

2019

Sustainability Data and Trends Report



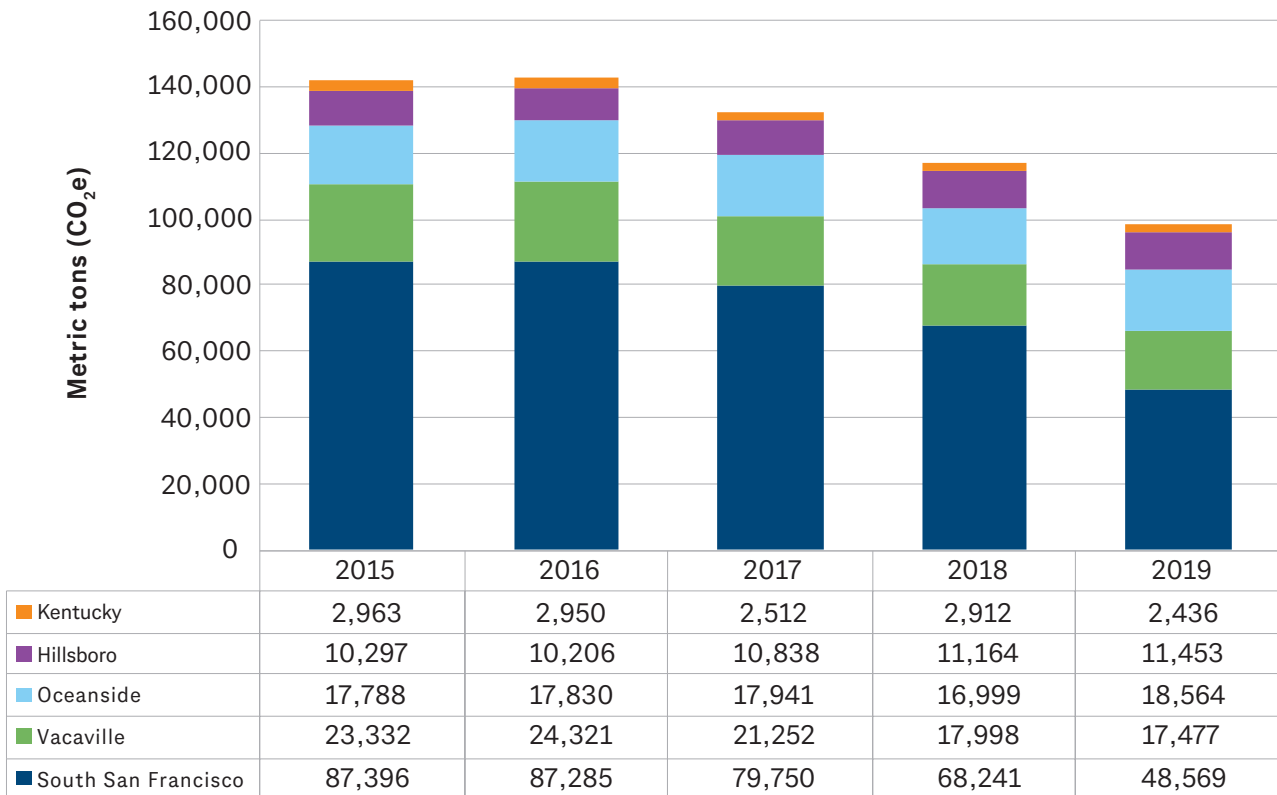
INTRODUCTION

This report provides data and supporting information on Genentech’s company-wide sustainability performance trends, including greenhouse gas emissions from onsite

energy and transportation, water use, and waste to landfill. We also describe our methods and assumptions underlying the reported data.

