CITY OF LOS ANGELES
2021 COMMUNITY GREENHOUSE GAS INVENTORY

Department of Public Works
LA Sanitation & Environment
Regulatory Affairs Division

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Executive Summary

In 2021, community-wide greenhouse gas (GHG) emissions in Los Angeles were 29% lower than its 1990 baseline (Figure 1). Los Angeles has an interim target of a 50% reduction by 2025 and a 73% reduction by 2035.

Ultimately, Los Angeles has set the ambitious goal to reach carbon neutral by 2050, as outlined in Los Angeles' Green New Deal.

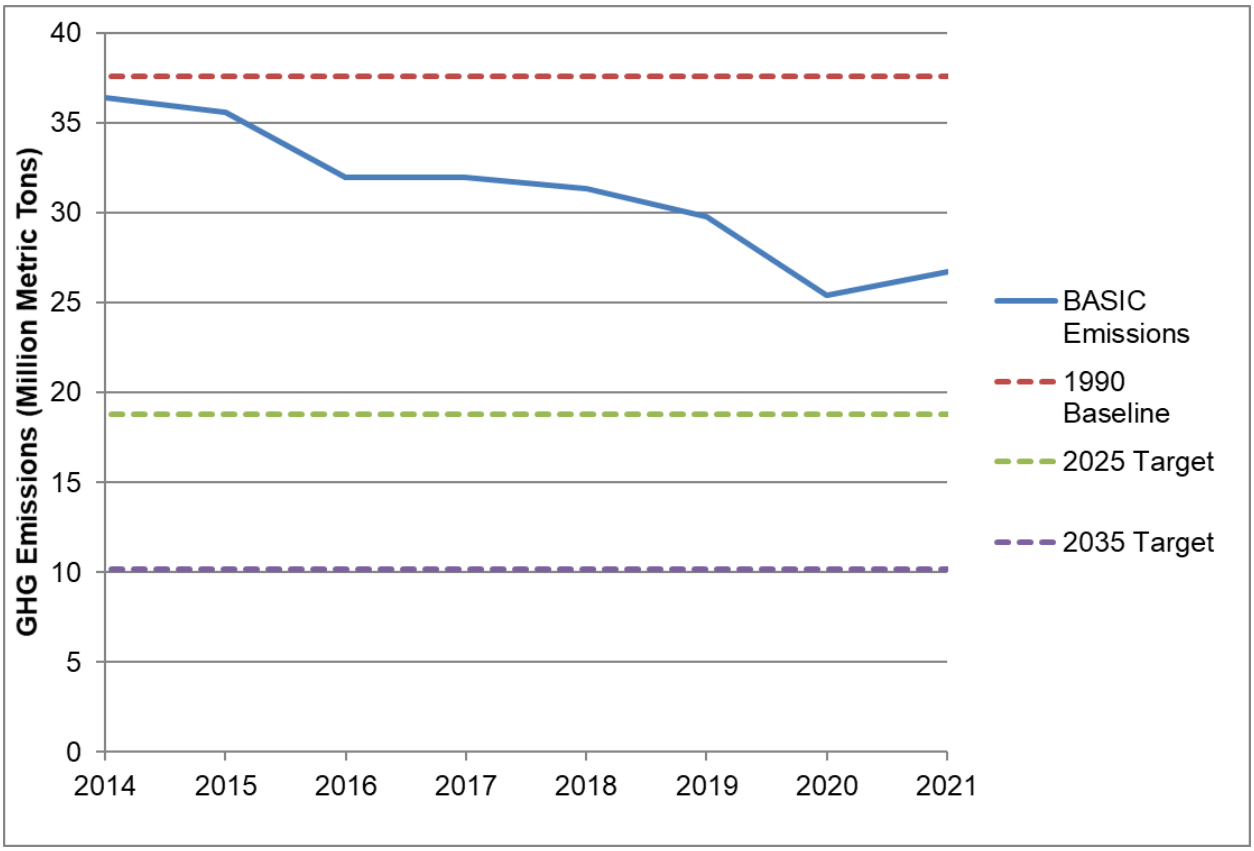


Figure 1. Emissions Progress Compared to Targets

Los Angeles' community-wide GHG inventory includes emissions from sources within the stationary energy, transportation, and solid waste sectors. In 2021, community-wide GHG emissions were 26.9 million metric tons carbon dioxide equivalent (MMT CO_2e). The value is an increase of emissions in 2021 from the previous year. This increase comes after the large drop in emissions seen previously in 2020 as a result of reduced activities related to the COVID-19 pandemic.

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

	1990	2014	2015	2016	2017	2018	2019	2020	2021	1990 vs 2021 Percent Change
Stationary Energy	26.0	23.8	23.1	19.6	19.6	19.0	17.7	16.8	16.7	**-36%**
Transportation	10.4	11.5	11.4	11.2	11.1	11.0	10.7	7.4	8.9	**-15%**
Waste	1.2	1.1	1.2	1.2	1.3	1.3	1.3	1.3	1.2	**5%**
Total Emissions	37.6	36.4	35.6	32.0	32.0	31.4	29.8	25.4	26.9	**-29%**

Table 1 shows that the increase in emissions between 2020 and 2021 is primarily a result of increased transportation related emissions. Waste sector emissions have increased slightly compared to the 1990 baseline. However even with population and consumption growth over time, emissions have remained relatively stable over the last few years and are anticipated to decrease as city and state efforts to reduce waste disposal are implemented.

Figure 2 shows that while gross domestic product (GDP) increased from 2020, emissions per GDP continued to decrease. This shows that GHG emissions are decoupled from economic growth.

