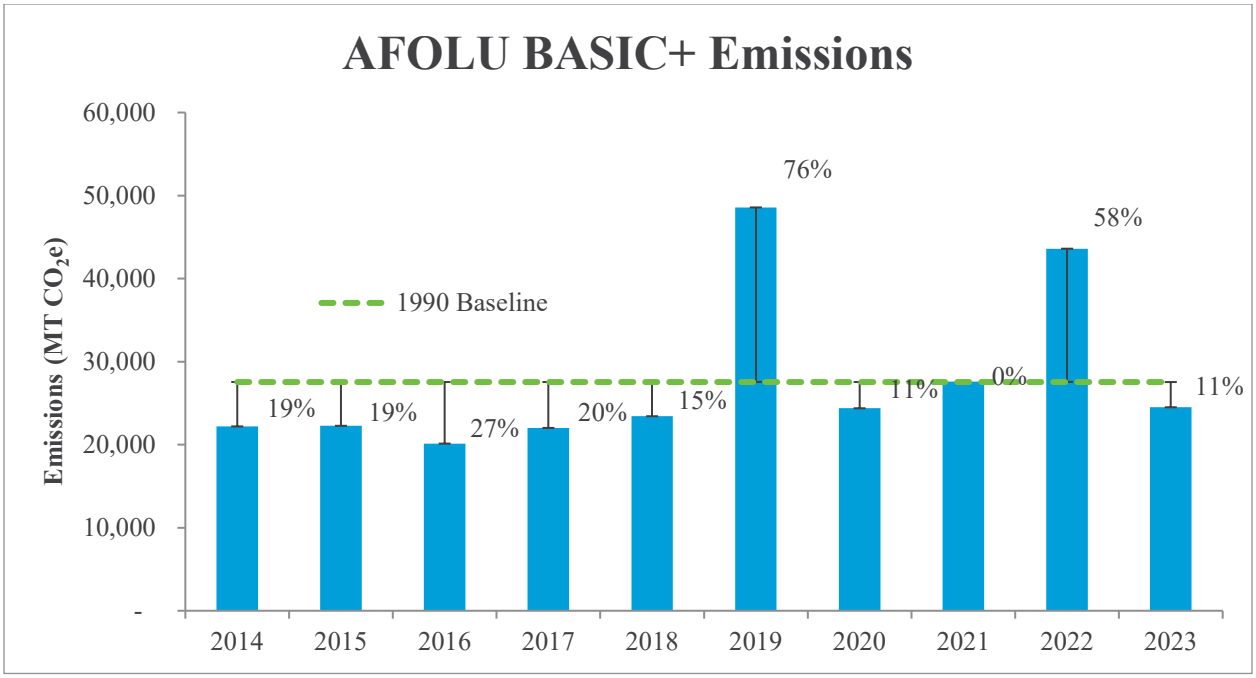

Figure 10. AFOLU Sector Emissions Reductions from Baseline

3.5 Industrial Processes and Product Use

The IPPU sector captures emissions from non-energy related industrial processes[5] and the use of products not related to energy generation. This includes emissions from substitutes for ozone-depleting substances (ODS), such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). Both of these ODS substitutes replaced ozone-depleting Chlorofluorocarbons (CFCs) that were in use in 1990, and are now widely used in refrigeration, air conditioning, foam production, and fire suppression systems instead of CFCs. These emissions are part of the BASIC+ standard and thus are not included in the BASIC emissions tally.

Table 10. IPPU Emissions by Subsector (MT CO_2e)

	Industrial Processes	Product Use	Total IPPU Emissions
1990	-	9,753	9,753
2014	-	1,790,652	1,790,652
2015	-	1,879,750	1,879,750
2016	-	1,947,186	1,947,186
2017	-	2,009,201	2,009,201
2018	-	2,050,501	2,050,501
2019	-	2,067,530	2,067,530
2020	-	2,071,863	2,071,863
2021	-	2,061,848	2,061,848
2022	-	2,058,893	2,058,893
2023	-	2,086,144	2,086,144

A substantial portion of the IPPU emissions stems from the use of HFCs and PFCs, which are potent greenhouse gases. To mitigate this, the City is exploring policy options to accelerate the phase-out of these chemicals in line with California Air Resources Board (CARB) regulations, while promoting alternative cooling technologies such as natural refrigerants and passive cooling strategies. CARB is proactive in this area, developing regulations that encourage the use of substances with a lower climate change potential.

Given the vast technological and industrial changes since, the baseline year for IPPU emissions provides limited insights for comparison. The sector has evolved, with new processes and technologies emerging that were not present three decades ago, which now contribute to GHG emissions. For instance, emissions from IPPU in 1990 were recorded at a mere 10,000 MT CO_2e, contrasting sharply with the over 2 million MT CO_2e reported in recent years.

Thus, while historical data offer context, the focus must be on current and future actions. Efforts to find alternatives to substitutes for ozone-depleting substances are paramount. This includes

[5] Industrial process facilities are in the mineral, chemical, and metal production industries. No industrial facilities within Los Angeles meet the thresholds for reporting to statewide and national regulatory agencies, including CARB and the US EPA. As a result, industrial process emissions are not in this inventory. This does not necessarily mean there are no industrial process emissions, only that there are no facilities that meet the reporting thresholds.

identifying new chemicals or methods that serve similar functions or devising innovative strategies to reduce the need for refrigerants and cooling agents altogether.

The IPPU sector's evolution underscores the necessity for a dynamic and responsive approach to environmental management, one that acknowledges past practices while aggressively pursuing current opportunities for emission reductions.

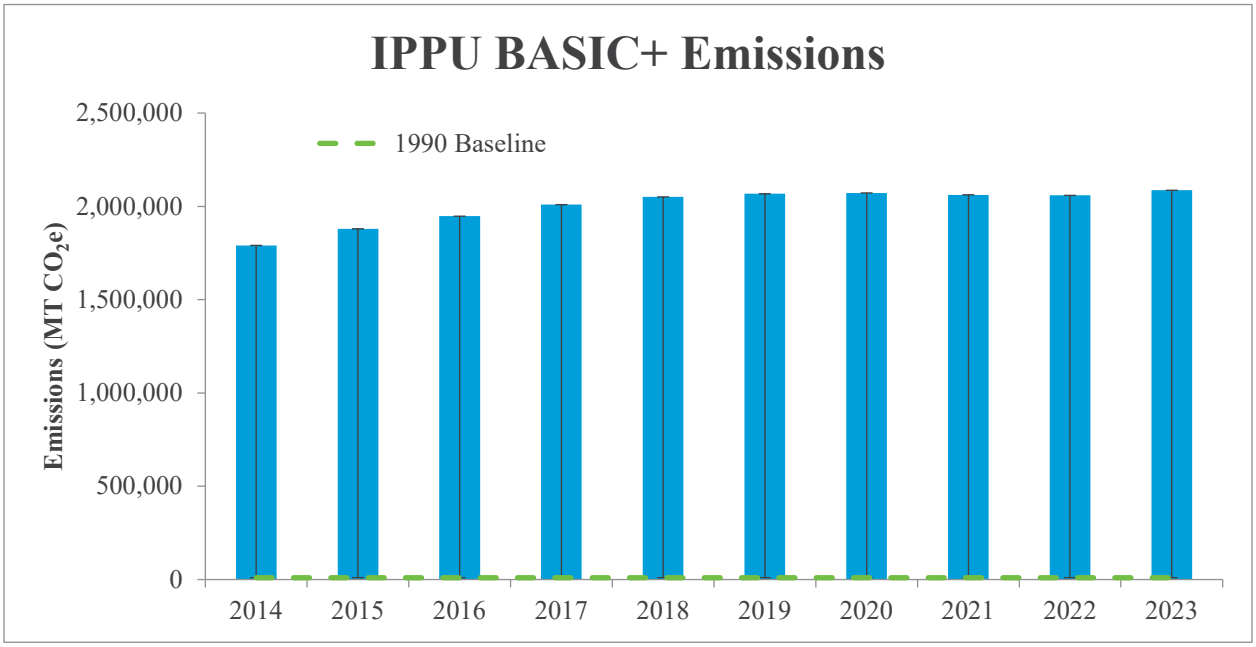

Figure 11. IPPU Sector Emissions Compared to Baseline

4. Conclusion

Los Angeles' unwavering determination and strategic action in addressing climate change are exemplified by the substantial greenhouse gas (GHG) emissions reductions recorded in the 2023 Community GHG Inventory. With emissions now 33% below the 1990 baseline, the City continues to demonstrate its commitment to a sustainable future while setting a global benchmark for urban climate leadership.

To meet the ambitious target of a 50% reduction by 2025, Los Angeles must achieve an additional 17% reduction in emissions over the next two years. This pressing challenge underscores the need for accelerated efforts across all sectors, including scaling clean energy adoption, electrifying transportation systems, enhancing waste reduction and recycling programs, and addressing fugitive emissions. Achieving this goal will require innovation, collaboration, and an unwavering focus on equity and sustainability.

Notable progress has already been made. The stationary energy sector achieved an impressive 44% reduction in emissions since 1990, driven by the decarbonization of the electricity grid and advances in energy efficiency. The transportation sector saw a 12% reduction compared to 1990 levels, bolstered by ongoing investments in electrification and sustainable transit initiatives. While emissions from the waste sector increased, targeted programs to enhance recycling, divert waste from landfills, and engage the public are poised to address these challenges.

This report further highlights the City's success in decoupling emissions from economic growth, with emissions per unit of GDP continuing to decline. This progress illustrates that environmental sustainability and economic prosperity are not only compatible, but mutually reinforcing, as Los Angeles advances toward a greener, more resilient economy.

Looking ahead, the City will continue to innovate and implement bold climate strategies, guided by the Green New Deal's vision for carbon neutrality by 2050. LASAN, in partnership with the Mayor’s Office of Energy and Sustainability, remains steadfast in refining the GHG inventory and developing policies that enable these ambitious goals. Los Angeles' journey toward sustainability is a testament to what can be accomplished through visionary leadership and collective action, serving as a beacon of environmental stewardship for cities worldwide.

5. Preparers

LA Sanitation & Environment (LASAN), recognized as a national leader in environmental services and programs, is a critical partner in the City's climate response and in advancing the path towards the City's climate goals. LASAN is committed to proactively addressing climate change and supporting climate action in line with our mission to protect public health and the environment.

Building on nearly a decade of experience, LASAN's Climate Action Program supports the City's path towards carbon neutrality as outlined by the Sustainable City pLAn. LASAN collaborates with City departments, policymakers, and outside agencies on climate-related reports and activities.

For more information about the Climate Action Program, please contact us at san.climateaction@lacity.org or (213) 485-3640 or visit us at www.lacitysan.org/climateaction.

Last updated: January 2025

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2023 MUNICIPAL GREENHOUSE GAS INVENTORY REPORT

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Executive Summary

This report outlines the City of Los Angeles' efforts in managing its municipal greenhouse gas (GHG) emissions, detailing the municipal GHG inventory from the baseline year of 2008 and from 2017 through 2023. This inventory serves as a crucial tool in quantifying the emissions generated from city operations, offering insights into the effectiveness of the City's environmental policies and initiatives in reducing GHG emissions.

