

University of California, Irvine Detail Report - Control (Private)

Complete Inventory 2016

Description:

Industry: 61 - Educational Services

Address: 201-A Facilities Management Building
Irvine, California US

Contact:
Kurt Heinze
kheinze@uci.edu

Website:

Reporting Information

Reporting Protocol: General Reporting Protocol 2.1 and associated updates and clarifications

GWP Standard: AR5

Base Year:

Consolidation Methodology: Financial Control Only

Status: Draft

Verification Information

Verification Body: Ruby Canyon Engineering Inc.

Level of Assurance: Reasonable

Entity Emissions | Total in metric tons of CO2e

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t of CO ₂ e)	N ₂ O (t of CO ₂ e)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t of CO ₂ e)	SF ₆ (t of CO ₂ e)
Stationary Combustion	84,316.676654	83,975.489236	298.972552	42.214866	0	0	0	0
Mobile Combustion	2,085.836201	2,058.273699	4.679784	22.882718	0	0	0	0
Process	81.94	50	0.14	31.8	0	0	0	0
Fugitive	2,867.290719	36	0	927.5	889.178219	0	0	1,014.6125
Total	89,351.743574	86,119.762936	303.792336	1,024.397584	889.178219	0	0	1,014.6125
NetTotal	89,351.743574	86,119.762936	303.792336	1,024.397584	889.178219	0	0	1,014.6125

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t of CO ₂ e)	N ₂ O (t of CO ₂ e)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t of CO ₂ e)	SF ₆ (t of CO ₂ e)
Purchased Electricity - Location Based	12,664.778877	12,620.679745	20.571308	23.527824	0	0	0	0
Total	12,664.778877	12,620.679745	20.571308	23.527824	0	0	0	0
Applied Offsets	-6,123.18885	-6,121.76404	-0.66464	-0.76017	0	0	0	0
NetTotal	6,541.590027	6,498.915705	19.906668	22.767654	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t of CO ₂ e)	N ₂ O (t of CO ₂ e)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t of CO ₂ e)	SF ₆ (t of CO ₂ e)
Purchased Electricity - Market Based	12,534.612697	12,487.596674	21.862747	25.153276	0	0	0	0
Total	12,534.612697	12,487.596674	21.862747	25.153276	0	0	0	0
Applied Offsets	-6,123.18885	-6,121.76404	-0.66464	-0.76017	0	0	0	0
NetTotal	6,411.423847	6,365.832634	21.198107	24.393106	0	0	0	0

Biogenic - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t of CO ₂ e)	N ₂ O (t of CO ₂ e)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t of CO ₂ e)	SF ₆ (t of CO ₂ e)
Mobile Biomass Combustion	135.33723	135.33723	0	0	0	0	0	0
Total	135.33723	135.33723	0	0	0	0	0	0
NetTotal	135.33723	135.33723	0	0	0	0	0	0

Biogenic - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t of CO ₂ e)	N ₂ O (t of CO ₂ e)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t of CO ₂ e)	SF ₆ (t of CO ₂ e)
Purchased Electricity - Market Based - Biomass	178.420448	178.420448	0	0	0	0	0	0
Total	178.420448	178.420448	0	0	0	0	0	0
NetTotal	178.420448	178.420448	0	0	0	0	0	0

Optional - Optional Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t of CO ₂ e)	N ₂ O (t of CO ₂ e)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t of CO ₂ e)	SF ₆ (t of CO ₂ e)
Scope 3	46,647.570897	46,309.385742	45.53108	292.654075	0	0	0	0
Total	46,647.570897	46,309.385742	45.53108	292.654075	0	0	0	0
NetTotal	46,647.570897	46,309.385742	45.53108	292.654075	0	0	0	0

Entity Emissions | Total in metric tons of gas

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	84,316.676654	83,975.489236	10.677591	0.159301	0	0	0	0
Mobile Combustion	2,085.836201	2,058.273699	0.167135	0.08635	0	0	0	0
Process	81.94	50	0.005	0.12	0	0	0	0
Fugitive	2,867.290719	36	0	3.5	889.178219	0	0	0.043175
Total	89,351.743574	86,119.762936	10.849726	3.865651	889.178219	0	0	0.043175