PERFORMANCE TRENDS

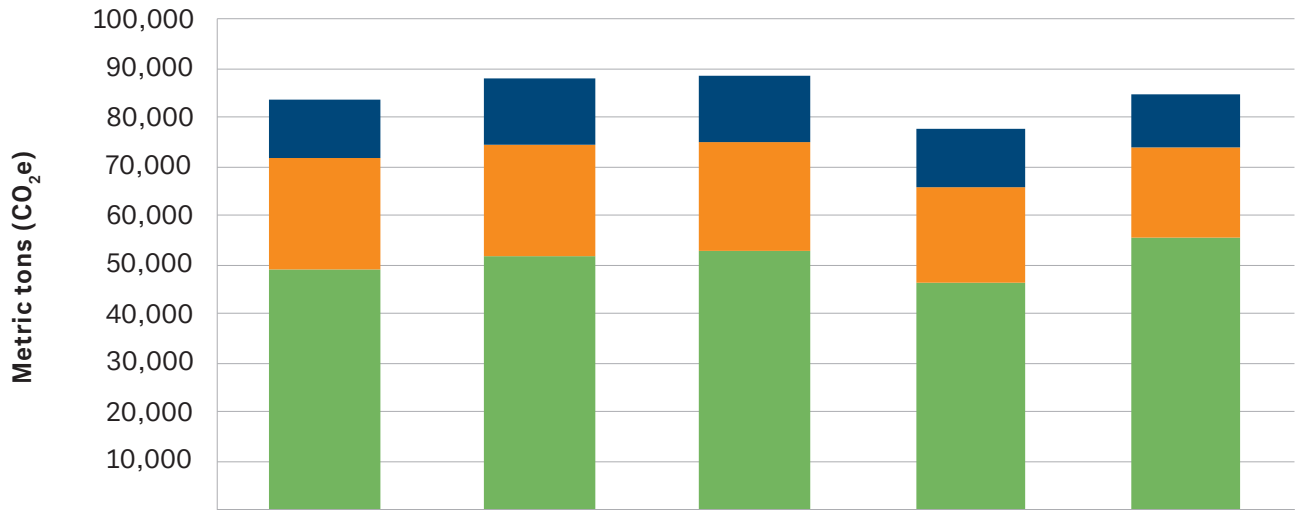
CO₂ from Onsite Energy Use



Onsite energy use is responsible for almost 90% of Genentech’s Scope 1 and 2 greenhouse gas (GHG) emissions. Since 2015, GHG emissions from onsite energy use have decreased by 30%. This has resulted from a combination of energy efficiency measures, our efforts to procure electricity from low and zero carbon sources and onsite solar generation at our Californian sites. In 2019 we used 2% less energy to run our growing research, development and manufacturing operations

while GHG emissions from onsite energy use were down 16%, compared with 2018. Our SSF solar installation is now among the biggest installations in the Bay Area at 6 MW with 16,000 panels. Additionally, in 2019 the SSF campus met a higher percentage of its electricity needs through low and zero carbon sources purchased from our electricity suppliers. As a result of these changes, 80% of the SSF campus’ total electricity demand was met by renewable sources in 2019, up from 65% in 2018.