In a landmark achievement in 2019, LA Sanitation & Environment (LASAN) unveiled the inaugural Municipal Greenhouse Gas Emissions Inventory Report. This report revealed a significant milestone: Los Angeles had surpassed its target, reducing municipal GHG emissions to 35% below the 2008 levels by 2025 – a commendable achievement attained eight years ahead of the scheduled target. In the same breath of progress, the City embraced the Green New Deal, setting forth ambitious, yet crucial, updated targets for municipal emissions reduction:

- A 55% reduction by 2025
- A 65% reduction by 2035
- Achieving carbon neutrality by 2045

These goals were developed based on how the Municipal Inventory was performed at that time and the values and trends therein. However as of 2023, changes have been made to the values reported for municipal emissions, which caused a recalculation of all old values (See 3.1 Power Generation for more details on methodological changes). This report includes information presenting both sets of numbers and graphics to provide as much information as possible since it is intended to serve as a tool for use by the City.

As illustrated in Figure 1, using the updated methodology and totals that strictly follow the Local Government Operations Protocol, emissions have declined significantly over the years. However, recent trends indicate a slower pace of progress. As of 2023, with the changed methodology, the City has achieved a 41% reduction in emissions compared to the 2008 baseline, a substantial achievement, but slightly below the trajectory needed to meet the 55% reduction target by 2025. This trend signals a need for recalibrated and intensified efforts to ensure alignment with the City's environmental commitments.

In comparison, Figure 2, using the prior totals (including what 2023 would be using those numbers), shows that the City would now be ahead of its 2025 municipal emissions target with a 61% reduction from the baseline calculated with that data. This shows that when looking at City department efforts beyond what is the common standard, the City's efforts are making a big impact. These values reflect the context of the time when the GND goals were established and the municipal inventory's role as a tool to show the big picture of the City's emissions. These values

The City stands at a pivotal juncture. To continue on this path of environmental stewardship and meet its ambitious goals, Los Angeles must adopt and implement additional, sustainable practices. This commitment will not only steer the City toward its 2025 targets, but also pave the way for a sustainable and environmentally responsible future.

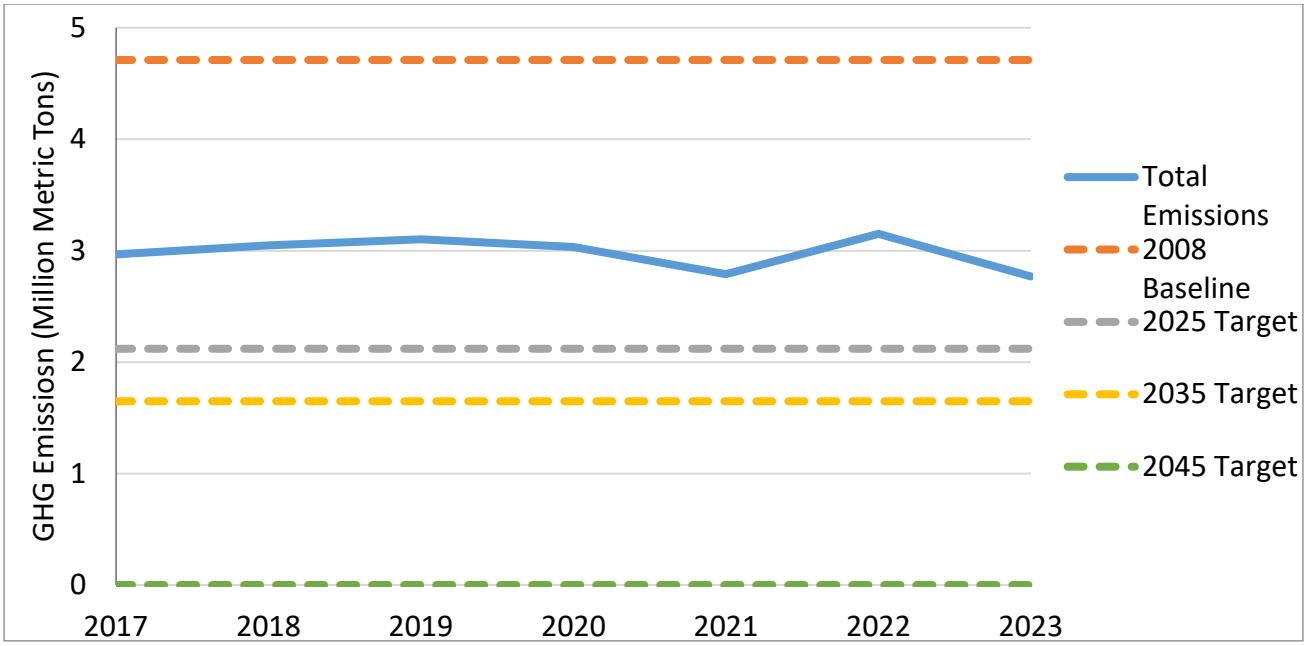

Figure 1. Municipal Emissions Progress Compared to Green New Deal Targets (New Totals and Method)

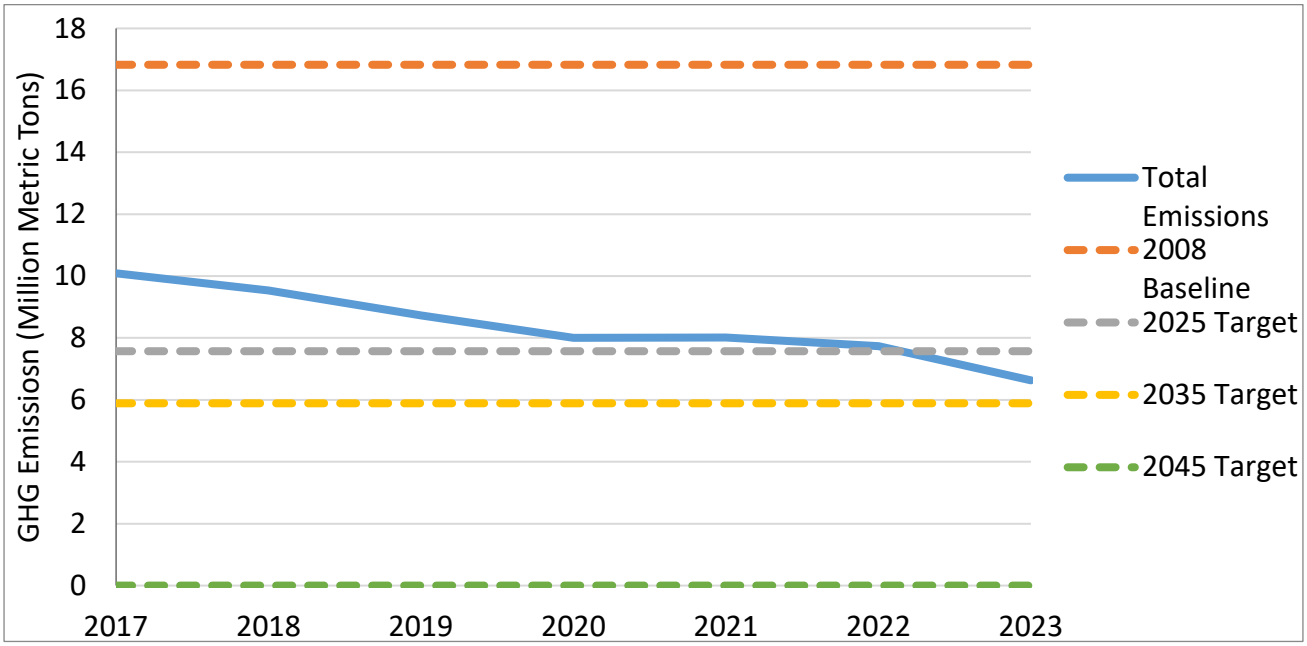

Figure 2. Municipal Emissions Compared to Green New Deal Targets (Old Values and Method)

1. Introduction

LA Sanitation & Environment (LASAN) is at the heart of Los Angeles' efforts to create a healthier, more sustainable city. Tasked in 2014 by the Mayor's Office of Energy and Sustainability (MOES), LASAN has been pivotal in tracking the city's greenhouse gas (GHG) emissions. This work is crucial for understanding and reducing our environmental impact, as highlighted in the City's first Municipal report, the 2017 Municipal Greenhouse Gas Inventory Report, which had been continually reported annually since then.

Our journey towards a greener future, especially as we aim for municipal operation carbon neutrality by 2045 as part of the 2019 Green New Deal, is guided by these detailed reports. They help us understand where we're making progress and where we need to focus more effort. In a city facing increasing heatwaves, droughts, and wildfires, LASAN's role in the City's climate action is more important than ever.

Our commitment to regular GHG emissions reporting, following a detailed and organized approach, helps shape key city plans like the Sustainability City pLAn and LA's Green New Deal. These plans set specific goals for reducing emissions and making Los Angeles a leader in urban sustainability.

Together, we're working towards a future where Los Angeles is not only a great place to live, but also a leader in environmental responsibility.

2. Methodology

2.1 Greenhouse Gasses and Global Warming Potential

In our efforts to understand and manage the City of Los Angeles' impact on climate change, we focus on the three primary greenhouse gasses (GHGs) recognized internationally:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous Oxide (N_2O)

We calculate the emissions of each of these gases separately. To understand their combined impact, we convert them into a common unit, metric tons of CO_2 equivalent (CO_2e), using Global Warming Potential (GWP) values. These values, sourced from the Intergovernmental Panel on Climate Change's Fourth Assessment Report (AR4), help us compare the impact of different gases on global warming (see Table 1 below).

Table 1. IPCC AR4 Global Warming Potential Values

Greenhouse Gas	Formula	GWP (100-year values)
Carbon Dioxide	CO_2	1
Methane	CH_4	25
Nitrous Oxide	N_2O	298

Using AR4 values, our approach aligns with the California Air Resources Board's (CARB) standards for the statewide California Greenhouse Gas Emissions Inventory, ensuring consistency and comparability.

2.2 LGOP Methodology

To guarantee accuracy and consistency, our inventory adheres to the Local Government Operations Protocol (LGOP), a widely recognized framework for GHG emissions accounting. This protocol, published by ICLEI-Local Governments for Sustainability, California Air Resources Board, the California Climate Action Registry, and the Climate Registry, is popular among municipalities, allowing us to compare our progress with other cities.

2.2.1 Inventory Boundaries

Our inventory aims to capture the GHG emissions over which the City of Los Angeles has operational control. This includes emissions from various city departments, bureaus, and agencies responsible for buildings, vehicle fleets, waste facilities, water supply, power generation, and water reclamation. As additional data becomes available and is reported to us, we develop new calculations in order to include those emissions as well.

2.2.2 Scopes

In our efforts to comprehensively track and manage greenhouse gas emissions, the City of Los Angeles classifies these emissions into types based on the Local Government Operations Protocol

(LGOP) sectors: direct (Scope 1) and indirect (Scope 2) emissions. Currently, our municipal inventories focus on these two scopes and do not include indirect scope 3 emissions.

Scope 1 direct emissions are emissions that occur right at the source, within the City's control. They can come from stationary sources like buildings, or mobile sources like city-operated vehicles, as well as from various industrial processes. Essentially, if something is part of the City's operations and emits greenhouse gasses directly, it falls under scope 1.

Scope 2 indirect emissions result from the City's consumption of electricity, heating, cooling, or steam that we purchase or acquire. While these emissions don't occur directly within our operations, they are a byproduct of the energy we use. They happen offsite away from where they're physically generated and emitted, but are still a result of our activities.

Scope 3 covers all other indirect emissions not included in scope 2. This could include emissions from transportation using vehicles the City doesn't own or control. While important, these emissions are not currently included in our reports due to limited data. However, we aim to incorporate them in the future as we gather more information.