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	12,664.778877	12,620.679745	0.73469	0.088784	0	0	0	0
Total	12,664.778877	12,620.679745	0.73469	0.088784	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	12,534.612697	12,487.596674	0.780812	0.094918	0	0	0	0
Total	12,534.612697	12,487.596674	0.780812	0.094918	0	0	0	0

Biogenic - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Mobile Biomass Combustion	135.33723	135.33723	0	0	0	0	0	0
Total	135.33723	135.33723	0	0	0	0	0	0

Biogenic - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based - Biomass	178.420448	178.420448	0	0	0	0	0	0
Total	178.420448	178.420448	0	0	0	0	0	0

Optional - Optional Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Scope 3	46,647.570897	46,309.385742	1.62611	1.104355	0	0	0	0
Total	46,647.570897	46,309.385742	1.62611	1.104355	0	0	0	0

Simplified Estimation Methods (SEMs)

	Total Estimated CO ₂ e (t)	Total Emissions (t of CO ₂ e)	Estimated CO ₂ e as a Percentage of Total*
Location Based	1,914.836762	102,151.859681	1.87450014953356%
Market Based	1,914.836762	102,200.11395	1.8736150953956%

*Total based on scope 1, scope 2 & biomass emissions

Facility Emissions | Arroyo Vista Housing

Equity share - 100% | Entity controls the facility emissions - Yes

201-A Interim Office Building, Irvine, California, 92697-5444, US

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	219.612539	218.92556	0.02063	0.000413	0	0	0	0
Total	219.612539	218.92556	0.02063	0.000413	0	0	0	0

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	283.573441	282.58603	0.01645	0.001988	0	0	0	0
Total	283.573441	282.58603	0.01645	0.001988	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	283.573441	282.58603	0.01645	0.001988	0	0	0	0
Total	283.573441	282.58603	0.01645	0.001988	0	0	0	0

Source Emissions | Combustion of Natural Gas

41,260 therms

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	41,260 therm	53.06 kg/MMBtu	2017 Default Emission Factors - Table #12.1	218.92556	218.92556
Stationary Combustion	CH4	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	41,260 therm	5 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.02063	0.57764
Stationary Combustion	N2O	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	41,260 therm	0.1 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.000413	0.109339

Source Emissions | Purchased Electricity - Location Based

Arroyo Vista Housing purchased 1,095,664 kWh from Southern California Edison during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	1,095,664.46 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	282.58603	282.58603
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	1,095,664.46 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.01645	0.460606
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	1,095,664.46 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.001988	0.526805

Source Emissions | Purchased Electricity - Market Based

1,095,664 kWh. The market based emissions are the same as the location since no RECs were purchased for Arroyo Vista Housing in 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	1,095,664.46 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	282.58603	282.58603
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	1,095,664.46 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.01645	0.460606
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	1,095,664.46 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.001988	0.526805

Facility Emissions | Campus Village Apartments

Equity share - 100% | Entity controls the facility emissions - Yes

201-A Interim Office Building, Irvine, California, 92697, US

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	163.203094	162.692572	0.015331	0.000307	0	0	0	0
Total	163.203094	162.692572	0.015331	0.000307	0	0	0	0

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	213.783316	213.038916	0.012402	0.001499	0	0	0	0
Total	213.783316	213.038916	0.012402	0.001499	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	213.783316	213.038916	0.012402	0.001499	0	0	0	0
Total	213.783316	213.038916	0.012402	0.001499	0	0	0	0

Source Emissions | Combustion of Natural Gas

30,662 therms were purchased from Southern California Gas company during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Natural Gas	Residential	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	30,662 therm	53.06 kg/MMBtu	2017 Default Emission Factors - Table #12.1	162.692572	162.692572
Stationary Combustion	CH4	Natural Gas	Residential	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	30,662 therm	5 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.015331	0.429268
Stationary Combustion	N2O	Natural Gas	Residential	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	30,662 therm	0.1 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.000307	0.081254

Source Emissions | Purchased Electricity-Location Based

826,011 kWh of electricity were purchased from Southern California Edison during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	826,011 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	213.038916	213.038916
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	826,011 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.012402	0.347247
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	826,011 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.001499	0.397153

Source Emissions | Purchased Electricity-Market Based

826,011 kWh of electricity were purchased from Southern California Edison during the 2016 reporting year. The market-based emissions are the same as the location-based since no RECs were purchased for Campus Village Apartments.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	826,011 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	213.038916	213.038916
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	826,011 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.012402	0.347247
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	826,011 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.001499	0.397153