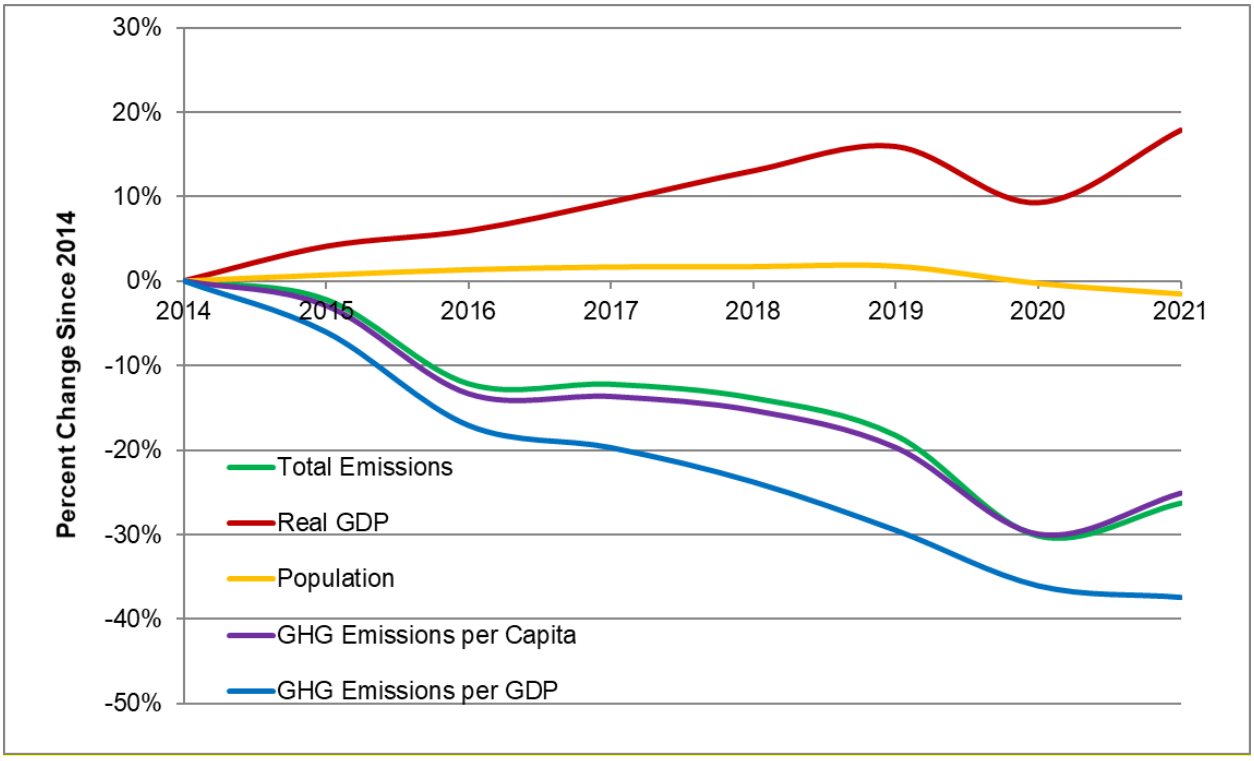


Figure 2. Emissions Trends and Metrics

1. Introduction

Climate change is a global issue that demands local action, and the City of Los Angeles is taking aggressive measures to reduce greenhouse gas (GHG) emissions and combat further climate impacts. As a lead agency for the City's environmental programs and initiatives, LA Sanitation and Environment (LASAN) is a critical partner in Los Angeles' fight against climate change. Effective climate action requires a good understanding of Los Angeles' GHG emissions quantities and sources, drivers and influencers, and trends. This information can inform decision makers and stakeholders to take dynamic action to address climate change. LASAN's annual, comprehensive community GHG inventories are an essential component to developing that understanding. They also provide metrics to measure progress toward the City's ambitious climate goals.

In 2019, LASAN was tasked by the Mayor's Office of Sustainability (MOS) with preparing the City of Los Angeles' annual community greenhouse gas (GHG) inventories. At that time, LASAN also upgraded all previously prepared GHG inventories from the BASIC to the BASIC+ rating. Previously, only a BASIC inventory was prepared due to a lack of data sources for the areas required for BASIC+. BASIC+ inventories continue to be prepared to provide a more comprehensive understanding of emissions associated with Los Angeles.

To date, LASAN has community-wide inventories for calendar years 2014-2021 and 1990, which serves as the baseline. 1990 was established as the community baseline in the City's Sustainable City pLAn. All reduction percentages cited in this report use the 1990 GHG inventory as the baseline. This report will focus on summarizing the emissions for Los Angeles' 2021 Community GHG Inventory while also providing emissions trends over time.

2. Methodology

LASAN prepares the City's GHG inventory using C40's Global Protocol for Community-Scale Greenhouse Gas Emissions (GPC), which is a widely recognized guidance document. The GPC outlines two complementary approaches which are used in Los Angeles' inventories: the scopes framework and city-induced framework since City activities generating emissions can occur inside or outside the city boundary. This inventory estimates emissions of five GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). Each GHG has a global warming potential (GWP), which is the ratio of its heat-trapping ability relative to that of CO_2. Using their GWPs, emissions of each GHG are converted to units of CO_2 equivalents (CO_2e) in this report to allow for a consistent comparison.

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 utilizes the Intergovernmental Panel on Climate Change's (IPCC) AR4 GWP values to stay consistent with California Air Resources Board's (CARB) annual 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 as a result of actions occurring within the city boundary (out-of-boundary activities).

2.2 BASIC vs BASIC+

The GPC outlines two reporting levels, BASIC and BASIC+ as shown in Figure 3. BASIC covers Scope 1 and 2 emissions from the stationary energy and transportation sectors, and Scope 1 and 3 emissions from the waste sector. BASIC+ is more comprehensive and includes all emissions under BASIC reporting as well as two additional sectors, industrial processes and product use (IPPU) and agriculture, forestry, and other land use (AFOLU), and Scope 3 emissions from stationary energy and transportation sectors. While BASIC+ reporting provides a more holistic view of the City's GHG emissions, the City has little direct influence or control over these additional sources. This report discusses all five sectors under BASIC+ but only BASIC emissions are used to track progress toward the goals and targets outlined in L.A.'s Green New Deal.