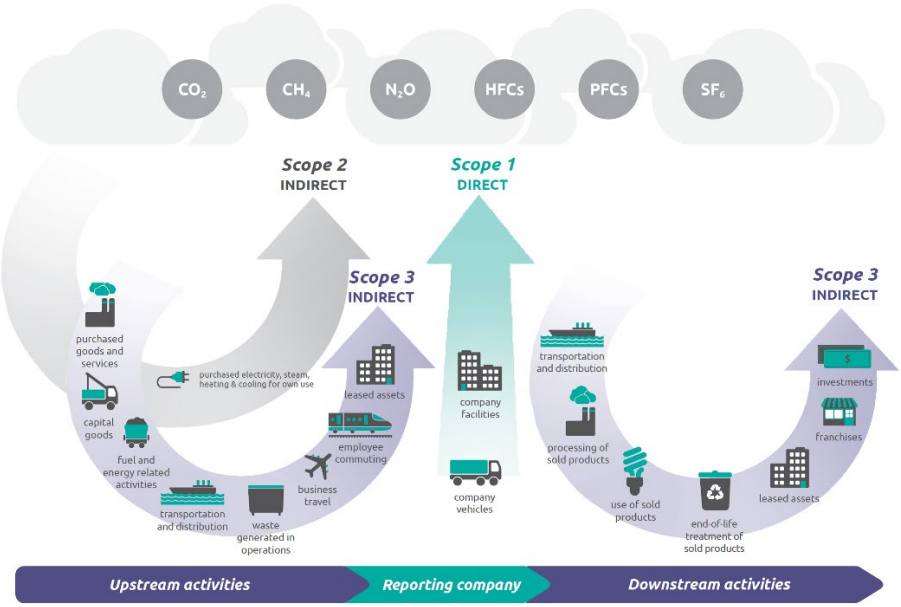

Figure 3. Overview of GHG Emission Scopes[1]

From these definitions, a municipality can generate scope 1 emissions at one of its owned facilities and consume that power at its other facilities as scope 2 emissions. When this occurs efforts should be made to ensure that emissions are not being double counted, usually by only counting the emissions at the source.

The City of Los Angeles's Municipal Inventory needs to account for this because we own and operate some of our utilities through the Los Angeles Department of Water and Power (LADWP). In Los Angeles's case, scope 2 emissions where the power was purchased from City plants are still calculated for each sector, but are not included in the summation of total municipal emissions because they're accounted for in the power generation sector as scope 1 emissions already.

[1] Source: Scope 1 and Scope 2 Inventory Guidance | US EPA, www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance. Accessed 27 Nov. 2023.

By categorizing emissions in this way, we can better understand and manage our impact on the environment, ensuring that our strategies are as effective as possible in reducing the City's carbon footprint.

2.2.3 Sectors

Under LGOP, emissions are categorized into local government sectors. The local government sectors identified in LGOP are:

- Power Generation Facilities
- Building and Other Facilities
- Streetlights and Traffic Signals
- Water Delivery Facilities
- Water Reclamation Facilities
- Port Facilities
- Airport Facilities
- Vehicle Fleet
- Transit Fleet
- Solid Waste Facilities

These sectors create a framework that is relevant to local government activities and allow them to communicate inventory information clearly.

2.2.4 Updated Methodology

In the 2023 Municipal Inventory updates have been made resulting in changes from prior years' reports. The Municipal Inventory was originally developed for use as a tool for Los Angeles to evaluate its emissions. In development of the inventory, LGOP served as the guidance for how the calculations should be performed. However, for the power generation sector, a decision was made to include emissions beyond those that would be included with LGOP in order to convey a bigger picture view of emissions. Further explanation is in Section 3.1 Power Generation.

The new changes make the Municipal Inventory adhere to LGOP exactly, as instructed by City of Los Angeles Council File 22-1402. Emissions in the inventory have been adjusted to be accurate for the 2008 baseline year values and annual values presented in the 2023 Municipal Inventory Report.

2.3 Data Collection and Providers

Through cooperation and collaboration with a variety of departments and agencies, LASAN has established a data collection process for the preparation of the annual inventories. Table 2 below is a summary of the data providers.

Table 2. Municipal Inventory Data Providers

Data Provider	Data
City Departments	
Bureau of Street Services	Asphalt plant natural gas usage
General Services Department	Vehicle fuel usage
	Street Services' asphalt plant natural gas usage (from Building Maintenance Division)
LA Department of Transportation	Department vehicle fuel usage
LA Department of Water & Power	Department electricity usage
	Department natural gas usage
	Department vehicle fuel usage
	Power generation
LA Fire Department	Department vehicle fuel usage
LA Police Department	Department vehicle fuel usage
LA Sanitation & Environment	Wastewater process data
	Digester gas data
	Landfill gas data
Los Angeles World Airports	Department electricity usage
	Department natural gas usage
	Department vehicle fuel usage
Port of Los Angeles	Department electricity usage
	Department natural gas usage
	Department vehicle fuel usage
Utilities	
LA Department of Water & Power	Electricity usage
SoCal Gas	Natural gas usage

3. Findings by Sector

This section highlights the key findings from the City of Los Angeles' municipal greenhouse gas (GHG) inventories spanning from 2017 to 2023, in comparison with the 2008 baseline year. Each year, LA Sanitation & Environment (LASAN) diligently updates these inventories. This process involves not only incorporating revised protocols, but also enhancing data collection methods, refining emission factors, and strengthening quality assurance measures. To ensure accuracy and consistency over time, previous years' inventories are also revised accordingly, aligning with the Intergovernmental Panel on Climate Change (IPCC) recommendations for developing GHG inventories.

Table 3 offers a detailed breakdown of total emissions by sector, alongside a comprehensive view of overall municipal emissions for the years 2008, and 2017-2023. As of 2023, the data indicates that power generation remains the largest contributor to municipal emissions, followed by emissions from solid waste facilities, and then emissions from buildings and other facilities. This information is crucial in guiding the City's efforts to target and reduce emissions effectively across different sectors. Currently, as shown in Figure 4, 2023 saw a total GHG emissions reduction of 41% compared to 2008 baseline. In Table 3, each sector's scope 2 emissions from electricity consumption are reported in the individual sectors and deducted from the Power Generation sector in Table 3 to avoid double counting[2].

Table 3. Total Emissions by Sector (MT CO_2e)

LGOP Category	2008	2019	2020	2021	2022	2023
Building and Other Facilities	266,795	155,099	136,609	141,070	142,190	130,940
Streetlight and Traffic Signals	153,247	38,865	30,654	32,453	31,801	31,645
Water Delivery Facilities	67,763	35,113	28,845	34,948	24,423	21,580
Water Reclamation Facilities	189,137	98,152	92,705	101,205	108,902	109,219
Port Facilities	7,654	6,380	5,013	4,705	5,310	4,013
Airport Facilities	135,388	91,605	78,381	79,089	83,686	84,853
Vehicle Fleet	191,292	145,038	132,047	137,959	143,982	136,816
Transit Fleet	35,263	20,420	19,980	24,122	21,200	19,530
Power Generation	3,468,319	2,353,668	2,354,007	2,083,600	2,441,474	2,082,635
Solid Waste Facilities	196,470	157,692	154,531	151,485	148,486	147,243
Total Municipal Emissions[2]	4,711,329	3,102,032	3,032,772	2,790,636	3,151,454	2,768,473

[2] The City functions as both an electricity generator and consumer, which can lead to double counting if Scope 1 and Scope 2 emissions are combined into a single total. To address this, Scope 1 emissions, including those from LADWP's in-basin power generation facilities, are aggregated to calculate the City-wide municipal total. Separately, each sector's Scope 1 and Scope 2 emissions are combined to provide a comprehensive view of the emissions resulting from that sector's annual energy consumption.

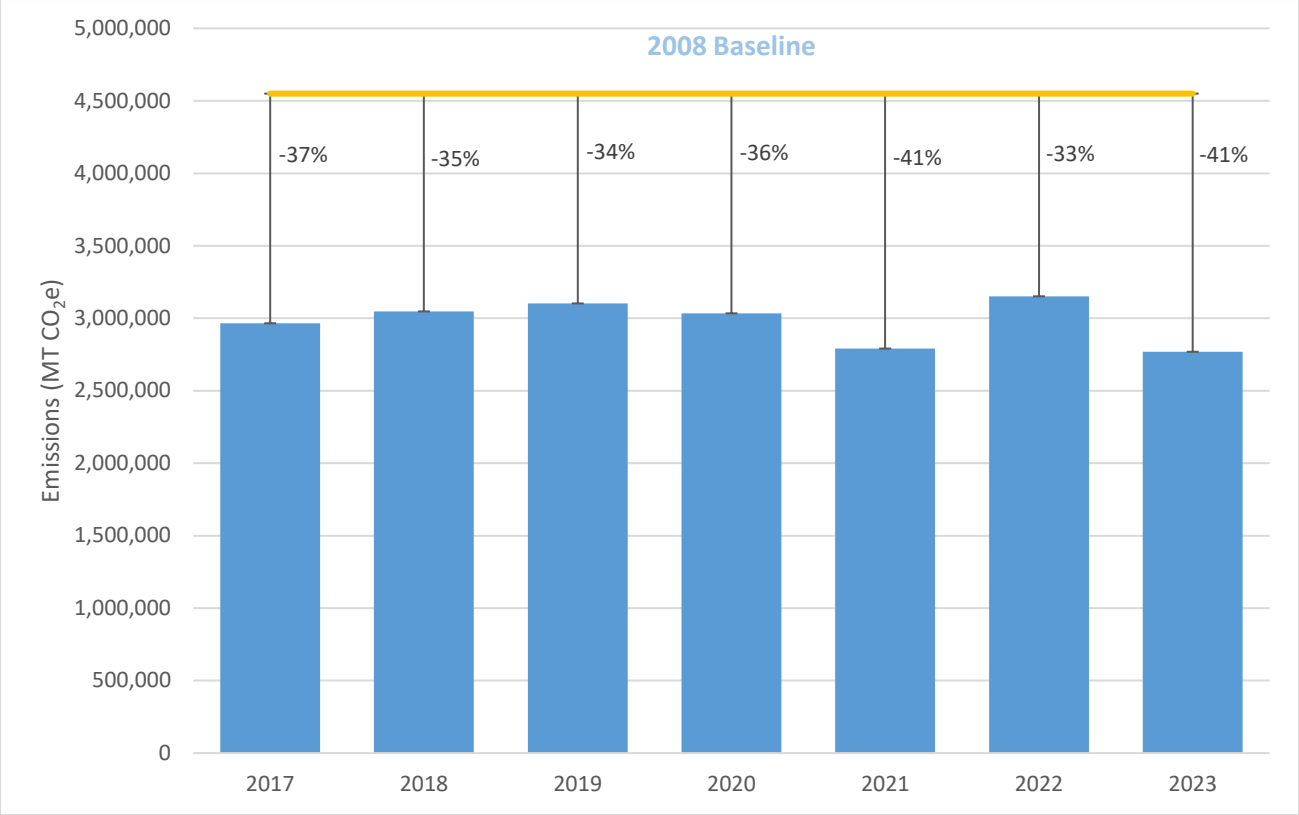

Figure 4. Overall Emissions Reductions

3.1 Power Generation

The City of Los Angeles Municipal Inventory includes emissions from the Los Angeles Department of Water and Power (LADWP), a publicly owned water and electric utility serving the City of Los Angeles. Emissions from generating electricity to serve the city are a major source of emissions in the Municipal Inventory. LGOP prescribes that all emissions under operational control are included in the municipal emissions accounting. For LADWP, in the power generation sector, this means the City's four in-basin power plants are included, as well as renewable generation which doesn't produce emissions. In the 2023 Inventory, updates have been made to this section to reflect two different emissions values. This has resulted in a recalculation of historic numbers that have been reported in the Municipal Inventory because those past values included both in-basin emissions and emissions that were not under LADWP's operational control from purchased power.