Facility Emissions | Desert Research Center

Equity share - 100% | Entity controls the facility emissions - Yes

401 Tilting T Drive, Borrego Springs, California, 92004, US

Scope 2 - Location Based - Indirect Emissions	Total CO2e (t)	CO2 (t)	CH4 (t)	N2O (t)	HFC (t of CO2e)	PFC (t of CO2e)	NF3 (t)	SF6 (t)
Purchased Electricity - Location Based	5.298827	5.280376	0.000307	0.000037	0	0	0	0
Total	5.298827	5.280376	0.000307	0.000037	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO2e (t)	CO2 (t)	CH4 (t)	N2O (t)	HFC (t of CO2e)	PFC (t of CO2e)	NF3 (t)	SF6 (t)
Purchased Electricity - Market Based	5.298827	5.280376	0.000307	0.000037	0	0	0	0
Total	5.298827	5.280376	0.000307	0.000037	0	0	0	0

Source Emissions | Purchased Electricity-Location Based

The Desert Research Facility purchased 20,473 kWh of electricity during 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	20,473.48 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	5.280376	5.280376
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	20,473.48 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.000307	0.008607
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	20,473.48 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.000037	0.009844

Source Emissions | Purchased Electricity-Market Based

The Desert Research Facility purchased 20,473 kWh during the 2016 reporting year. The market-based emissions are the same as the location-based emissions due to RECs being purchased for this facility.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	20,473.48 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	5.280376	5.280376
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	20,473.48 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.000307	0.008607
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	20,473.48 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.000037	0.009844

Facility Emissions | Main Campus

Equity share - 100% | Entity controls the facility emissions - Yes

201-A Interim Office Building, Irvine, California, 92697-5444, US

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	68,412.084384	68,198.079387	6.419577	0.129271	0	0	0	0
Mobile Combustion	2,043.039614	2,015.968654	0.164612	0.084762	0	0	0	0
Process	81.94	50	0.005	0.12	0	0	0	0
Fugitive	1,048.170719	0	0	0	879.558219	0	0	0.007175
Total	71,585.234717	70,264.048041	6.589189	0.334033	879.558219	0	0	0.007175

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	894.845553	891.729674	0.05191	0.006273	0	0	0	0
Total	894.845553	891.729674	0.05191	0.006273	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	764.679373	758.646603	0.098033	0.012407	0	0	0	0
Total	764.679373	758.646603	0.098033	0.012407	0	0	0	0

Biogenic - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Mobile Biomass Combustion	135.33723	135.33723	0	0	0	0	0	0
Total	135.33723	135.33723	0	0	0	0	0	0

Biogenic - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based - Biomass	178.420448	178.420448	0	0	0	0	0	0
Total	178.420448	178.420448	0	0	0	0	0	0

Optional - Optional Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Scope 3	34,834.46666	34,626.144325	0.93563	0.687263	0	0	0	0
Total	34,834.46666	34,626.144325	0.93563	0.687263	0	0	0	0

Source Emissions | Air Travel Paid by University

In previous reporting years, Clean Air Cool Planet calculator from 2013 (Version 6.5) was used as the basis and a ratio of current emission year to 2013 emission year was used to determine the GHG emissions. In 2013, the University of New Hampshire took over and rebranded it as Carbon Campus Calculator (CCC). The values reported above were calculated using the most recent version of CCC (v9.0). The CCC defaults to AR4 global warming potentials. I updated them to AR5 GWP.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO ₂ e (t)
Scope 3 (Optional)	CO ₂	N/A	All	Unspecified Technology	PreCalculated	No		N/A				22,582.717615	22,582.717615
Scope 3 (Optional)	CH ₄	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.223863	6.268164
Scope 3 (Optional)	N ₂ O	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.257313	68.187945

Source Emissions | Commuting

Calculated by our Parking and Transportation Services group using sample data already collected for regional air board reporting purposes. Data includes faculty and staff commuting, vendors, students, and student employees.

CH4 and N2O were calculated using transportation emission factors from TCR Table 13.9.