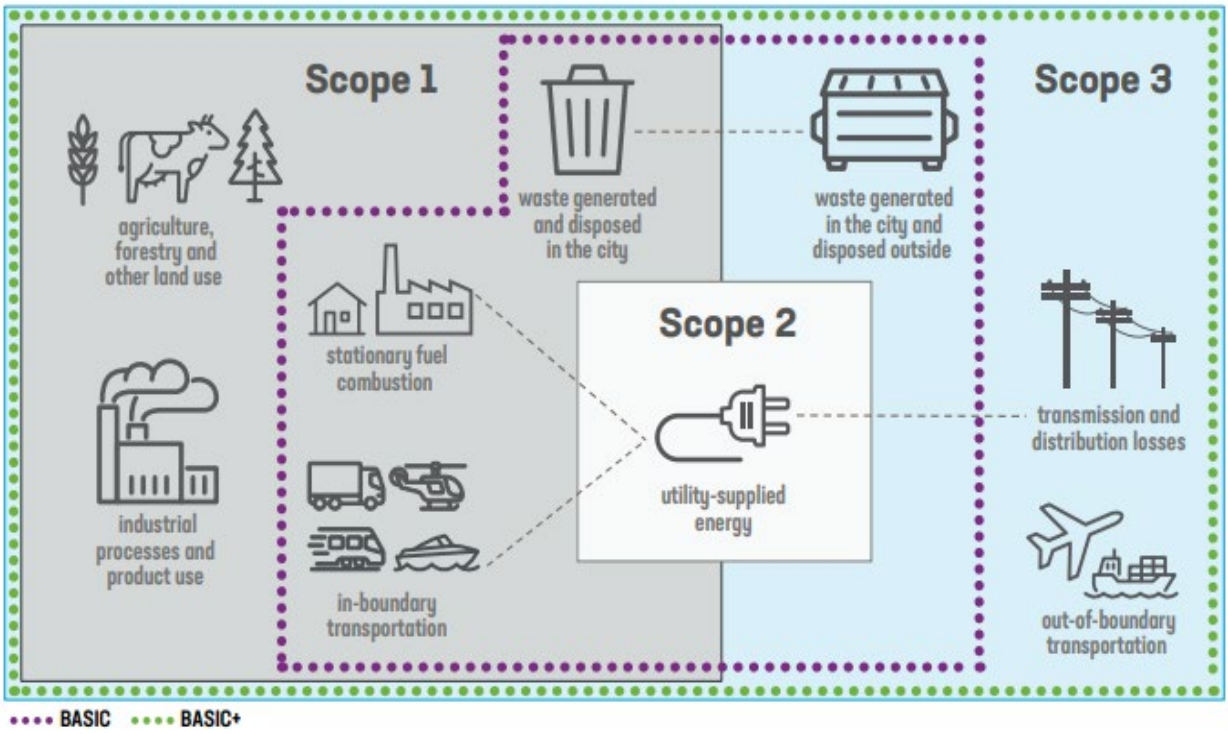


Figure 3. Sources Included in BASIC and BASIC+

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 preparation of the annual inventories. Table 3 summarizes the data providers.

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	
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
BNSF Railway	Fuel usage
Union Pacific	Fuel usage
LA Metro	Rail propulsion electricity usage
ICLEI	Land use change emissions estimate

3. Findings by Sector

The sections below present findings from the City's 2014-2021 community 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 for earlier years than in previous inventory reports.

As shown in Figure 4, the largest sector in Los Angeles' community GHG inventory is the stationary energy sector, accounting for over 60% of total emissions, followed by the transportation sector and the waste sector.

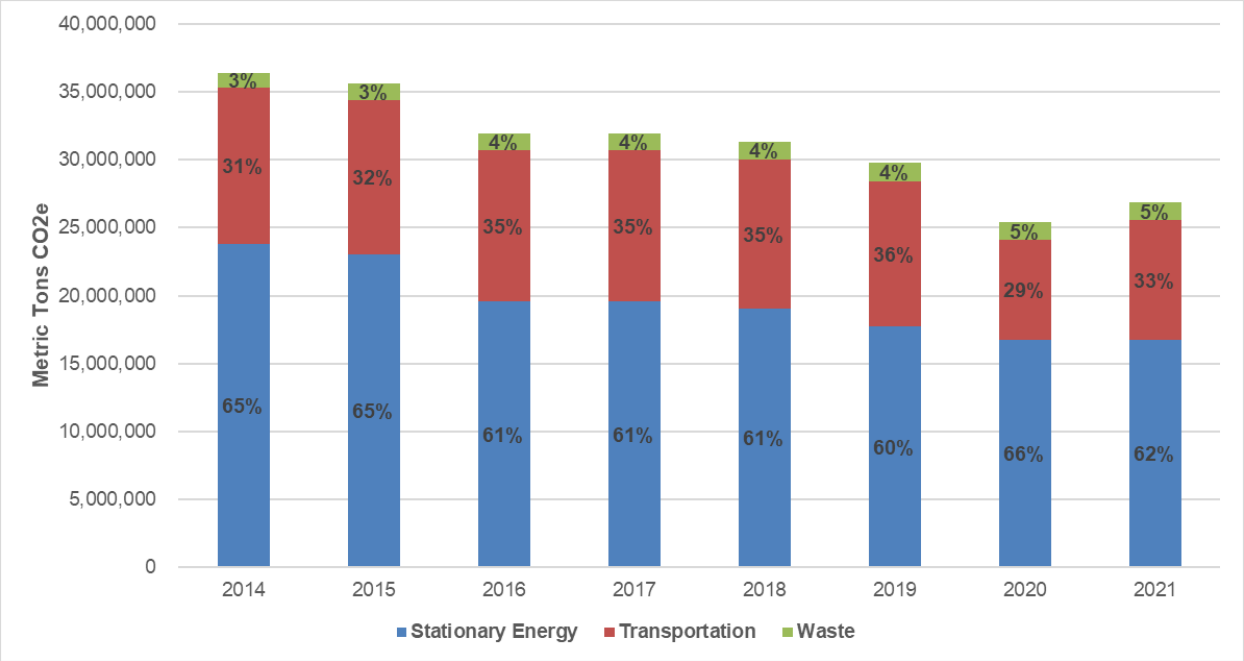


Figure 4. BASIC Emissions by Sector

The City's overall emissions increased when compared to 2020, but declined compared to 2019. The COVID-19 pandemic, beginning in 2020, impacted all aspects of life within the City of Los Angeles and 2020 saw major changes in the subsector emissions trends. For example, Los Angeles' "Safer At Home" order caused an unusually large decline in the on-road transportation subsector and may have caused a stationary energy sector shift from the commercial use to residential subsector. While some of these trends still hold true in the 2021 inventory, the on-road transportation subsector experienced another large change in 2021 by increasing over 20% higher than 2020 emissions.