LADWP Operational Emissions (Scope 1 and Scope 2)

LADWP operates four municipally-owned generating stations within the Los Angeles region. These are referred to as: Harbor, Haynes, Valley, and Scattergood. Emissions produced by burning natural gas to generate electricity within LADWP's operational control are included as scope 1 (direct emissions) in the City's Municipal Inventory. In alignment with LGOP, these emissions are included in the City's municipal inventories. Scope 2 emissions are associated with the electricity consumed by LADWP's operations but generated by external sources outside of LADWP's operational control. These scope 1 and 2 emissions will be the official values used in the Municipal Inventory total emissions going forward in accordance with LGOP.

Total Owned and Purchased Emissions

LADWP's electricity portfolio also includes power purchased from out-of-basin facilities through joint power authority (JPA) agreements and power purchase agreements (PPAs). In accordance with LGOP, these purchased power emissions fall under Scope 3, as they are indirect emissions from electricity generation not under LADWP's direct operational control. The proportion of power generated at in-basin versus out-of-basin stations changes from year to year, and can result in large year-over-year fluctuations in the inventory's overall emissions.

LADWP's electricity supply is dynamic and subject to continual adjustment to meet the demands of the community while also pursuing long-term renewable energy and emission goals. Additional information on emissions from a combination of owned and purchased power is provided to assess the full scope of emissions and understanding of community-wide conditions. As LADWP enters agreements to expand its renewable energy portfolio to meet the State's Renewable Portfolio Standard target and the City of LA's emission reduction goals, the associated reduction in greenhouse gas emissions may not be reflected in scope 1 in-basin values reported in this inventory unless additional information is included in this section. In order to reflect the City's commitment to overall reductions in emissions from power generation for the community, the emissions from these sources will be included as supplemental information. This supplemental data provides the following value:

- Trends in Renewable Energy Adoption: Highlighting the reductions in emissions from purchased power due to LADWP's transition toward renewable energy sources will demonstrate its progress and align with the City's Green New Deal goals.
- Separate Reporting for Clarity: To avoid conflating direct and indirect emissions, the Scope 1 and Scope 3 emissions will be reported in separate tables, reflecting LADWP's operational control emissions distinctly from its broader carbon footprint.

Table 4. In-Basin Power Generation Facilities GHG Emissions (MT CO_2e)

In Basin Power Generation Facilities GHG Emissions (MT CO_2e)						
	2008	**2019**	**2020**	**2021**	**2022**	**2023**
Scope 1: Stationary Combustion	4,167,393	2,639,482	2,586,980	2,339,219	2,682,510	2,303,240
Total	**4,167,393**	**2,639,482**	**2,586,980**	**2,339,219**	**2,682,510**	**2,303,240**

Table 5. Total Owned and Purchased Power Generation Facilities GHG Emissions (MT CO_2e)

Total Owned and Purchased Power Generation GHG Emissions (CO_2e)						
	2008	**2019**	**2020**	**2021**	**2022**	**2023**
Total	**16,282,004**	**8,267,621**	**7,558,235**	**7,560,596**	**7,261,679**	**6,165,273**

Power generation is the largest source of emissions, generally accounting for over 77% of overall emissions. As of 2023, power generation emissions have decreased by 45% compared to the 2008 baseline, as illustrated by Table 4 and Figure 5.

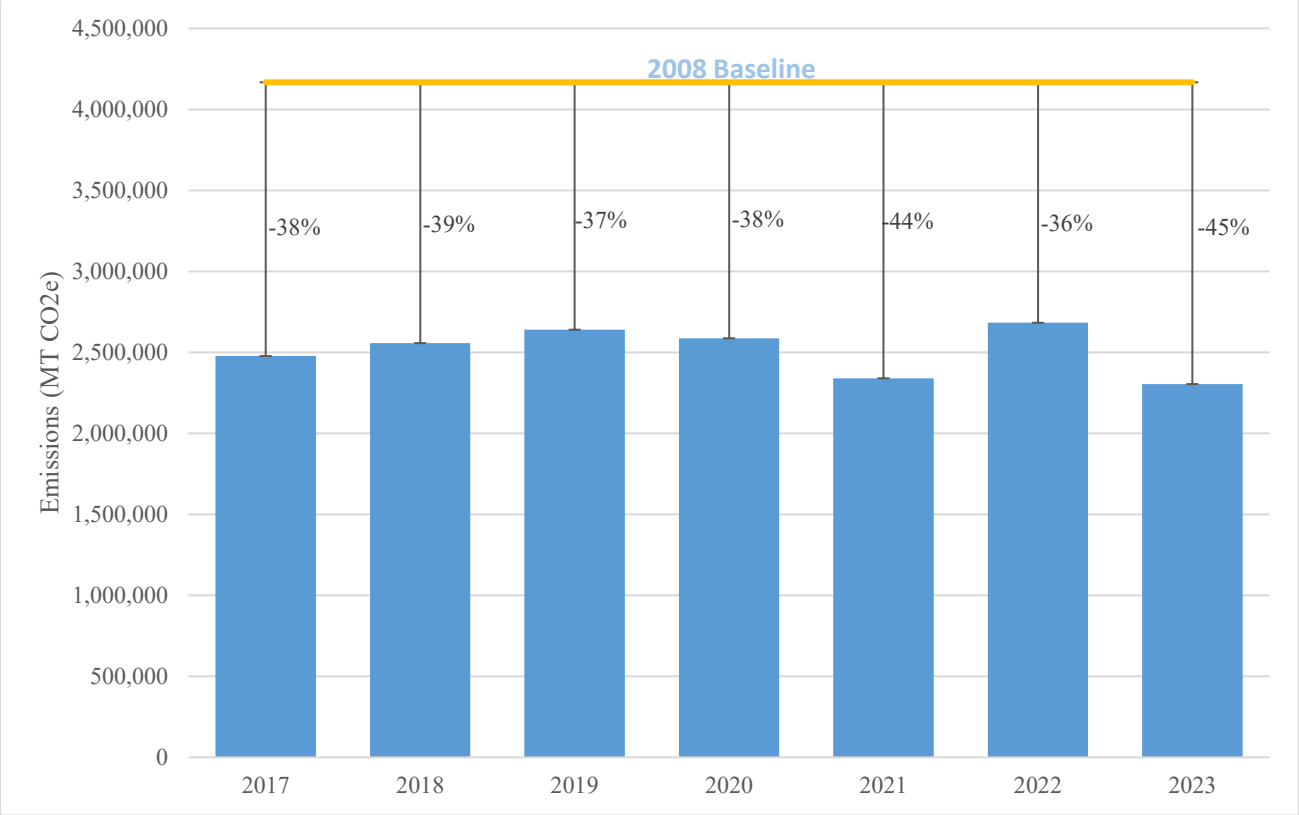

Figure 5. Power Generation Emissions Reduction from Baseline

Los Angeles is actively reducing its GHG emissions, a significant part of which is due to the LADWP shifting to cleaner, renewable energy sources. This transition away from carbon-heavy fuels means our electricity is now being generated with substantially fewer GHGs.

Looking ahead, the City is dedicated to the LA100 plan, which envisions sourcing all of Los Angeles' electricity from renewable energy by 2045, potentially achieving this milestone as early as 2035. This goal is in line with the Green New Deal's broader vision, marking a significant step towards a cleaner, more sustainable Los Angeles.

3.2 Buildings and Facilities

The building and facilities sector covers emissions associated with natural gas and electricity consumption from all City facilities that are used for municipal operations. This sector excludes facility energy used at landfills, seaports, airports, power generation facilities, potable water plants, and water reclamation plants, as those emissions are covered in their respective sectors.

Table 6. Building and Facilities Emissions (MT CO_2e)

	2008	2019	2020	2021	2022	2023
Scope 1: Stationary Combustion	26,543	31,061	34,425	32,472	34,051	37,932
Scope 2: Purchased Electricity	240,252	124,038	102,183	108,598	108,139	93,008
Total	**266,795**	**155,099**	**136,609**	**141,070**	**142,190**	**130,940**

Electricity consumption, the primary contributor to this sector's emissions, generally decreased since 2008. In 2023, the total emissions were 51% lower than the 2008 baseline, indicating a slight decrease from the previous year's emissions.

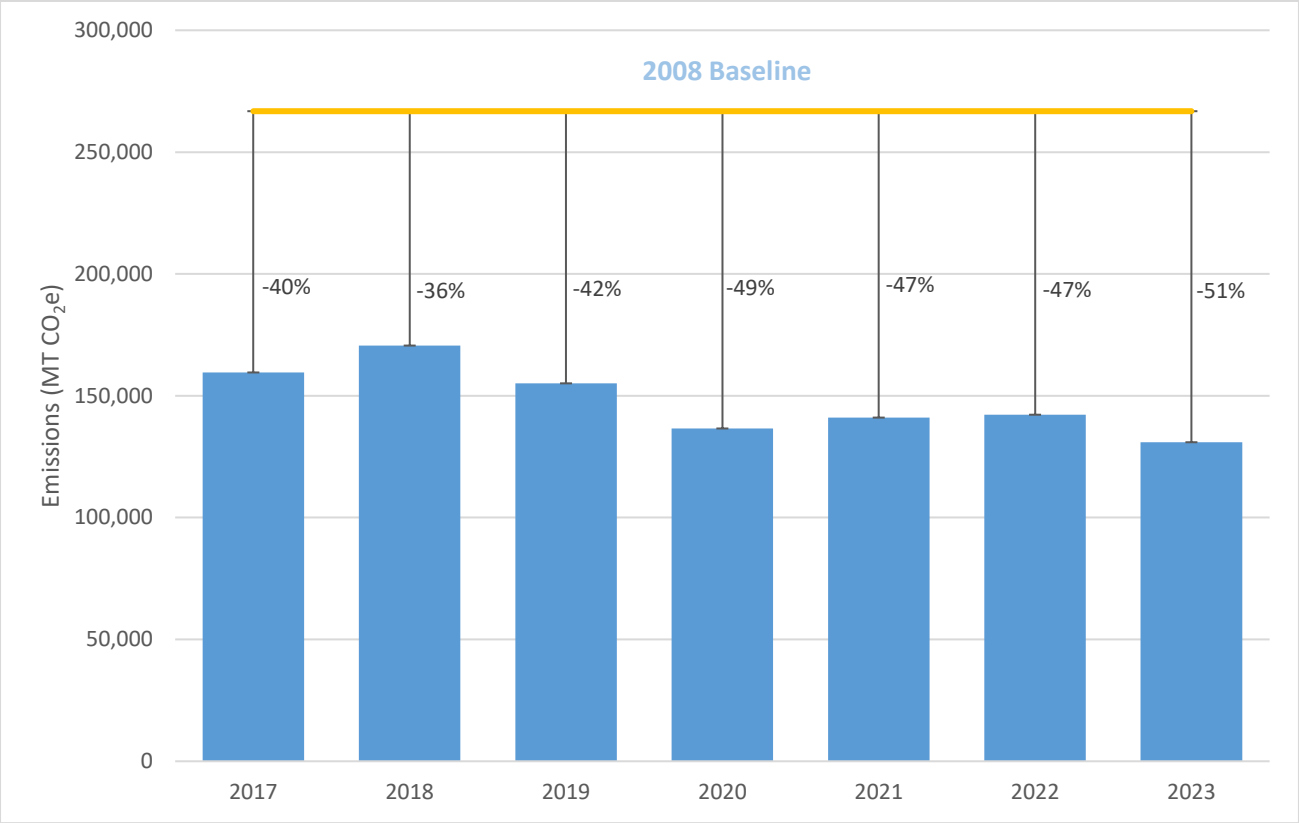

Figure 6. Building and Facilities Emissions Reductions from Baseline

The Bureau of Engineering's (BOE) Decarbonization Plan for municipal buildings is a pivotal step in reducing the City of Los Angeles' GHG emissions. The plan emphasizes how prioritizing capital investments in electrification and targeting high natural gas demand sites would maximize impacts to emissions in this sector. By implementing measures such as building electrification, energy efficiency upgrades, and renewable energy adoption, the plan would cut emissions while improving infrastructure resilience. This planning effort ensures the City's desire to achieve its climate goals, but also address urgent infrastructure needs in an equitable and impactful manner.