CO₂ from Transportation

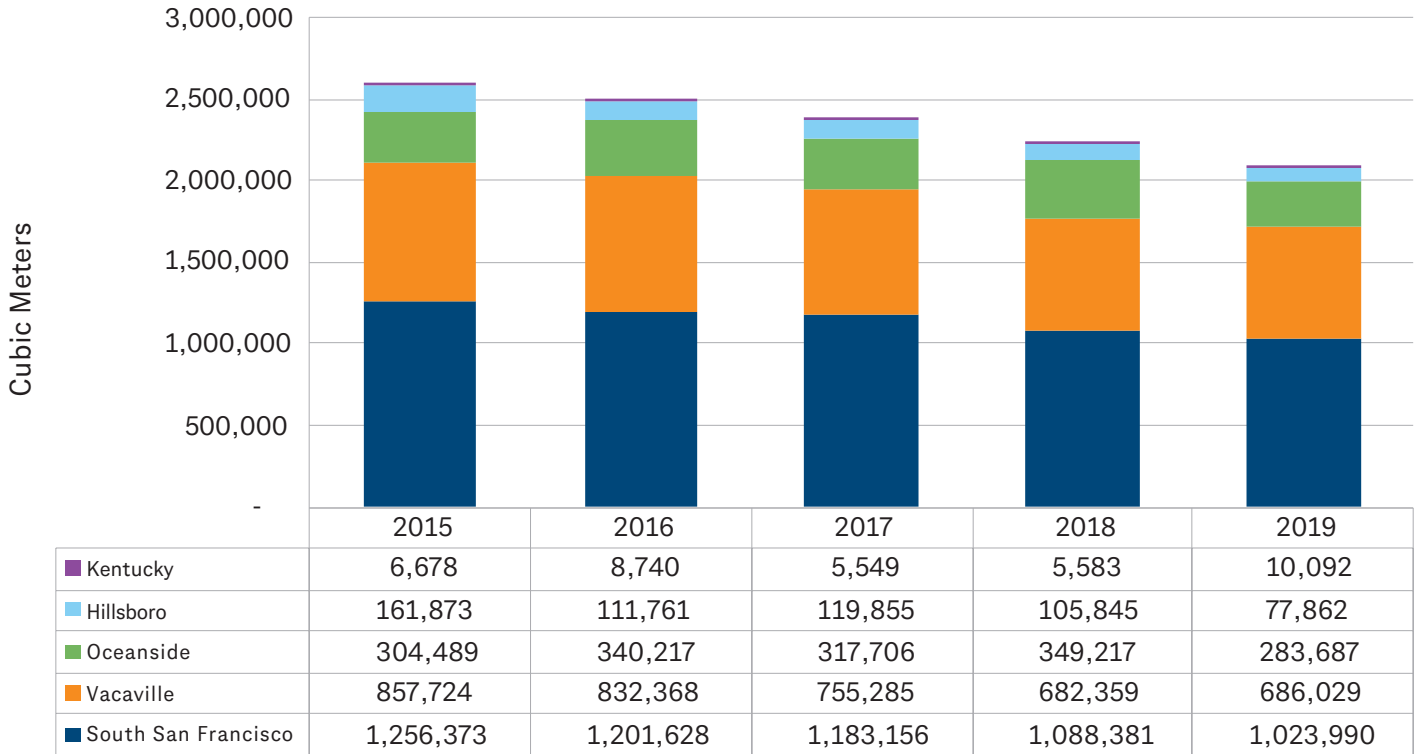


	2015	2016	2017	2018	2019
■ Vehicle fleet	11,798	13,402	13,748	11,649	10,913
■ Employee Commute (SSF)	22,899	22,979	21,996	19,675	18,154
■ Air Travel	48,736	51,490	52,781	46,288	55,446

Our transportation emissions are an important component of our overall carbon footprint and we are committed to reducing these emissions. CO₂ emissions from transportation include the vehicle fleet used by our sales employees, business air travel and our employees' commute activities. Emissions from our vehicle fleet and employee commute decreased in 2019 while our business air travel increased, with a resulting 8% increase in total emissions from transportation. Business air travel is the biggest contributor to our transportation emissions (65% in 2019) and it has proven to be the most challenging to address. Reducing air travel is an important priority for our sustainability program - we are investing in virtual meeting technologies and working to increase employee visibility around our collective and individual air travel impacts, including through a new internally developed app that enables individuals and groups to track their air travel trends and impacts over time. In 2019, we

saw our SSF campus total commute emissions drop by 8% compared to 2018. This continues the trend since 2010 that has seen total commute emissions reduced by 30% and emissions per employee reduced by 48%. The 2018 to 2019 decrease in total commute emissions as well as the general downward trend of emissions per employee is due in large part to the popularity of our GenenBuses both as a primary means of commute and as a connection to other transit. We are adding fully electric commuter buses to our fleet, in support of our EV100 commitment to electrify our vehicle fleet. The 6% decrease in vehicle fleet emissions in 2019 was driven primarily by a reduction in the distance traveled by our commercial sales fleet. Fuel efficiency is an important criterion for the group responsible for selecting vehicles for inclusion in our Leased Vehicle program and a range of hybrids have been made available to employees in this program.