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/facilities	Manufacturing industries and construction	Energy industries	Fugitive emissions from oil and natural gas systems	Total Stationary Energy Emissions
2014	6,585,035	8,459,411	3,995,242	4,587,045	214,610	23,841,342
2015	6,543,251	8,218,211	3,918,539	4,161,174	213,396	23,054,571
2016	5,394,410	6,227,068	3,446,961	4,294,149	216,983	19,579,570
2017	5,212,031	5,885,682	3,817,250	4,437,001	215,680	19,567,644
2018	5,099,756	5,902,512	3,324,961	4,494,094	216,611	19,037,933
2019	5,023,171	5,536,767	2,724,761	4,229,907	216,173	17,730,780
2020	5,039,695	4,700,410	2,620,470	4,201,503	211,648	16,773,727
2021	4,848,816	4,896,055	2,648,699	4,131,840	208,201	16,733,611

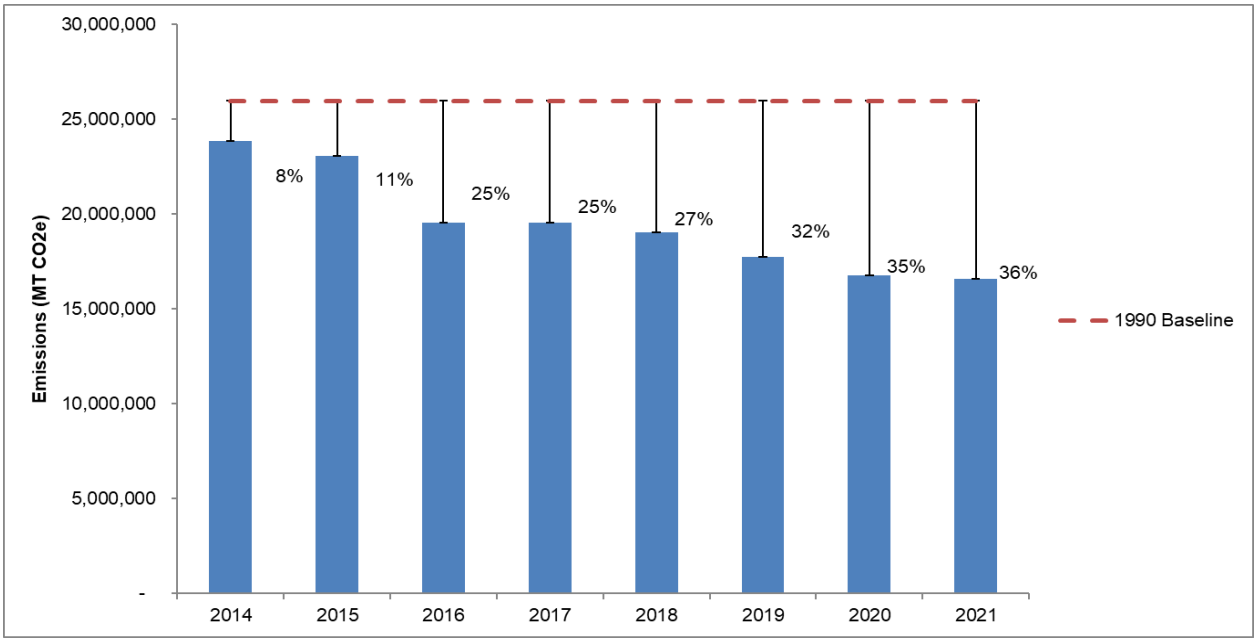


Figure 5. BASIC Stationary Energy Sector Emissions Reductions from Baseline

While Table 4 shows there was little change in emissions between 2020 and 2021, overall emissions in this sector have decreased 36% since 1990 (Figure 5) with reductions primarily driven by decarbonization of the electricity grid.

Between 2014 and 2021, the carbon emissions from the City's electricity generation has decreased by 46% (Figure 6).

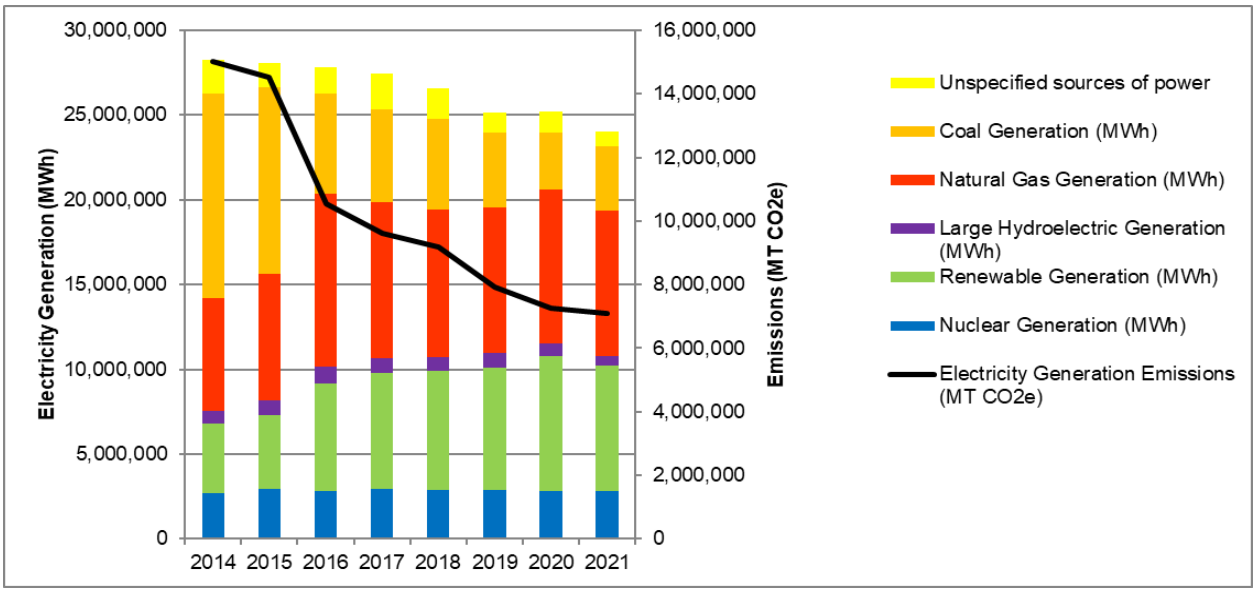


Figure 6. Electricity Generation Portfolio vs Emissions[1]

This decarbonization trend will continue as LADWP works towards supplying 100% renewable energy by 2045 as outlined in LA100 plan and the Los Angeles' Green New Deal.

The City is making progress towards the current Green New Deal target and has more work to do to achieve its clean energy goal as early as 2035. Further reductions in this sector will have to come from decarbonizing buildings, energy efficiency, and reducing fuel combustion at industrial facilities.