Aligned with L.A.'s Green New Deal, a primary goal of the decarbonization plan is to ensure all new municipally owned buildings and major renovations are fully electric. While this initiative may initially increase electricity consumption, it is expected to lead to an overall decrease in building emissions due to the reduced carbon intensity of LADWP's electricity supply. This comprehensive effort underscores the City's commitment to sustainability by driving equitable investment, creating green jobs, and setting a powerful example for the private sector to follow. By improving infrastructure resilience and advancing leadership in sustainable practices, the plan positions Los Angeles as a model for how urban centers can meet the challenges of climate change while delivering significant community benefits.

3.3 Streetlights and Traffic Signals

Emissions reported in the streetlights and traffic signals sector consist of only Scope 2 purchased electricity emissions related to the operations of streetlights and traffic signals.

Table 7. Streetlights and Traffic Signals Emissions (MT CO_2e)

	2008	2019	2020	2021	2022	2023
Scope 2: Purchased Electricity	153,247	38,865	30,654	32,453	31,801	31,645
Total	**153,247**	**38,865**	**30,654**	**32,453**	**31,801**	**31,645**

On average, about 85% of emissions in this subsector are from streetlights. In 2018, electricity consumption associated with streetlights increased by approximately 25%; however, consumption has generally been decreasing since.

This decrease is likely attributed to the Bureau of Street Services' efforts to convert all streetlights and LA tunnel lights to 100% LED lights and integrate smart nodes to enhance energy efficiency.

Table 7, above, indicates emissions were higher than last year's emissions as a result of increased electricity consumption. Emissions are expected to decrease hereafter as the grid's carbon intensity decreases.

In 2023, overall emissions for this sector were 79% below the 2008 baseline, as seen in Figure 7.

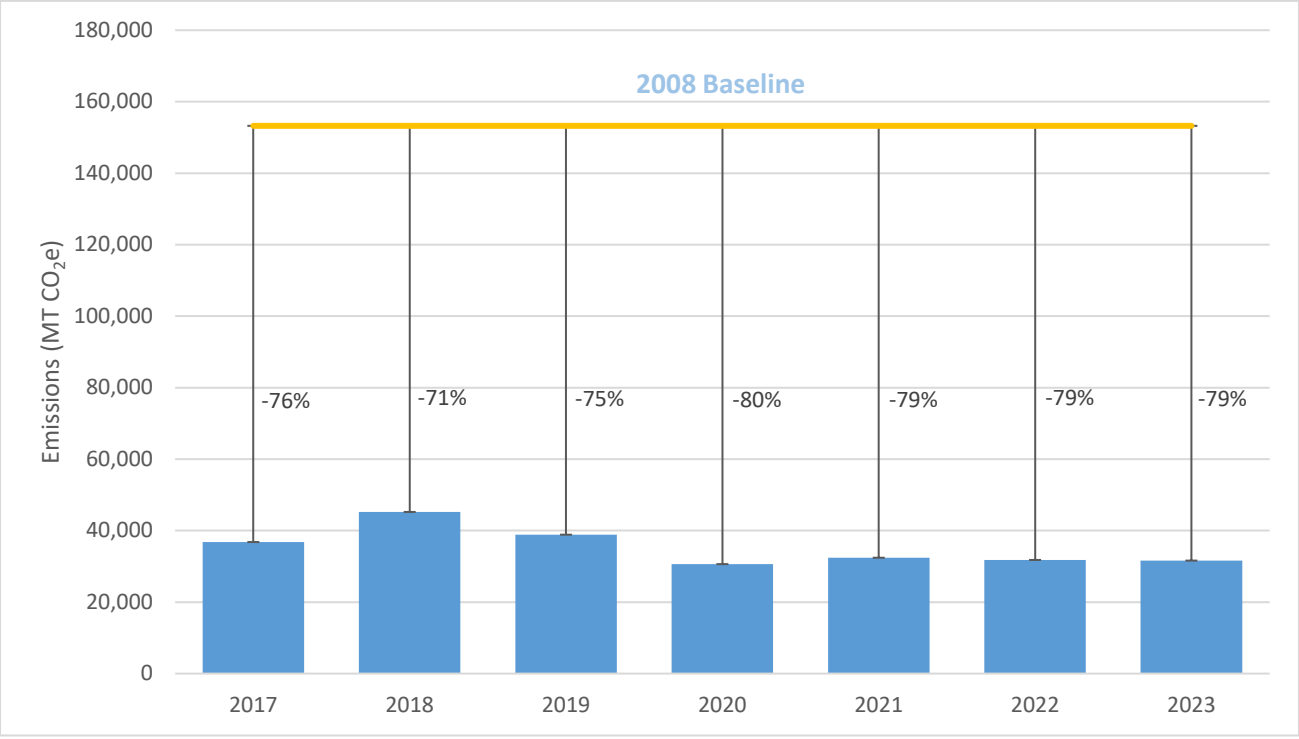

Figure 7. Streetlights and Traffic Signals Emissions Reductions from Baseline

3.4 Water Delivery

The water delivery sector contributes to GHG emissions through the activities of LADWP's potable water operations in providing water services to the residents and businesses in the City of Los Angeles. This encompasses the emissions resulting from sourcing, conveyance, treatment, storage, pumping, and distribution and transportation of potable water to the customers within the City of Los Angeles. The emissions herein only include water supply sourced from the Los Angeles Aqueduct and local groundwater, which are both managed by LADWP. However, it excludes emissions from imported water supplies from the Colorado River Aqueduct and the State Water Project, as these are operated by others beyond the City's control. Instead, the emissions from these imported sources are accounted for in the City of Los Angeles' Community Greenhouse Gas inventories.

Table 8. Water Delivery Emissions (MT CO_2e)

	2008	2019	2020	2021	2022	2023
Scope 1: Stationary Combustion	245	250	212	191	162	167
Scope 2: Purchased Electricity	67,518	34,863	28,634	34,757	24,261	21,413
Total	**67,763**	**35,113**	**28,845**	**34,948**	**24,422**	**21,580**

In 2023, the water delivery sector achieved a modest 4% reduction in emissions compared to 2022, as detailed in Table 8. This decrease reflects the increased supply from the Los Angeles Aqueduct in the wet year, which is conveyed by gravity to the City, and has lower emissions relative to other water supplies. Additionally, ongoing improvements in operational practices and the decreasing carbon intensity of LADWP's power grid helps to reduce emissions. This efficiency gain is part of a continuing trend of emission reductions in this sector, as evidenced by the data in Figure 8, which shows that the overall emissions from water delivery in 2023 were already 68% below the 2008 baseline.

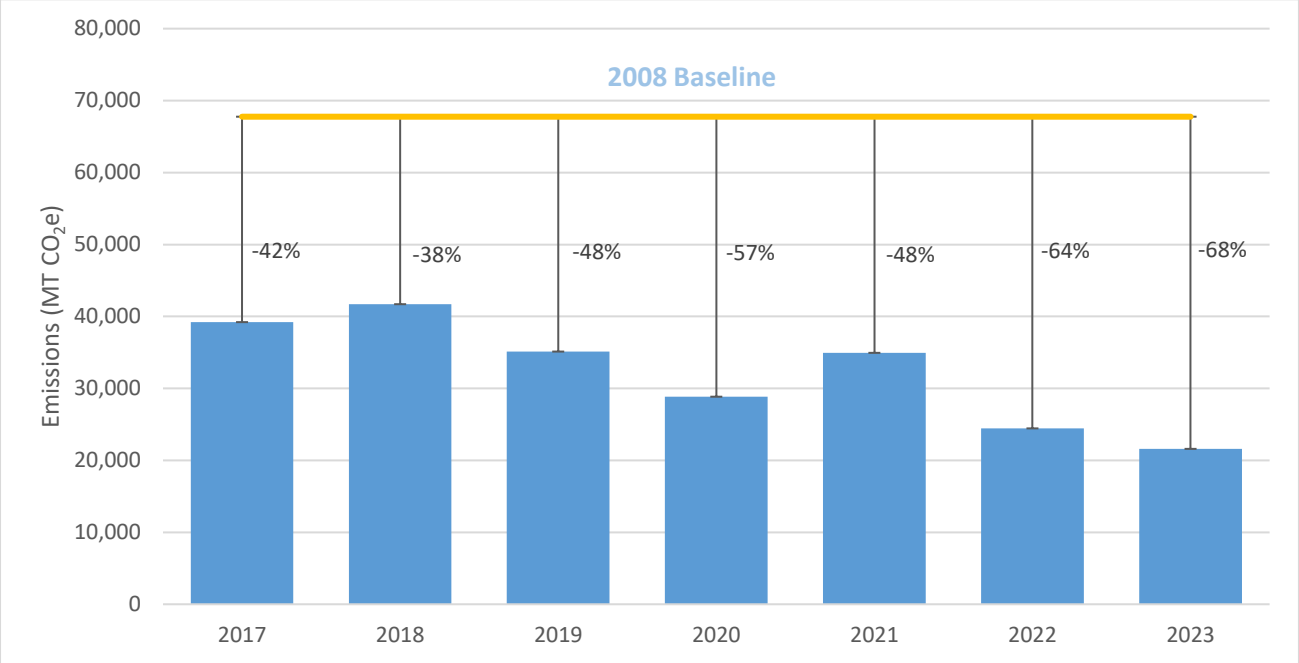

Figure 8. Water Delivery Emissions Reductions from Baseline

The City is actively working to manage water demand and diversify the water supply portfolio by implementing conservation and water efficiency measures and reducing imported supply purchases in order to reduce emissions in the long-term.

3.5 Water Reclamation

The water reclamation sector, a significant contributor to the City's greenhouse gas (GHG) emissions, encompasses the operations of four key water reclamation facilities: Hyperion Water Reclamation Plant (HWRP), Terminal Island Water Reclamation Plant (TIWRP), Donald C. Tillman Water Reclamation Plant (DCTWRP), and Los Angeles-Glendale Water Reclamation Plant (LAGWRP). These facilities are responsible for emissions stemming from various wastewater processes and effluent discharge, as well as the energy consumption required for plant operations.

Notably, the sector's emissions include CH_4 and N_2O released during the combustion of digester gas, categorized under stationary combustion. However, in alignment with LGOP protocols, CO_2 emissions resulting from digester gas combustion are deemed biogenic and thus excluded from the City's emissions inventory.