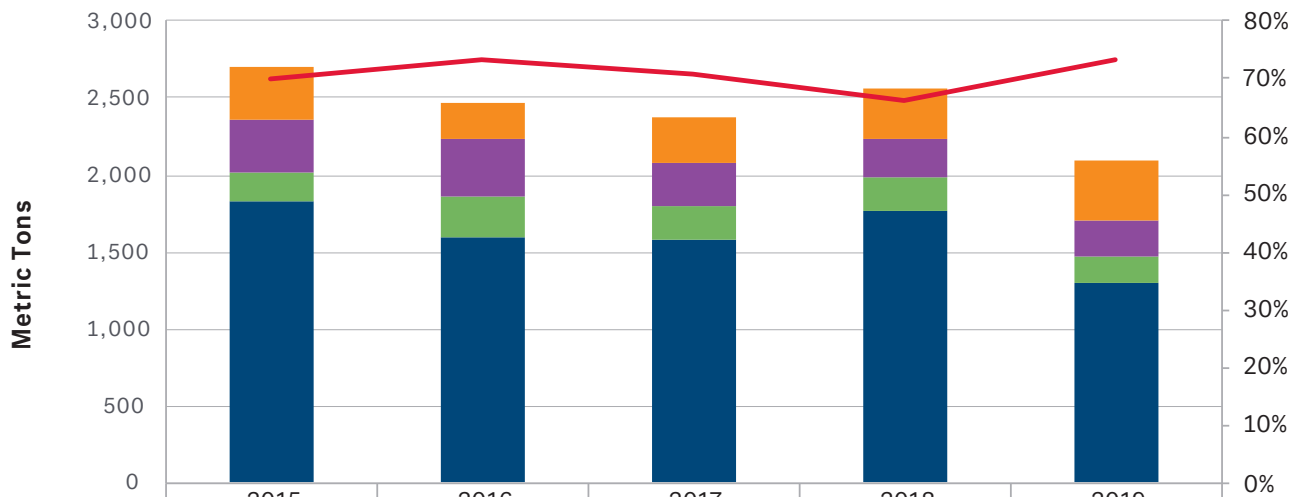
Water Use by Site



Our efforts to conserve water have resulted in a 20% reduction in water use since 2015 and a 7% reduction in 2019 compared to 2018. Manufacturing operations at our SSF, Vacaville and Oceanside facilities account for approximately 95% of our total water use and we emphasize water reduction initiatives at our manufacturing sites in California, a region that is predicted to experience ongoing frequent and prolonged periods of water quantity and quality challenges. The SSF campus which is responsible for 50% of our total water use achieved a 6% reduction in potable water use in 2019, driven in part by a substantial increase in the internal reuse of a process wastewater stream. Since 2015, water use reductions at our Vacaville and

Oceanside sites have been driven by changes in our manufacturing environment and water conservation projects, including xeriscaping to reduce water used for irrigation. Building on these reductions, we are committed to further reducing our potable water use. We are implementing longer-term solutions to reuse and recycle water internally and we expect the expansion of such solutions to drive water savings over the next several years, making us more resilient to a future that could result in supply challenges due to longer and more severe periods of drought. For example, we have installed purple pipes throughout our SSF campus to enable reclaimed water to be transported for internal reuse as it becomes available.

Landfill Waste by Site



	2015	2016	2017	2018	2019
Hillsboro	349	235	301	338	386
Kentucky	0	0	0	0	0
Oceanside	340	376	278	252	232
Vacaville	189	267	206	204	179
South San Francisco	1,824	1,589	1,588	1,774	1,297
Diversion Rate	70%	73%	71%	66%	73%

Our largest campus in SSF is responsible for 74% of our total general waste. SSF has decreased total landfill by 57% and 59% per employee since 2010. Following a challenging year in 2018, this site delivered a substantial reduction in landfill waste in 2019 thanks to its efforts to improve and expand waste segregation for recycling and composting. This coupled with similar activities at our two other Californian manufacturing sites resulted in an improvement in the Genentech wide diversion rate to 73% in 2019. We successfully diverted 12.7 million pounds of compostable and recyclable material from landfill in 2019. We are thinking creatively about waste as a resource – expanding our internal materials re-use

program, partnering with local institutions to donate raw materials we no longer need, and collaborating with other companies in the Bay Area on zero waste opportunities, including through our involvement in the Business Council for Climate Change Zero Waste working group. While our Hillsboro site saw an increase in landfill in 2018 and 2019, a new materials staging area will enable this facility to divert more waste from landfill in future years. Our Kentucky distribution center sends all general waste off site for recycling or incineration with energy recovery.