The additional stationary energy emissions included in BASIC+ are primarily from electricity transmission and distribution losses (Table 5).

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
2014	7,199,130	9,658,735	4,132,769	4,587,045	214,610	25,792,288
2015	7,100,858	9,311,523	4,031,961	4,161,174	213,396	24,818,912
2016	5,774,009	6,972,334	3,522,091	4,294,149	216,983	20,779,566

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

	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
2017	5,559,937	6,483,963	3,886,707	4,437,001	215,680	20,583,289
2018	5,428,269	6,564,176	3,379,660	4,494,094	216,611	20,082,810
2019	5,316,558	6,078,979	2,770,645	4,229,907	216,173	18,612,262
2020	5,334,948	5,256,346	2,660,643	4,201,503	211,648	17,665,088
2021	5,130,246	5,454,445	2,687,172	4,131,840	208,201	17,611,903

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,[2] 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
2014	11,128,487	98,421	55,892	17,336	162,034	11,462,169
2015	10,980,080	99,356	61,013	16,792	220,511	11,377,752
2016	10,827,971	82,100	58,348	14,906	194,183	11,177,508
2017	10,750,281	83,800	62,331	17,959	198,780	11,113,151
2018	10,605,779	85,182	66,092	16,828	234,565	11,008,446
2019	10,296,814	86,284	60,884	16,157	239,977	10,700,115
2020	6,961,527	76,900	60,734	14,068	237,695	7,350,925
2021	8,486,904	71,754	53,521	14,882	244,659	8,871,721

[2] It should be noted that on-road transportation emission reported here are much higher than emissions reported in previous inventory reports due to a change in modeling protocol. Beginning in 2021, Los Angeles' community GHG inventory utilized Google's Environmental Insights Explorer (EIE) Tool to estimate on-road transportation emissions, based on conversations and recommendations from C40 Cities staff. The EIE Tool combines location tracking data with scaling factors to estimate in-boundary and transboundary trips, and provides annual datasets that more accurately reflect real-world trends and changes to the on-road transportation sector. Previous inventories used data from a transportation demand model, which were developed and designed for land-use planning, infrastructure development, and policy making and not for estimating overall vehicle miles travelled (VMTs) and GHG emissions. However, when cities began preparing GHG inventories, these models were identified as the best source of available data for on-road transportation data. The Google's EIE tool provides annual city-scale data on VMT, showing year-to-year changes that can better reflect major impacts or changes to transportation trends. Furthermore, C40 and ICLEI, two international leaders in climate action, have reviewed EIE tool for compliance with GPC methodology and recommended its use in community inventories. On-road transportation emissions were updated for all years.

Overall, emissions in this sector have decreased by 15% since 1990 (Figure 7), primarily from on-road transportation. On-road emissions have been decreasing consistently since 2014, but there was a steep decrease in 2020 resulting from reduced activity related to the COVID-19 pandemic.

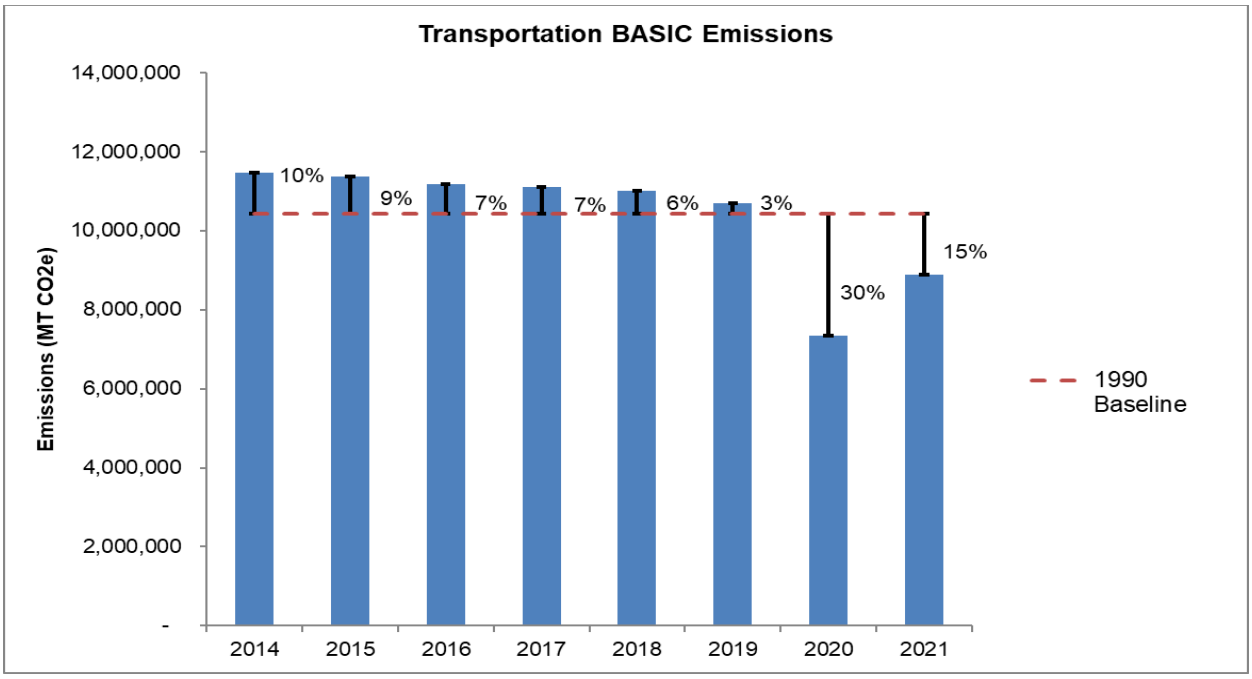


Figure 7. BASIC Transportation Sector Emissions Reductions from Baseline

However, following the sharp decrease in travel activity resulting from the California Stay at Home Order[3] in 2020, the data in Table 6 shows 2021 saw a rebound in travel activities with vehicle miles travelled (VMTs) increasing by approximately 26%. Decreasing the on-road transportation subsector's emissions will require vehicle electrification alongside decarbonization of the electricity grid, as well as decreasing VMTs through methods such as increasing access to public transportation.