Table 9. Water Reclamation Facilities Emissions (MT CO_2e)

	2008	2019	2020	2021	2022	2023
Scope 1: Stationary Combustion and Process Emissions	49,256	78,458	74,548	74,704	89,620	89,218
Scope 2: Purchased Electricity	139,881	19,694	18,157	26,501	19,282	20,001
Total	**189,137**	**98,152**	**92,705**	**101,205**	**108,902**	**109,219**
Biogenic CO_2[3]	3,062	78,605	70,025	64,183	63,000	61,650

A significant reduction in emissions from this sector, amounting to 42% compared to the 2008 baseline, is evident as illustrated in Figure 9. However, it is noteworthy that energy consumption in these facilities has experienced a slight uptick. This trend highlights the importance of balancing efficiency gains with the growing energy demands driven by the City's ambitious Green New Deal, which aims for 100% water recycling. While this initiative is expected to increase reliance on grid-supplied electricity, ongoing efforts to decarbonize the electrical grid are anticipated to offset the emissions associated with this increased energy use, ensuring alignment with the City's long-term sustainability goals.

[3] CO_2 emissions from biogenic material (e.g. biofuel) are reported separately for informational purposes and not counted in the emission totals. Carbon from biogenic sources already exist in the natural carbon cycle so biogenic CO_2 emissions are not an addition to the environment. CH_4 and N_2O emissions are included in the emissions totals.

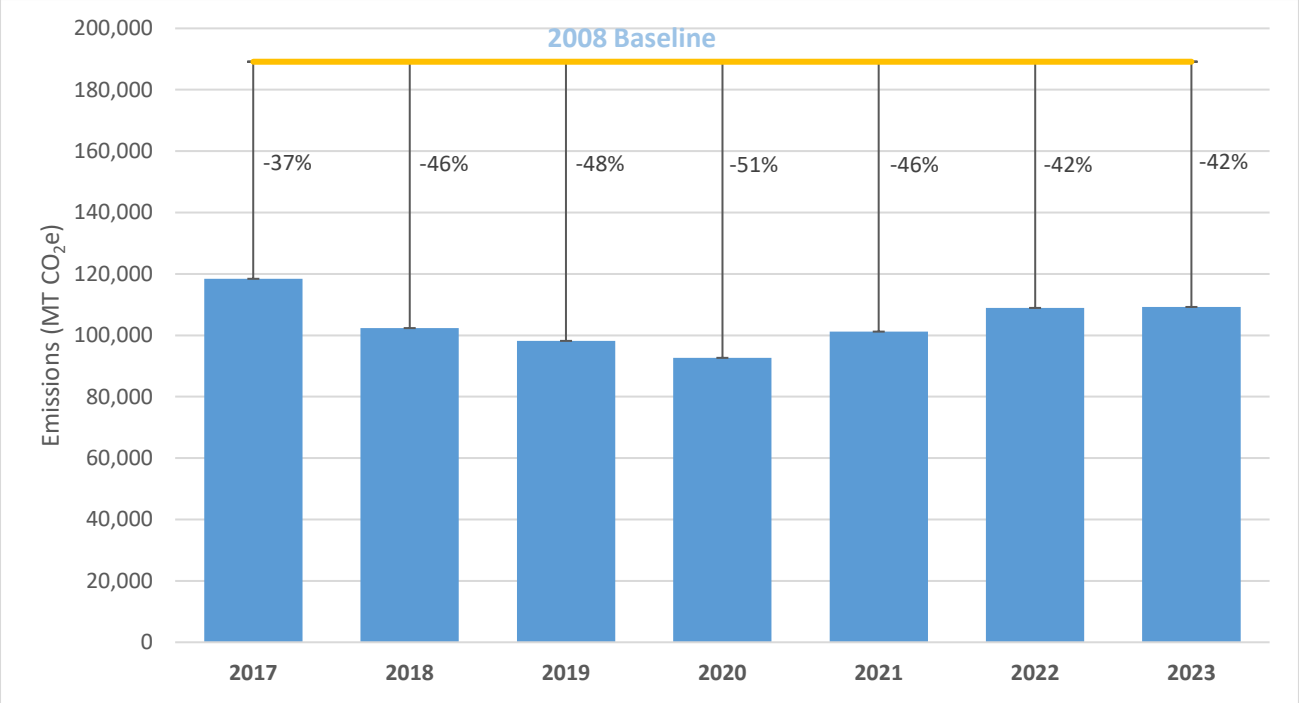

Figure 9. Water Reclamation Facilities Emissions Reductions from Baseline

3.6 Port

The port sector, specifically focusing on the Port of Los Angeles (POLA), is responsible for emissions generated by energy consumption in port-operated facilities. It's important to note that emissions from vehicles operated by the port are accounted for in the vehicle fleet sector (refer to section 3.8 Vehicle Fleet). Additionally, this sector excludes emissions from ships, vehicles, or facilities operated by third parties at POLA, which are included in the City of Los Angeles' Community Greenhouse Gas inventories.

Table 10. Port Facilities Emissions (MT CO_2e)

	2008	2019	2020	2021	2022	2023
Scope 1: Stationary Combustion	409	473	287	280	361	565
Scope 2: Purchased Electricity	7,245	5,907	4,726	4,425	4,949	3,448
Total	**7,654**	**6,380**	**5,013**	**4,705**	**5,310**	**4,013**

In 2023, despite a rise in emissions from stationary combustion, total emissions declined compared to the 2008 baseline, as indicated in Table 10. Overall, emissions in this sector have decreased by 48% from the 2008 baseline, as depicted in Figure 10.

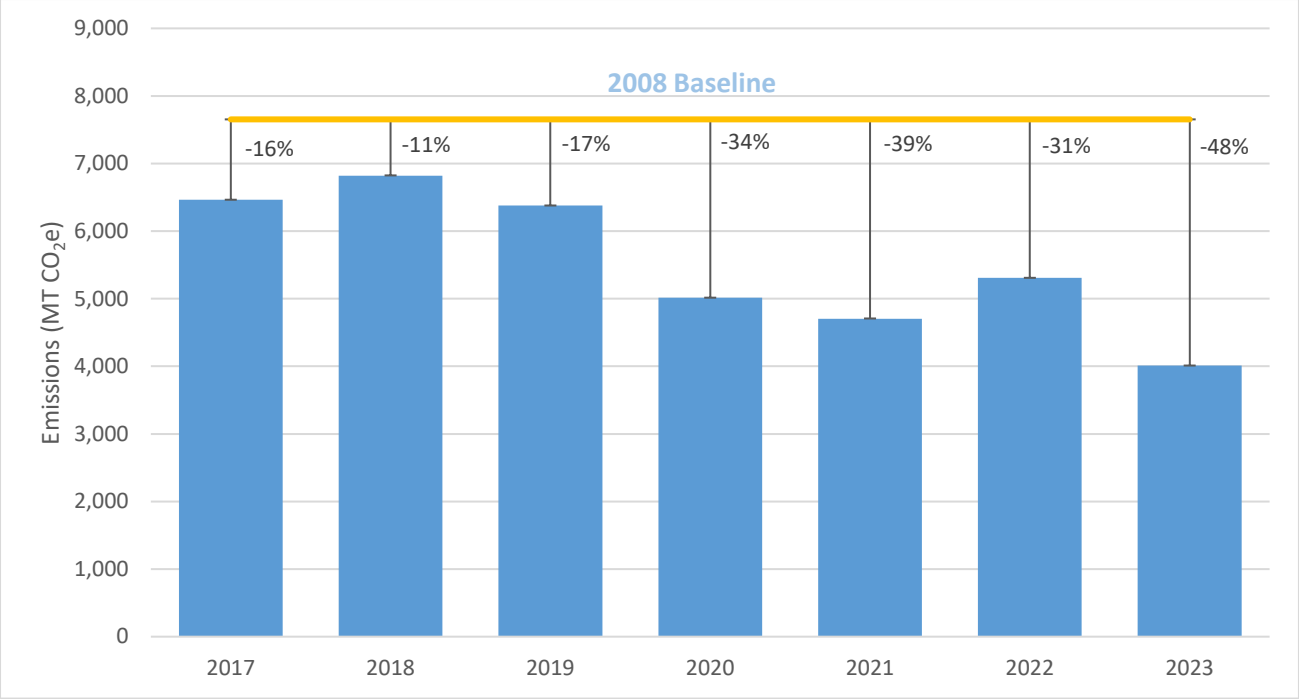

Figure 10. Port Facilities Emissions Reductions from Baseline

3.7 Airport

The airport sector encompasses emissions from Los Angeles International Airport (LAX) and Van Nuys Airport (VNY), focusing specifically on energy consumption at facilities operated by these airports. It's important to note that emissions from vehicles operated by the airports are accounted for in the vehicle fleet sector (refer to section 3.8 Vehicle Fleet). However, this sector does not include emissions from aircraft operated by third parties, which are instead included in the City of Los Angeles' Community Greenhouse Gas inventories.

Table 11. Airport Facilities Emissions (MT CO_2e)

	2008	2019	2020	2021	2022	2023
Scope 1: Stationary Combustion	44,457	29,159	29,762	30,204	31,083	33,763
Scope 2: Purchased Electricity	90,931	62,447	48,619	48,886	52,603	51,090
Total	**135,388**	**91,605**	**78,381**	**79,089**	**83,686**	**84,853**

In 2023, the airport sector experienced a slight increase in greenhouse gas (GHG) emissions. Despite this uptick, emissions remained significantly lower than historical levels, sustaining a reduction of approximately 37% compared to the 2008 baseline, as shown in Figure 11.

A key driver in 2023 may be a surge in passenger traffic at Los Angeles International Airport (LAX), which handled approximately 75 million passengers, a substantial 37% increase from the 66 million passengers in 2022. This rebound in air travel, indicative of post-pandemic recovery, likely contributed to the slight rise in GHG emissions from airport municipal facilities.

Figure 11 illustrates the long-term emissions reductions achieved since the 2008 baseline, emphasizing the ongoing efforts to mitigate the environmental impact of airport operations. Despite the challenges posed by rising passenger volumes, the sustained emissions reductions demonstrate the effectiveness of initiatives aimed at enhancing energy efficiency and reducing the sector's carbon footprint. The airport sector's commitment to environmental sustainability is evident in its continued efforts to balance growing operational demands with ambitious sustainability goals.