2014–2019 ENVIRONMENTAL SUSTAINABILITY DATA

	Units	2015	2016	2017	2018	2019
Onsite Energy Use	1000 GJ					
Stationary Combustion		1,125	1,158	1,173	1,152	1,121
Purchased Electricity		1,117	1,093	1,019	947	935
Onsite Renewables Generation		2.4	16.3	61.7	105.9	107.8
Total Energy Use		2,244	2,267	2,254	2,205	2,164
Scope 1 & 2 GHG Emissions	Metric tons CO₂e					
Stationary Combustion		61,983	63,874	64,673	63,479	61,780
Purchased Electricity - Location		93,218	91,664	71,878	67,788	63,436
Purchased Electricity - Market		79,793	78,717	67,620	53,836	36,718
Vehicle Fleet (onsite and sales fleet)		11,798	13,402	13,748	11,649	10,913
Emissions from HFC Refrigerants		1,777	3,883	1,712	1,950	3,242
Process Gases		1,178	1,178	1,178	1,178	1,178
Total Scope 1 & 2 (location) GHG Emissions		169,954	174,001	153,189	146,004	140,550
Total Scope 1 & 2 (market) GHG Emissions		156,530	161,054	148,931	132,092	113,832
Scope 3 GHG Emissions	Metric tons CO₂e					
Business Travel (Air)		48,736	51,490	52,781	46,288	55,446
Employee Commuting (SSF only)		22,899	22,979	21,996	19,675	18,154
Non-GHC Emissions to Air	Metric tons R-11e					
Ozone-Depleting Substances		0.01	0.02	0.02	0.01	0.02
Total Water Use	m³	2,587,137	2,494,714	2,381,551	2,231,385	2,081,660
General Waste	Metric tons					
Landfill		2,702	2,466	2,373	2,568	2,095
Recycling		3,547	3,453	3,185	2,976	3,072
Composting		2,453	2,909	2,119	1,860	2,410
e-waste		297	347	409	144	132
Incineration with energy recovery		7	7	13	42	124
Total General Waste		9,006	9,182	8,098	7,589	7,832
Recovery Rate (General Waste)	%	70%	73%	71%	66%	73%

NOTES TO SUPPORT OUR DATA

General Notes

The data presented in this report are for the following production and fill/finish facilities: South San Francisco, Vacaville and Oceanside, California, and Hillsboro, Oregon. The data also include the research, development, commercial and administrative offices at our South San Francisco headquarters and our Louisville, Kentucky distribution facility. This report includes data from 2015 to 2019 for all facilities. The annual Roche internal reporting timeline is in November and requires reporting of Jan-Oct data, extrapolated to provide a full year estimate. In general, the reported data are extrapolated in line with Roche policy, with a few exceptions where forecasting is used in place of extrapolation or 12 months of actual data is reported. This report does not include performance data for joint ventures or outsourced operations, nor does it include data for sales offices. No data are shown for buildings that Genentech leases out to other parties. Data are reported for new owned facilities and buildings from the point at which Genentech becomes responsible for payment of utilities and other services, such as waste disposal. Data are reported for new leased buildings from the point at which the building becomes occupied by Genentech.

All figures in the data table, with the exception of figures less than 1, are rounded to the nearest whole number. Due to this rounding, the individual elements of the data table may not always add up to the totals. All electricity, natural gas and water data are based on meter readings provided by our utility vendors.

Greenhouse Gas Emissions

The greenhouse gases included in the reported data are carbon dioxide, methane, nitrous oxide and hydrofluorocarbons. The GHG emissions data are reported as CO₂ equivalents (CO₂e). Small emission sources (i.e. those accounting for <1% of the total emissions) are held flat from 2015-2019.