CH4 = 12,043.43 MT CO2 x 0.0000591 CH4/CO2 x GWP (28) = 19.929476 MT CO2e

N2O = 12,043.43 MT CO2 x 0.0000357 N2O/CO2 x GWP (265) = 113.93675 MT CO2e

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Scope 3 (Optional)	CO2	N/A	All	Unspecified Technology	PreCalculated	No		N/A				12,043.42671	12,043.42671
Scope 3 (Optional)	CH4	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.711767	19.929476
Scope 3 (Optional)	N2O	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.42995	113.93675

Source Emissions | Electricity Distribution System Operation and Maintenance

Based on measured usage of 15.82 lbs.

$15.82/2204.62 = 0.007175$

Used an insulating gas in 12,000-Volt campus-owned electrical distribution system switches, transformers, and other equipment.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Fugitive	SF6	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.007175	168.6125

Source Emissions | Fleet Fuel Consumption B20 (Biodiesel Portion)

Default factor of 128,000 Btu/gallon for biodiesel

71,607 gallons of B20 consumed, of which 14,321.4 gallons (20%) is B100.

Therefore 1,833.14 MMBtu was used.

14,231.4 gal x 9.45 kg/gal = 134,486.73 kg (134.867 tonnes)

CH4 emissions and N2O emissions were calculated with the #2 Diesel portion.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Mobile Biomass Combustion - Biomass	CO2	Biofuels	Diesel Medium and Heavy-Duty Trucks and Buses	Aftertreatment	Emission Factor	No	Heat Content: 5.38 MMBtu/bbl;	Biodiesel (100%)	14,321.4 gal	9.45 kg/gal	2017 Default Emission Factors - Table #13.1	135.33723	135.33723
Mobile Combustion	CH4	Biofuels	Diesel Medium and Heavy-Duty Trucks and Buses	Aftertreatment	Not Reporting	No	Heat Content: 5.38 MMBtu/bbl;	Biodiesel (100%)	0	0.0051 g/mi		0	0
Mobile Combustion	N2O	Biofuels	Diesel Medium and Heavy-Duty Trucks and Buses	Aftertreatment	Not Reporting	No	Heat Content: 5.38 MMBtu/bbl;	Biodiesel (100%)	0	0.0048 g/mi		0	0

Source Emissions | Fleet Fuel Consumption B20 Biodiesel (Diesel Portion)

Calculated per Table 13.9 of the General Reporting Protocol SEM using CO2 value derived from the total CO2 from both the ULSD and Biodiesel portions of the B20 fuel.

CO2 from fuel consumption = 57,286 (total B20 fuel tank volume in gallons) x 10.21 kg CO2/gal x 1 tonne/1000kg = 584.885976 tonnes.

CH4 CO2e = (125.741892 + 584.885976) x 5.91E-05 CH4/CO2 x GWP = 1.19182 MT CO2e

N2O CO2e = (125.741892 + 584.885976) x 3.57E-05 N2O/CO2 x GWP = 6.81368 MT CO2e

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Mobile Combustion	CO2	Diesel Fuel	Diesel Medium and Heavy-Duty Trucks and Buses	Aftertreatment	Emission Factor	No	Heat Content: 5.8 MMBtu/bbl;	All	57,285.6 gal	10.21 kg/gal	2017 Default Emission Factors - Table #13.1	584.885976	584.885976
Mobile Combustion	CH4	Diesel Fuel	Diesel Medium and Heavy-Duty Trucks and Buses	Aftertreatment	PreCalculated	Yes	Heat Content: 5.8 MMBtu/bbl;	All	0	0.0051 g/mi		0.042565	1.19182
Mobile Combustion	N2O	Diesel Fuel	Diesel Medium and Heavy-Duty Trucks and Buses	Aftertreatment	PreCalculated	Yes	Heat Content: 5.8 MMBtu/bbl;	All	0	0.0048 g/mi		0.025712	6.81368

Source Emissions | Fleet Fuel Consumption CNG

2016 consumption 1,650.59 GGE CNG

GGE CNG CO₂ = (1,650.59 GGE CNG x 0.05444 kg/SCF x 126.67 SCF/GGE CNG)/1000 kg/MT = 11.382 MT

Calculated per Table 13.6 of the General Reporting Protocol SEM using CO₂ value derived from the total

0.000737 kg CH₄/mile

0.00005 kg N₂O/mile

fuel economy 30 miles/GGE (Honda Accord CNG model)