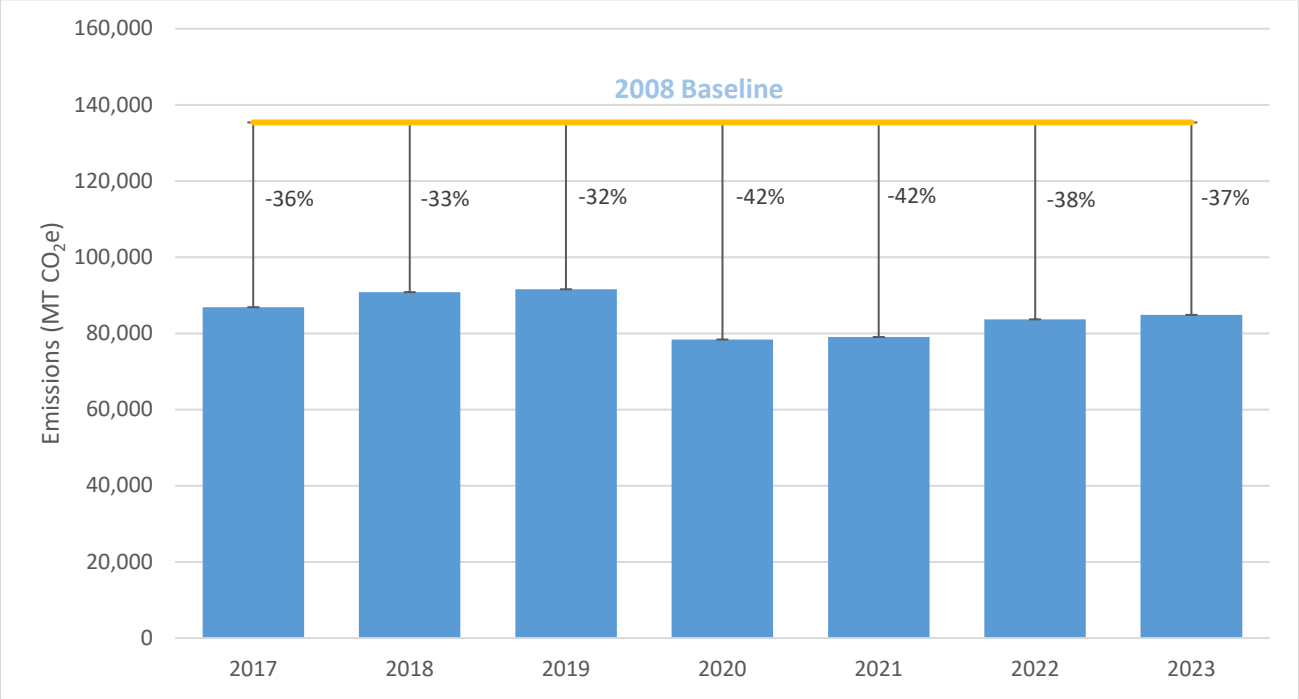

Figure 11. Airport Facilities Emissions Reductions from Baseline

3.8 Vehicle Fleet

The vehicle fleet sector accounts for emissions from on-road and off-road vehicles operated by the City, excluding the Los Angeles Department of Transportation's (LADOT) public transit fleet. Public transit fleet emissions are accounted for in their own sector (see section 3.9 Transit Fleet).

Table 12 showcases the City's ongoing commitment to lowering emissions from its vehicle fleet. Significant reductions have been achieved primarily through reducing the use of conventional fuels like gasoline and diesel, and increasingly adopting lower-carbon alternatives, such as compressed natural gas and electric vehicles. Notably, the city has also incorporated renewable natural gas (RNG), as detailed in Figure 12.

Table 12. Vehicle Fleet Emissions (MT CO_2e)

	2008	2019	2020	2021	2022	2023
Scope 1: On- and Off-Road Mobile Combustion	191,292	145,038	132,047	137,959	143,955	136,816
Total	**191,292**	**145,038**	**132,047**	**137,959**	**143,955**	**136,816**
Biogenic CO_2[4]	-	13,741	11,865	8,736	7,095	6,335

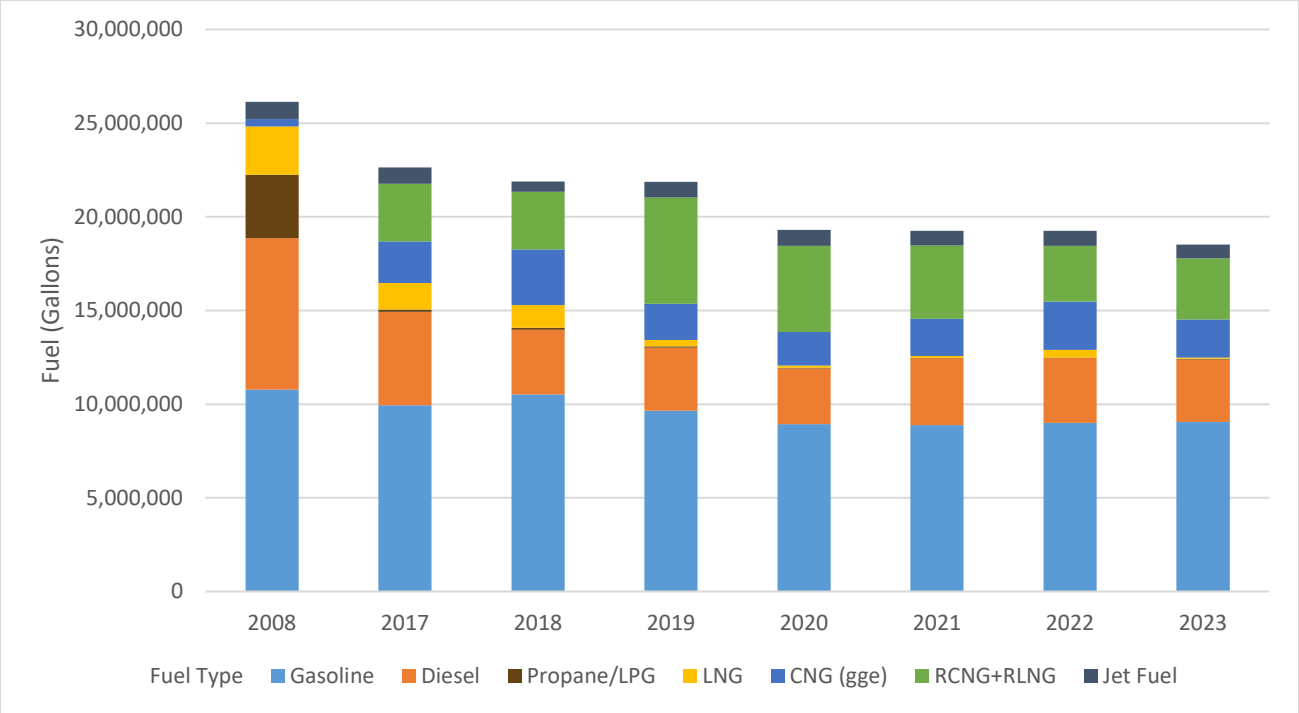

Figure 12. Fleet Fuel Consumption

In 2023, the vehicle fleet sector's emissions were 28% lower than the City's 2008 baseline, as illustrated in Figure 13. Total fuel consumption decreased by 3.8% compared to 2022, driven by significant reductions in LNG and CNG usage, alongside continued efforts to adopt cleaner and more efficient fuel options. A continued decline in emissions is anticipated as the City progresses towards its Green New Deal objective of transitioning all City fleet vehicles to zero emissions by 2028, where technically feasible.

[4] CO_2 emissions from biogenic material (e.g. biofuel) are reported separately for informational purposes and not counted in the emission totals. Carbon from biogenic sources already exist in the natural carbon cycle so biogenic CO_2 emissions are not an addition to the environment. CH_4 and N_2O emissions are included in the emissions totals.

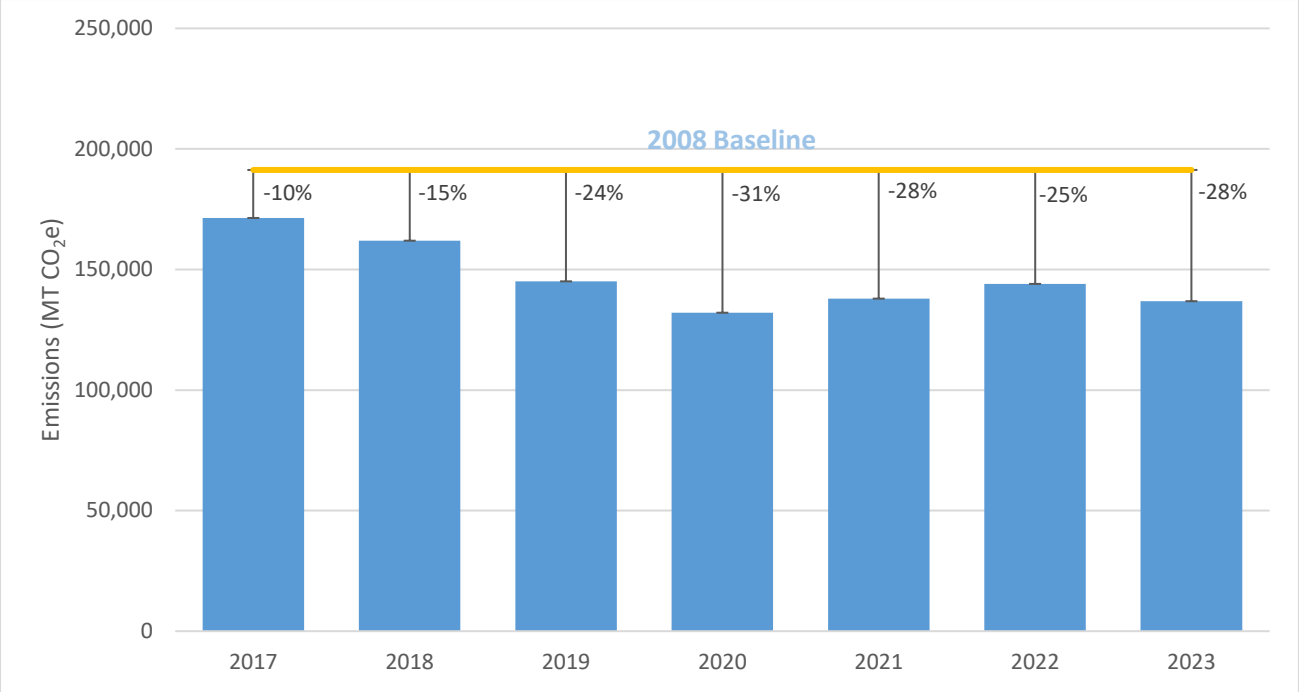

Figure 13. Vehicle Fleet Emissions Reductions from Baseline

3.9 Transit Fleet

The transit fleet sector accounts for emissions from Los Angeles' public transit fleet. This includes the City's DASH, Commuter Express, and Cityride services. This does not include emissions from the public transit fleet operated by the Los Angeles County Metropolitan Transportation Authority (Metro), which is outside the City's jurisdiction.

Table 13.Transit Fleet Emissions (MT CO_2e)

	2008	2019	2020	2021	2022	2023
Scope 1: On-Road Mobile Combustion	35,263	20,420	19,980	24,122	21,200	19,530
Scope 2: Purchased Electricity		45	41	125	130	446
Total	**35,263**	**20,464**	**20,020**	**24,247**	**21,330**	**19,976**

Table 13 presents a downward trend in emissions over the past five years. This reduction is largely attributed to the City's initiative to shift from traditional, high-carbon fuels (like gasoline and diesel) to lower-carbon alternatives, namely Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG). As of 2023, the City's transit fleet emissions have been reduced by 43% compared to the 2008 baseline.

The City is actively working towards electrifying its transit fleet. A core goal of the L.A. Green New Deal is to achieve 100% fleet electrification by 2028. As the transit fleet moves towards electrification and the carbon intensity of electricity continues to decrease, a further reduction in emissions is anticipated.