Greenhouse Gas Emissions from Energy Use

In order to align with the WRI GHG Protocol Scope 2 guidance published in January 2015, we have calculated our 2015-2019 purchased electricity emissions per the location- and market-based methods. The data presented in our Data Table and in our GHG emissions graphs follow the market-based method. Our location-based emissions are presented in the table below.

Scope 2 Location-Based Emissions

	2015	2016	2017	2018	2019
Scope 2 location-based emissions (metric tons CO ₂ e)	93,218	91,664	71,878	67,788	63,436

¹ South San Francisco electricity and natural gas use

² South San Francisco water use (actual data reported for full calendar year) and air travel (data is for 1 October - 30 September)

ELECTRICITY-RELATED EMISSION FACTORS — LOCATION-BASED EMISSION FACTORS

SITE	YEAR	EMISSION FACTOR	SOURCE
SOUTH SAN FRANCISCO, VACAVILLE, OCEANSIDE, CALIFORNIA	2019	496.5 lb CO ₂ /MWh	US EPA eGRID2018, March 2020 Regional emission factors for WECC California (CAMX)
		0.034 lb CH ₄ /MWh	
		0.004 lb N ₂ O/MWh	
	2017-2018	527.9 lb CO ₂ /MWh	US EPA eGRID2016, Feb 2018 Regional emission factors for WECC California (CAMX)
		0.033 lb CH ₄ /MWh	
		0.004 lb N ₂ O/MWh	
	2015-2016 ³	650.31 lb CO ₂ /MWh	US EPA eGRID2012, Oct 2015 Regional emission factors for WECC California (CAMX)
		0.031 lb CH ₄ /MWh	
		0.006 lb N ₂ O/MWh	
	2014	610.82 lb CO ₂ /MWh	US EPA eGRID 9th Edition (2010 data) Regional emission factors for WECC California (CAMX)
		0.029 lb CH ₄ /MWh	
		0.006 lb N ₂ O/MWh	
HILLSBORO, OREGON	2019	639 lb CO ₂ /MWh	US EPA eGRID2018, March 2020 Regional emission factors for WECC Northwest (NWPP)
		0.064 lb CH ₄ /MWh	
		0.009 lb N ₂ O/MWh	
	2017-2018	651.2 lb CO ₂ /MWh	US EPA eGRID2016, Feb 2018 Regional emission factors for WECC Northwest (NWPP)
		0.061 lb CH ₄ /MWh	
		0.009 lb N ₂ O/MWh	
	2015-2016	665.75 lb CO ₂ /MWh	US EPA eGRID2012, Oct 2015 Regional emission factors for WECC Northwest (NWPP)
		0.013 lb CH ₄ /MWh	
		0.010 lb N ₂ O/MWh	
	2014	842.58 lb CO ₂ /MWh	US EPA eGRID 9th Edition (2010 data) Regional emission factors for WECC Northwest (NWPP)
		0.016 lb CH ₄ /MWh	
		0.013 lb N ₂ O/MWh	
LOUISVILLE, KENTUCKY	2019	1031.5 lb CO ₂ /MWh	US EPA eGRID2018, March 2020 Regional emission factors for SERC Tennessee Valley (SRTV)
		0.097 lb CH ₄ /MWh	
		0.014 lb N ₂ O/MWh	
	2017-2018	1185.40 lb CO ₂ /MWh	US EPA eGRID2016, Feb 2018 Regional emission factors for SERC Tennessee Valley (SRTV)
		0.093 lb CH ₄ /MWh	
		0.017 lb N ₂ O/MWh	
	2015-2016	1337.15 lb CO ₂ /MWh	US EPA eGRID2012, Oct 2015 Regional emission factors for SERC Tennessee Valley (SRTV)
		0.017 lb CH ₄ /MWh	
		0.021 lb N ₂ O/MWh	
	2014	1389.20 lb CO ₂ /MWh	US EPA eGRID 9th Edition (2010 data) Regional emission factors for SERC Tennessee Valley (SRTV)
		0.018 lb CH ₄ /MWh	
		0.022 lb N ₂ O/MWh	

³ A significant methodology change was made for assigning plants to eGRID subregions in eGRID2014, resulting in large changes in subregion emission factors. Whereas, in eGRID2012 and earlier, plants were assigned based on the utility company/ territory that they supplied, in eGRID2014 plants were assigned based on geography where they are physically located. Because the U.S. EPA, at the time, was considering reverting back to the previous methodology, Genentech elected to use eGRID2012 to calculate 2015-2016 Scope 2 location-based emissions for all U.S. operations. In Feb. 2018, the EPA did revert back to the previous methodology for eGRID 2016.