BASIC+ transportation emissions in Table 7 are significantly higher because they include commercial cargo ship fuel usage in the waterborne navigation and aircraft fuel usage in the aviation subsectors. While these activities are outside the City's regulatory authority, Los Angeles World Airports (LAWA) and Port of Los Angeles (POLA) are implementing initiatives and programs to reduce these emissions. For example, LAWA is working with tenants on sustainable aviation jet fuel usage and POLA is working with oceangoing vessels to use shore-side electricity instead of diesel when at berth.

[3] Governor Gavin Newsom issued a stay at home order to protect the health and well-being of all Californians and to establish consistency across the state in order to slow the spread of COVID-19.

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

	On-road transportation	Railways	Waterborne navigation	Aviation	Off-road transportation	Total Transportation Emissions
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	10,834,904	187,229	4,479,269	18,323,514	194,183	34,019,099
2017	10,757,908	188,836	3,075,527	19,147,217	198,780	33,368,269
2018	10,615,163	197,534	3,964,351	19,559,534	234,565	34,571,148
2019	10,306,268	212,470	4,243,487	19,401,839	239,977	34,404,040
2020	6,969,242	187,027	2,929,032	11,451,145	237,695	21,774,141
2021	8,496,451	182,407	2,715,701	13,986,468	244,659	25,625,686

3.3 Waste

The waste sector includes disposal and/or treatment of solid waste and wastewater. Waste disposal and treatment produces emissions through decomposition or incineration.

Table 8. Waste Emissions by Subsector (MT CO_2e) [4]

	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
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	47,838	1,246,138

Solid waste disposal at landfills accounts for over 95% of this sector's emissions (Table 8). Emissions from this sector have increased slightly compared to the baseline (Figure 8) and this can be attributed to population and economic growth, as well as consumer habit shifts toward e-commerce and food delivery. However, since 2019 emissions have been decreasing and the City continues to work hard to keep this trend going. The City's organics recycling efforts, increased producer responsibility policies, and efforts to decrease single-use items is working towards lowering the City's landfill disposal tonnage. Public education and behavioral shifts will also play an important role in lowering disposal. It should be noted that the waste sector emissions only account for approximately 5% of the City's total emissions.

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

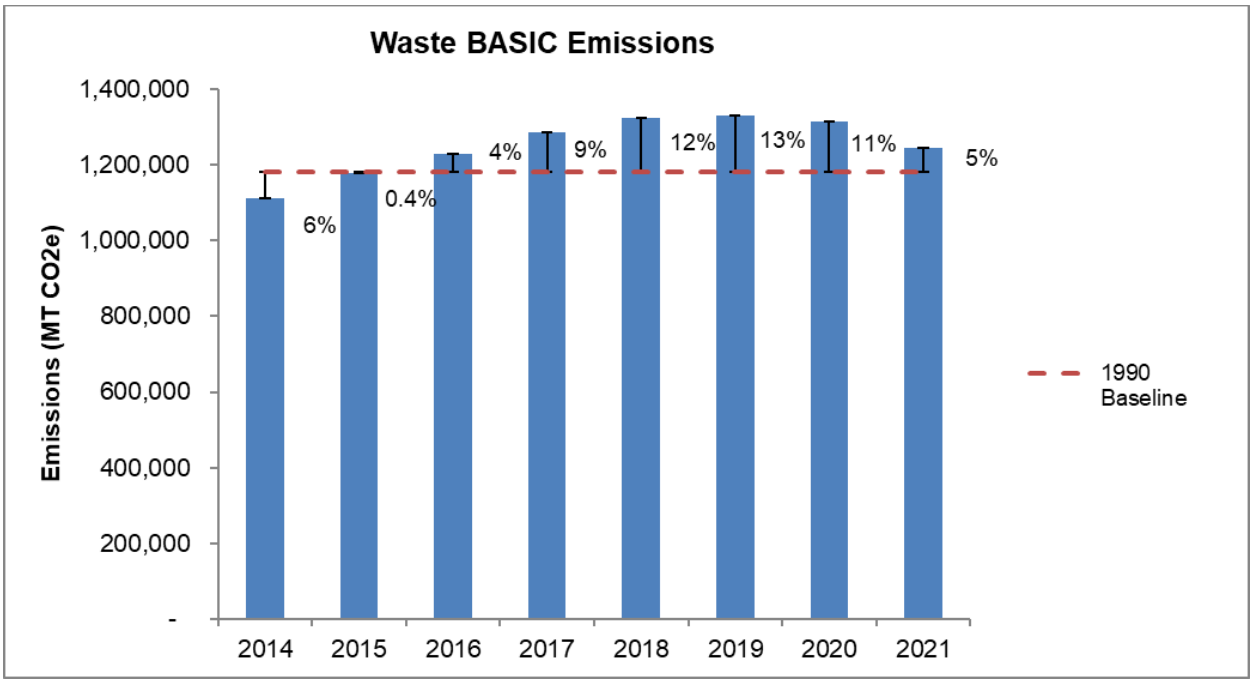
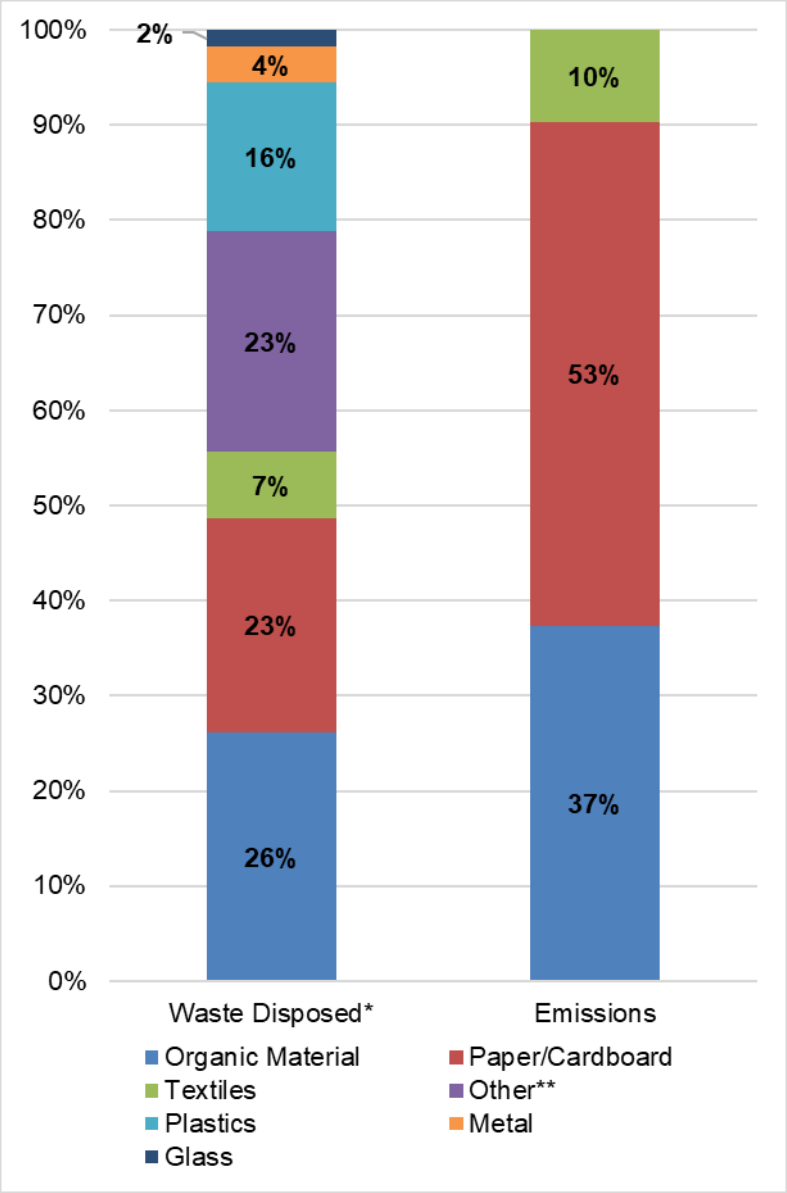