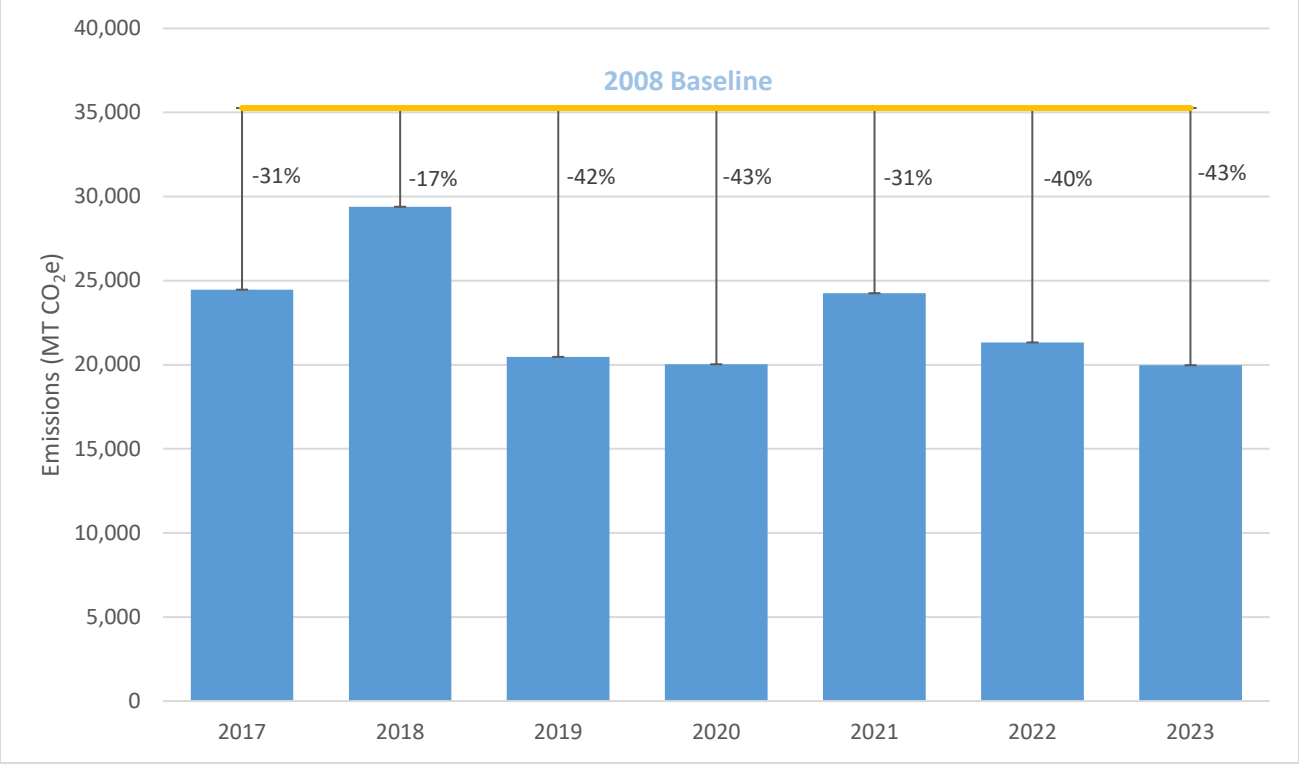

Figure 14. Transit Facilities Emissions Reductions from Baseline

3.10 Solid Waste Facilities

The solid waste sector encompasses emissions from five closed landfills - Bishop Canyon, Gaffey Street, Lopez Canyon, Sheldon-Arleta, and Toyon Canyon - all under the management of the City of Los Angeles. Although these facilities have ceased accepting solid waste, they continue to be sources of environmental impact through fugitive emissions from their landfill gas collection systems and stationary combustion emissions from the burning of captured landfill gas.

Table 14. Solid Waste Facilities Emissions (MT CO_2e)

	2008	2019	2020	2021	2022	2023
Scope 1: Fugitive Emissions and Stationary Combustion	196,440	157,692	154,531	151,485	148,486	147,243
Total	**196,440**	**157,692**	**154,531**	**151,485**	**148,486**	**147,243**
Biogenic CO_2[5]	55,029	44,168	43,282	42,430	41,589	40,766

Table 14 demonstrates emissions calculated in accordance with LGOP methodologies. According to the Protocol emissions for this sector should be calculated via a first order decay model with a variety of fixed or limited ranges of inputs. More refined calculations are possible, but due to numerous variables in gathering data for these emissions, standards for further reporting are not available in the latest edition of LGOP. In 2023, emissions calculated via the methodologies in LGOP for this sector were 25% below 2008 baseline levels, as illustrated by Figure 15.

[5] CO_2 emissions from biogenic material (e.g. biofuel) are reported separately for informational purposes and not counted in the emission totals. Carbon from biogenic sources already exist in the natural carbon cycle so biogenic CO_2 emissions are not an addition to the environment. CH_4 and N_2O emissions are included in the emissions totals.

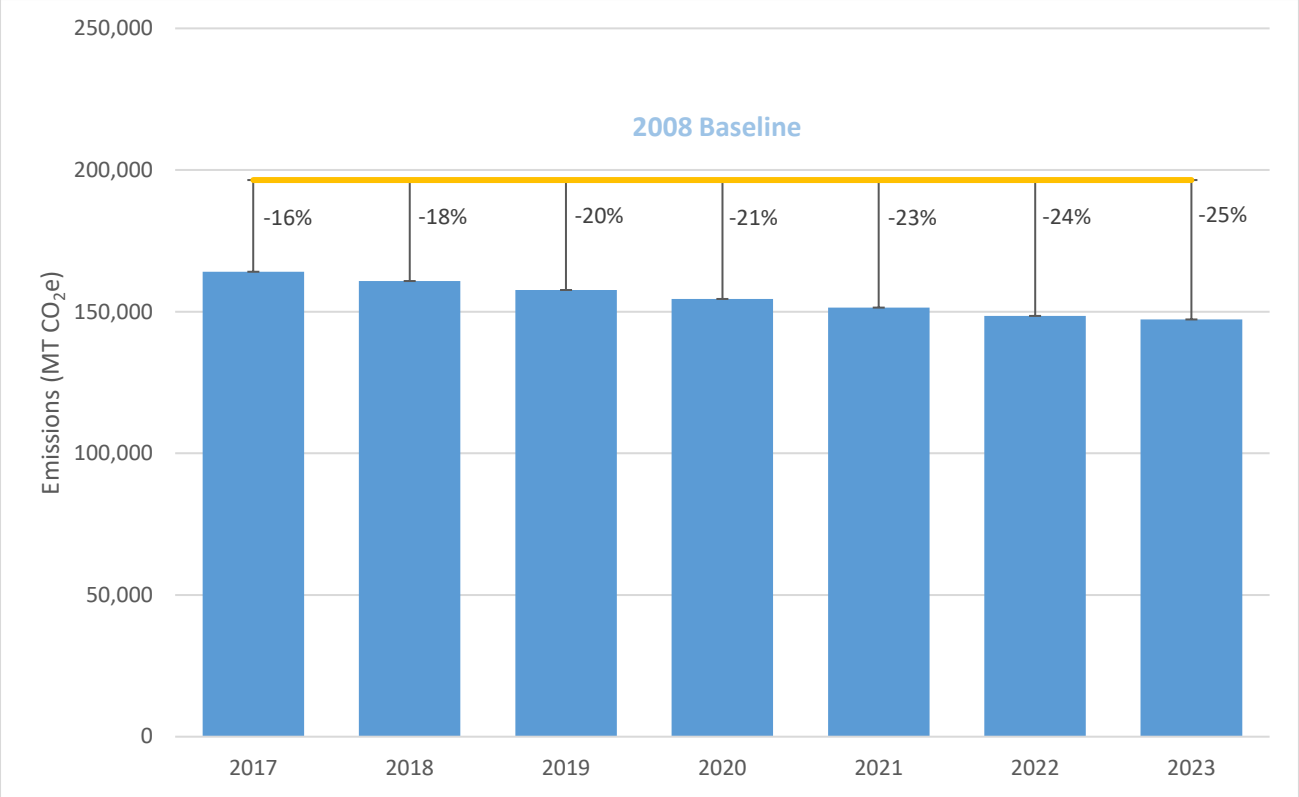

Figure 15. Solid Waste Facilities Emissions Reductions from Baseline

As we continue to monitor and manage emissions from our closed landfills, our facilities have provided the following additional data, offering deeper insights into our emission control measures and techniques that go beyond the techniques LGOP describes. In discussion with our Solid Resources staff, the following information has been described for these landfills' gas collection technologies and measurements. All landfills, except for Bishop Canyon, are equipped with gas collection and treatment systems. The precision in measuring methane composition is ensured by using a Landtec GEM5000 gas analyzer, which boasts an accuracy of ±0.5%. Furthermore, destruction rates are verified annually through EPA Method 3C gas chromatography, capable of detecting concentrations down to parts per billion (ppb). For flow measurements, Lopez Canyon employs an FCI GF90 mass flow meter, and other sites use devices with similar accuracy (±1% of reading plus 0.5% of scale) and repeatability (±0.5% of reading or better).

In addition to these advanced monitoring technologies, all collected landfill gas is directed to high-efficiency flares or energy recovery systems to maximize methane destruction and minimize greenhouse gas emissions. Regular calibration and maintenance of equipment ensure consistent accuracy and reliability of the data collected. These measures underscore our commitment to maintaining high standards of environmental stewardship and accuracy and result in significantly lower total emissions for the sector. Based on the data provided by Solid Resources in 2022, the emissions for this sector in from the measured quantities from landfill sampling in 2022 would be calculated at 105,924 MT CO_2e. We have kept the modeled values as the official numbers in accordance with LGOP's methodologies; however, the actual quantities, as indicated by measured data from Solid Resources, may differ and potentially be significantly lower. This measured data reflects the effectiveness of our enhanced gas collection systems and ongoing operational improvements aimed at reducing the environmental impact of our landfills.

4. Conclusion

In the heart of Los Angeles, our collective endeavors to diminish greenhouse gas emissions transcend mere statistics – they embody our unwavering dedication to fostering a healthier, more sustainable city. Our stride towards carbon neutrality by 2045 is not merely a theoretical ambition; it's a dynamic, communal mission that we breathe life into every single day. Our achievements thus far are noteworthy, having already realized a significant 41% reduction in emissions from our 2008 levels by 2023. However, a recent, albeit slight, deviation in this positive trajectory serves as a poignant reminder: our journey is far from over, and our vigilance is paramount to meet our ambitious 2025 targets.

At this pivotal juncture, Los Angeles is not just poised to continue its environmental stewardship, but is also committed to amplifying these efforts. Our approach extends beyond governmental policies, permeating the very fabric of our daily existence. It's about each individual embracing sustainable choices – be it through energy conservation at home, opting for public transit, or supporting local eco-initiatives.

Our collective power for change has been evident in actions like transitioning to renewable energy sources, electrifying our municipal fleet, and implementing water conservation strategies. Yet, we face ongoing challenges, such as the increased energy demands of our water facilities and the task of managing emissions from our ports and airports. These aren't mere obstacles; they represent opportunities for us to collectively innovate and devise groundbreaking solutions.

As we forge ahead, let us hold fast to the conviction that Los Angeles is resolute in its pledge to protect our environment. Reducing our carbon footprint is a shared journey, and the strategies outlined in LA’s Green New Deal are our compass. Equally crucial is the role each one of us plays in this collective endeavor. By altering our habits and fostering a culture steeped in sustainability, we are not just effecting change for the present – we are sculpting a vibrant, resilient Los Angeles for the generations to come. Let's persist in this journey together, fueled by commitment and optimism, as we pave the way for a brighter, greener future.

5. Preparers

LA Sanitation & Environment (LASAN), recognized as a national leader in environmental services and programs, is a critical partner in the City's climate action and response and in advancing the path towards the City's climate goals. LASAN is committed to proactively addressing climate change and supporting climate action in line with our mission to protect public health and the environment.

Building on nearly a decade of experience, LASAN's Climate Action Program supports the City's path towards carbon neutrality as outlined by the Sustainable City pLAn. This program collaborates with City departments, policymakers, and outside agencies on climate-related reports and activities.

For more information about the Climate Action Program, please contact us at san.climateaction@lacity.org or (213) 485-3640 or visit us at www.lacitysan.org/climateaction.

Last updated: January 2025

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Daniel Brehm

Laura McAlister

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.