MARKET-BASED EMISSION FACTORS

SITE	YEAR	LB CO ₂ /MWH	SUPPLIER SPECIFIC EMISSION FACTORS
South San Francisco, CA	2018-2019	294	
(PG&E Contract) and	2016-2017	435	PG&E
Vacaville, CA	2014-2015	427	
	2019	130	
South San Francisco, CA	2018	142	PCE
(Peninsula Clean Energy)	2017	189	
South San Francisco, CA	2018	423	
(Silicon Valley Power)	2017	666	Silicon Valley Power
Oceanside, CA	2015-2019	630	SDG&E
Hillsboro, OR	2018-2019	884	PGE
	2016-2017	897	

SITE	YEAR	LB CO ₂ /MWH	RESIDUAL MIX EMISSION FACTORS
	2019	0.00	
South San Francisco, CA	2018	804.68	Green-E - WECC NERC Region
(Direct Access contract)	2017	903.92	
	2016	889.08	
	2015	960.73	

Louisville, KY 2015-2019 Location based emission factors used as these are higher than the available residual mix emission factors. See Location Based Emission Factors table

SITE	YEAR	LB CO ₂ /MWH	ENERGY CONTRACT FACTORS
South San Francisco, CA	2019	857	
(Fuel Cells)	2018	836	Bloom Energy
	2016-2017	754	

NATURAL GAS-RELATED EMISSION FACTORS

SITE	YEAR	T CO ₂ /GJ	SOURCE
All Sites	2015-2019	0.055	Roche SHE Reporting Guidelines

DIESEL-RELATED EMISSION FACTORS

SITE	YEAR	T CO ₂ /GJ	SOURCE
All Sites	2015-2019	0.074	Roche SHE Reporting Guidelines

**GLOBAL WARMING POTENTIALS (GWP)
USED TO CALCULATE CO₂E**

YEAR	SOURCE
2015-2019	Intergovernmental Panel on Climate Change (IPCC) (2007); Fourth Assessment Report

In 2017, we updated emission factors for stationary combustion (natural gas and diesel) back to 2015 to ensure that the associated GHG values reported internally via Roche, and that roll up into Roche’s external reporting are consistent with the data reported externally by Genentech. As a result, we have restated GHG emissions from natural gas and diesel back to 2015.

Greenhouse Gas Emissions from Vehicle Fleet

This category comprises emissions from the Genentech commercial fleet, onsite security vehicles and our SSF campus shuttle buses. Emissions from non-sales road business travel by employees (a scope 3 emission source) have not been included in the reported data.

The commercial fleet includes both employee-owned vehicles and vehicles leased by Genentech. In the case of employee-owned vehicles, fleet mileage is calculated from employee expense claims, and gallons are calculated using an average fuel economy. The average fuel economy value is obtained from annual employee surveys. In the case of leased vehicles and onsite vehicles, actual fuel use data is tracked in and extracted from a proprietary database.

2015-2019 greenhouse gas emissions were calculated using emission factors of 0.069 tons CO₂ / GJ for gasoline and 0.074 tons CO₂/GJ for diesel. These are the emission factors used across the Roche organization.

GWPs from methane and nitrous oxide from combustion of gasoline and diesel are as shown in the Greenhouse Gas Emissions from Energy Use section above.

Greenhouse Gas Emissions from HFC Gases

This category includes emissions from stationary air conditioning, cooling and fire suppression equipment.

For 2015-2019, the reported data are based on leak reports generated during servicing and maintenance.