Figure 8. BASIC Waste Sector Emissions Reductions from Baseline

Solid waste emissions are mostly determined by the composition of waste since different types of waste generate different amounts of GHGs based on their degradable organic content (DOC). Paper and cardboard constitute 23% of the City's waste but are the largest contributor of the City's landfilled waste emissions at 53%. Organic waste is the largest waste component at 26% and is the second largest emissions contributor at 37%. Together, these two categories account for 90% of the City's total landfilled waste emissions.[5]

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



*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.

Figure 9. Landfilled Waste Characterization vs. Emissions

3.4 Agriculture, Forestry, and Other Land Use

The AFOLU sector includes GHG emissions from land-use changes, methane produced in the digestive processes of livestock, and nutrient management for agricultural purposes. AFOLU emissions are only required for BASIC+, and therefore not included in the City's BASIC emissions total. Agriculture, forestry, and other flora also act as carbon sinks, meaning they absorb more carbon from the atmosphere than they emit. These carbon sequestrations(sinks) are included in the inventories for informational purposes; however, they are not included in net emissions for BASIC+ reporting.

Table 9. AFOLU Emissions by Subsector (MT CO_2e)

		2014	2015	2016	2017	2018	2019	2020	2021
Livestock	Sources	4,418	4,418	4,418	4,418	4,418	4,418	4,418	4,275
Land	Sources	12,165	12,165	12,165	11,581	11,492	11,344	11,286	11,195
	Sinks	(112,706)	(112,736)	(112,541)	(112,797)	(112,827)	(112,539)	(112,733)	(112,752)
Aggregate Emission Sources	Sources	5,616	5,689	3,546	6,018	7,517	32,810	8,681	12,142
	Sinks	(66,620)	(67,360)	(63,510)	(48,416)	(52,521)	(63,253)	(55,858)	(49,388)
	Total	**22,198**	**22,271**	**20,128**	**22,016**	**23,427**	**48,572**	**24,384**	**27,611**

The emissions source in this sector is primarily from synthetic fertilizer, and the increase in emissions in 2021 is driven by an increase in synthetic fertilizer usage (Figure 10). Emissions from 2019 are an outlier.[6] The City's organic waste recycling and healthy soils programs support increasing composting production and application to enhance soil carbon sequestration, while providing additional benefits including water conservation, soil microbial health, erosion control, and air quality benefits. Compost can provide an alternative to using synthetic fertilizers.[7]

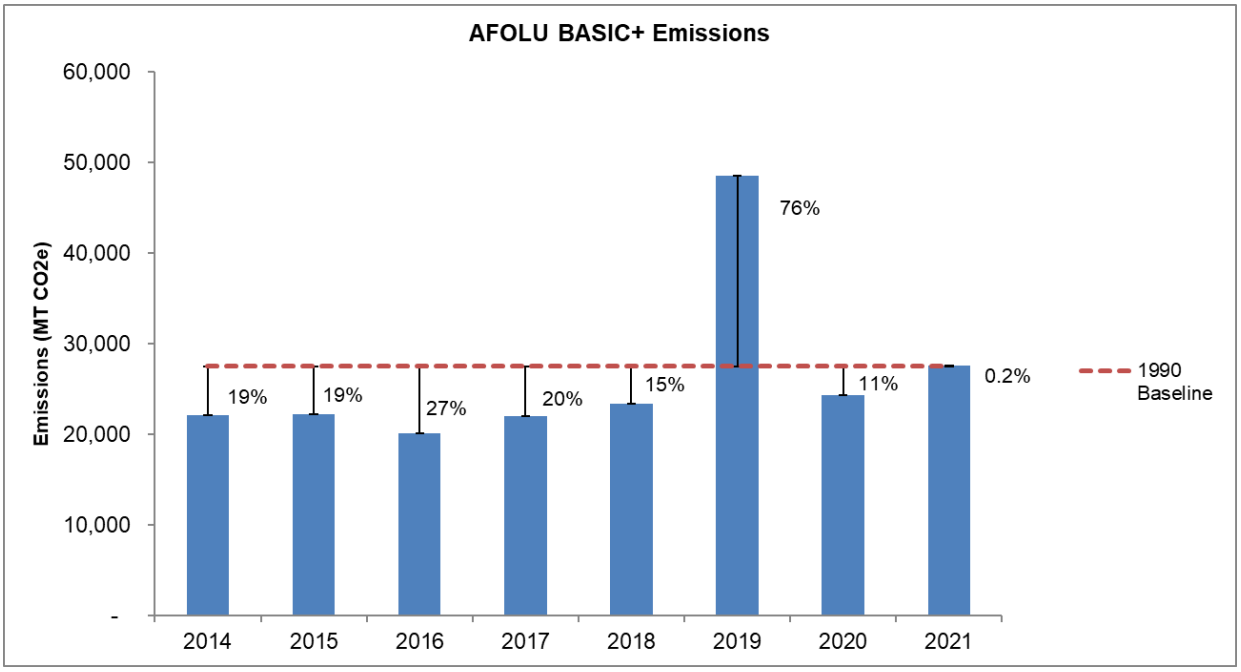


Figure 10. AFOLU Sector Emissions Reductions from Baseline

[6] 2019 emissions increase is from a significant increase in fertilizer usage, as estimated and published by the California Department of Food and Agriculture (CDFA). In communications with CDFA, the agency confirmed the 2019 data.