CH₄ CO₂e = 1,650.59 GGE x 30 miles/GGE x 0.000737 kg CH₄/mile x GWP = 1.02186 MT CO₂e

N₂O CO₂e = 1,650.59 GGE x 30 miles/GGE x 0.00005 kg N₂O/mile x GWP = 0.65614 MT CO₂e

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO ₂ e (t)
Mobile Combustion	CO ₂	Alternative Fuels	Light Duty Vehicles	Unspecified Technology	Emission Factor	No	Heat Content: 1027 Btu/scf;	Compressed Natural Gas (CNG)	1,650.59 GGE	0.05444 kg/scf	2017 Default Emission Factors - Table #13.1	11.382328	11.382328
Mobile Combustion	CH ₄	Alternative Fuels	Light Duty Vehicles	Unspecified Technology	PreCalculated	Yes	Heat Content: 1027 Btu/scf;	Compressed Natural Gas (CNG)	0	0.737 g/mi	2017 Default Emission Factors - Table #13.6	0.036495	1.02186
Mobile Combustion	N ₂ O	Alternative Fuels	Light Duty Vehicles	Unspecified Technology	PreCalculated	Yes	Heat Content: 1027 Btu/scf;	Compressed Natural Gas (CNG)	0	0.05 g/mi	2017 Default Emission Factors - Table #13.6	0.002476	0.65614

Source Emissions | Fleet Fuel Consumption Motor Gasoline

109,761 gallons sold to campus tanks plus 7,821 gallons sold through the Voyager Card for a total of 117,582 gallons

Calculated per Table 13.9 of the General Reporting Protocol SEM using CO2 value derived from the total

CH4 = 5.91E-05 CH4/CO2

N2O = 3.57E-05 N2O/CO2

CH4 CO2e = 117,582 gallons x 5.91E-05 CH4/CO2 x GWP (28) = 1.708364 MT CO2e

N2O CO2e = 117,582 gallons x 3.57E-05 N2O/CO2 x GWP (265) = 9.76684 MT CO2e

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Mobile Combustion	CO2	Motor Gasoline	Gasoline Light Trucks (Vans, Pickup Trucks, SUVs)	Vans, Pickup Trucks, SUVs (Model Year 1994)	Emission Factor	No	Heat Content: 5.25 MMBtu/bbl;	All	117,581.66 gal	8.78 kg/gal	2017 Default Emission Factors - Table #13.1	1,032.366975	1,032.366975
Mobile Combustion	CH4	Motor Gasoline	Gasoline Light Trucks (Vans, Pickup Trucks, SUVs)	Vans, Pickup Trucks, SUVs (Model Year 1994)	PreCalculated	Yes	Heat Content: 5.25 MMBtu/bbl;	All	0	0.0646 g/mi	2017 Default Emission Factors - Table #13.5	0.061013	1.708364
Mobile Combustion	N2O	Motor Gasoline	Gasoline Light Trucks (Vans, Pickup Trucks, SUVs)	Vans, Pickup Trucks, SUVs (Model Year 1994)	PreCalculated	Yes	Heat Content: 5.25 MMBtu/bbl;	All	0	0.0982 g/mi	2017 Default Emission Factors - Table #13.5	0.036856	9.76684

Source Emissions | Fleet Fuel Consumption Propane

Calculated per Table 13.6 of the General Reporting Protocol SEM using CO2 value derived from the total

Propane = 2,195 GGE

CH4 Propane = 0.000066 kg CH4/mile

N2O Propane = 0.000175 kg N2O/mile

16.5 miles/GGE Ford F-150 Propane light duty truck (similar to street sweeper)

CH4 CO2e = 2,195 GGE x 16.5 miles/GGE x 0.000066 kg CH4/mile x 0.001 MT/kg x GWP (28) = 0.06693 MT CO2e

N2O CO2e = 2,195 GGE x 16.5 miles/GGE x 0.000175 kg N2O/mile x 0.001 MT/kg x GWP (265) = 1.679587 MT CO2e