**GLOBAL WARMING POTENTIALS (GWP) USED TO
CALCULATE CO₂E FROM HFCS**

YEAR	SOURCE
2015-2019	Intergovernmental Panel on Climate Change (IPCC) (2007); Fourth Assessment Report

Greenhouse Gas Emissions from Process Gases

CO₂ emissions from dry ice and liquid and gas CO₂, were estimated in 2008 using purchase data from vendors. In the absence of standard calculation methods, Genentech assumes that 100% of the CO₂ used for these purposes is vented to the atmosphere. As these gases are a small source, the 2008 emissions have been held flat for 2015-2019.

GHG emissions from Genentech’s use of CH₄ and N₂O in manufacturing and research and development were also calculated in 2008 using vendor purchase data and US EPA Climate Leaders emission factors. Emissions are reported as CO₂ equivalents and have been held flat for 2015-2019 as they are also a small source.

Greenhouse Gas Emissions from Business Travel (Air)

Air travel includes the use of commercial aircraft for business travel. Genentech does not own, operate or charter private aircraft.

The air travel data present CO₂ emissions arising from flights made by Genentech employees, which were booked through Genentech’s official travel agencies. Travel booked through alternative means is not included. Air travel CO₂ values have been revised for 2015 and 2016 to remove double counting of rescheduled flights in the raw flight data originally used to calculate the values for these years.

GWPs for methane and nitrous oxide are as shown in the Energy Use section above.

Air travel greenhouse gas emissions are calculated using an emission factor of 0.071 tons CO₂ / GJ which is the emission factor used across the Roche organization.

Greenhouse Gas Emissions for Employee Commute

Employee commuting emissions estimates are based on how Genentech employees travel to work. Employee mode splits were established using cordon counts at campus points of entry. These data are supported by additional information related to the Genentech shuttle fleet and data available from third parties, such as emission factors for local public transit providers including Bay Area Rapid Transit (BART), Caltrain, and the Oyster Point Ferry. The model used to estimate employee commute emissions is updated and refined as better data and more detailed information becomes available.

The 2019 estimates include:

- Updated commute mode share based on the 2019 Fall Commute Study at the South San Francisco campus
- Updated vehicle emissions factors based on updates to US Department of Energy guidance
- Updated number of employees – including those working on campus, working remotely, on business travel, or offsite for other reasons
- GenenBus annual fuel consumption for 2019

Non-GHG Emissions to Air

Ozone Depleting Substances (ODS)

This category includes emissions of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbon (HCFCs) gases from stationary air conditioning, cooling and fire suppression equipment.

The reported data are taken from leak reports generated during servicing and maintenance.

In accordance with the Global Reporting Initiative reporting guidelines, we have reported CFC and HCFC releases as R-11 equivalents, using the ozone depletion potentials below.

GAS NAME	ODP	SOURCE
R-11	1.0	http://www.epa.gov/ozone/science/ods/classone.html
R-22	0.055	http://www.epa.gov/ozone/science/ods/classtwo.html
R-123	0.02	
R-502	0.25	http://www.uneptie.org/ozonaction/topics/hcfcblends.htm

Water Use

Water use is the withdrawal of potable water from municipal sources. It would also include water withdrawn directly from surface and/or groundwater resources which is currently not applicable to Genentech.

Grey water sourced from internal and external sources as well as collected rainwater are not included.

General Waste

General waste includes landfill, recyclables, compostables like food waste, yard waste, and bioplastics. Our recycling streams include lab plastics, paper, cardboard, bottles and cans, heavy plastics, amber glass, styrofoam, metals, toner cartridges, and other items. In 2019 SSF began sending a portion of non-recyclable lab plastics to a local waste to energy facility. General waste excludes construction wastes as well as wastes that are managed by the Genentech Environmental, Health and Safety group, due to their regulated and/or hazardous nature, and any materials donated or reused.

Where available, the general waste data is based on actual weights provided by the vendor. Where this data is not available weights are estimated using a standard assumed weight per container multiplied by the number of container pick-ups during the reporting year.

We show recycled electronic waste as an individual line item in the General Waste category. Included are non-working electronic items that were not able to be donated or repaired, such as computers, monitors, keyboards, lab equipment, and cell phones.