[7] LA Sanitation and Environment. Healthy Soils Strategy for the City of Los Angeles. https://www.lacitysan.org/san/sandocview?docname=cnt067543

3.5 Industrial Processes and Product Use

The IPPU sector includes emissions from non-energy related industrial processes[8] and product use. Industrial product use comes from substitutes for ozone-depleting substances (ODS), such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), which are used in refrigeration and air conditioning equipment, foam production, fire extinguishing, and aerosols. IPPU emissions are only required for the BASIC+ standard and are not included in the City's BASIC emissions total.

Table 10. IPPU Emissions by Subsector (MT CO_2e)

	Industrial Processes	Product Use	Total IPPU Emissions
2014	-	1,772,880	1,772,880
2015	-	1,861,985	1,861,985
2016	-	1,947,186	1,947,186
2017	-	2,009,193	2,009,193
2018	-	2,050,501	2,050,501
2019	-	2,067,526	2,067,526
2020	-	2,071,828	2,071,828
2021	-	2,108,593	2,108,593

All IPPU emissions come from ODS substitute usage. Over 90% of this sector's emissions are from HFCs and PFCs usage for refrigeration and air conditioning. To reduce this, the City may implement policies for alternative cooling using technologies like "cool roofs" or "cool pavements". California Air Resources Board (CARB) is also working on state regulation to require HFC alternatives with lower global warming potential.

For the product use subsector, in 1990, the chemicals in use were ozone depleting substances (ODS) and not the substitutes for ODS that are tracked and in use today. As a result, the baseline isn't as valuable for comparison which is shown in Figure 11. Additionally, new processes are in use in the production of modern technologies like electronics, that didn't exist in 1990 that produce GHGs. In 1990, IPPU emissions were estimated at 10,000 MT CO2e, while in 2021, this value was calculated at over 2 million MT CO2e. It is more appropriate, therefore, to focus on trying to reduce the current usage regardless of the baseline comparison. Finding alternates to ozone depleting substances is key, whether that's in the form of other chemicals that fill the role, as HFCs and PFCs are now, or new strategies to reduce refrigerant and air conditioning coolant needs.

[8] 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.

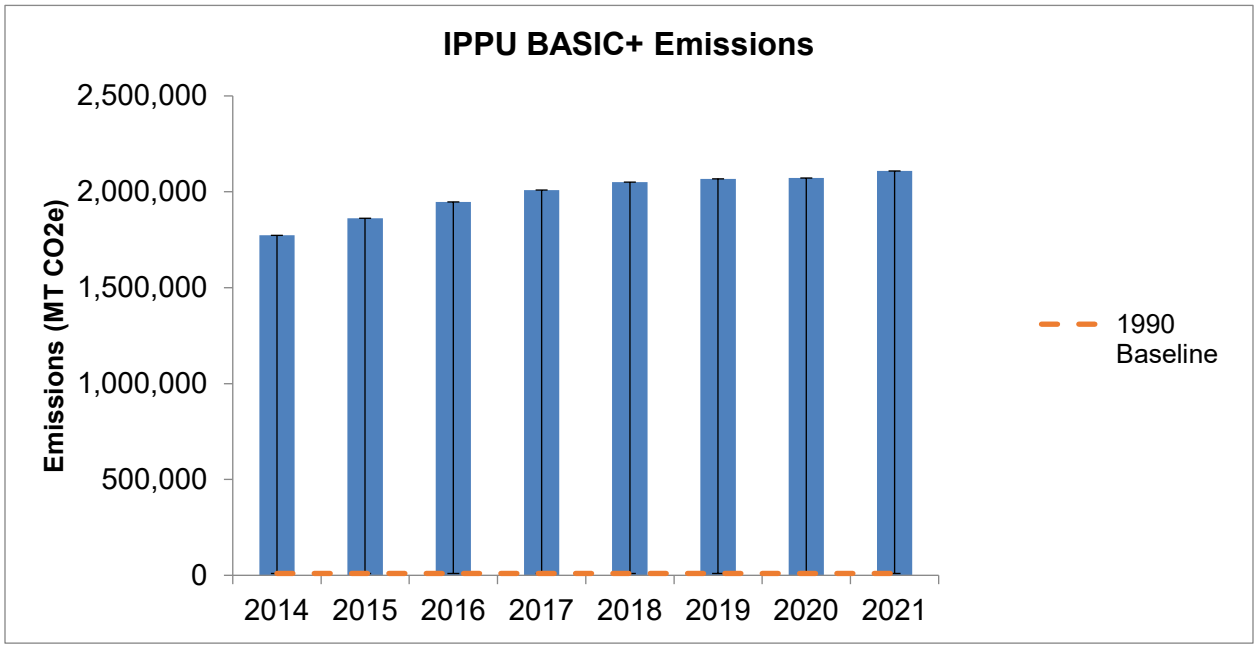


Figure 11. IPPU Sector Emissions Compared to Baseline

4. Conclusion

The City of Los Angeles' community greenhouse gas inventory measures and tracks our progress towards the City's climate goals. Overall, emissions have been decreasing compared to the 1990 baseline, with a reduction of 29% in 2021. The stationary energy sector accounts for the largest portion of emissions and actions to decarbonize the Los Angeles electricity grid by 2035 and decarbonize buildings will play a key role in reducing this sector's emissions. However, it is important to also continue efforts to reduce energy and fuel consumption and increase electrification across all sectors. This can be achieved by improving building energy efficiency, reducing fossil fuel usage at industrial facilities, incentivizing vehicle electrification, and increasing access to public transportation.

It is important to recognize that in 2021, the COVID-19 pandemic impacts from 2020 continued to influence activities occurring within the Community and played a role in some emissions fluctuations seen in the community inventory's transportation and waste sectors.

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. Housed within the Regulatory Affairs Division of LASAN, 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.