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Mobile Combustion	CO2	Alternative Fuels	All	Unspecified Technology	Emission Factor	No	Heat Content: 3.822 MMBtu/bbl;	Propane (Liquid)	2,195 gal	5.72117 kg/gal	2017 Default Emission Factors - Table #13.1	12.557968	12.557968
Mobile Combustion	CH4	Alternative Fuels	All	Unspecified Technology	PreCalculated	Yes	Heat Content: 3.822 MMBtu/bbl;	Propane (Liquid)	2,195 gal			0.00239	0.06693
Mobile Combustion	N2O	Alternative Fuels	All	Unspecified Technology	PreCalculated	Yes	Heat Content: 3.822 MMBtu/bbl;	Propane (Liquid)	2,195 gal			0.006338	1.679587

Source Emissions | Fleet Fuel Consumption ULSD Vehicles Highway Use

Off campus use with Voyager Card was 1,671 gallons for 2016

Calculated per Table 13.9 of the General Reporting Protocol SEM using CO2 value derived from the total

5.91E-05 CH4/CO2

3.57E-05 N2O/CO2

CH4 CO2e = 1,671 gallons x 10.21 kg CO2/gal x 0.001 MT/kg x 5.91E-05 CH4/CO2 x GWP (28) = 0.028224 MT CO2e

N2O CO2e = 1,671 gallons x 10.21 kg CO2/gal x 0.001 MT/kg x 3.57E-05 CH4/CO2 x GWP (265) = 0.161385 MT CO2e

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Mobile Combustion	CO2	Diesel Fuel	Diesel Light Trucks	Moderate Control	Emission Factor	No	Heat Content: 5.8 MMBtu/bbl;	All	1,670.8 gal	10.21 kg/gal	2017 Default Emission Factors - Table #13.1	17.058868	17.058868
Mobile Combustion	CH4	Diesel Fuel	Diesel Light Trucks	Moderate Control	PreCalculated	No	Heat Content: 5.8 MMBtu/bbl;	All	0	0.0009 g/mi	2017 Default Emission Factors - Table #13.4	0.001008	0.028224
Mobile Combustion	N2O	Diesel Fuel	Diesel Light Trucks	Moderate Control	PreCalculated	No	Heat Content: 5.8 MMBtu/bbl;	All	0	0.0014 g/mi	2017 Default Emission Factors - Table #13.4	0.000609	0.161385

Source Emissions | Fleet Fuel Consumption Ultra Low Sulfur Diesel Fuel

48,955 total gallons used from the ULSD tanks minus standby generators usage (12,614.6 gallons) and off campus Voyager card usage (1,671 gallons) is 34,669.4 gallons. the subtracted usage is reported separately.

CH4 conversion factor = 5.91 x 10-5 CH4/CO2

N2O conversion factor = 3.57 x 10-5 N2O/CO2

CH4 CO2e = 357.716539 CO2 x 5.91 x 10-5 CH4/CO2 x GWP (28) = 0.591948 MT CO2e

N2O CO2e = 357.716539 CO2 x 5.91 x 10-5 CH4/CO2 x GWP (265) = 3.38405 MT CO2e

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Mobile Combustion	CO2	Diesel Fuel	Non-Highway	Construction/Minin g Equipment	Emission Factor	No	Heat Content: 5.8 MMBtu/bbl;	All	35,035.9 gal	10.21 kg/gal	2017 Default Emission Factors - Table #13.1	357.716539	357.716539
Mobile Combustion	CH4	Diesel Fuel	Non-Highway	Construction/Minin g Equipment	PreCalculated	No	Heat Content: 5.8 MMBtu/bbl;	All	35,035.9 gal	0.576 g/gal	2017 Default Emission Factors - Table #13.7	0.021141	0.591948
Mobile Combustion	N2O	Diesel Fuel	Non-Highway	Construction/Minin g Equipment	PreCalculated	No	Heat Content: 5.8 MMBtu/bbl;	All	35,035.9 gal	0.256 g/gal	2017 Default Emission Factors - Table #13.7	0.012771	3.384183

Source Emissions | Operation and Maintenance of Standby Generators

The usage by campus diesel generators was 12,248.1 gallons.

CH4 and N2O emission factors from EPA for diesel were used to calculate CH4 (0.00041 kg CH4/gal) and N2O (0.00008 kg N2O/gal)

CH4 CO2e = 12,248.1 gallons x 0.00041 kg CH4/gal x 0.001 MT/kg x GWP (28) = 0.140616 MT CO2e

N2O CO2e = 12,248.1 gallons x 0.00008 kg N2O/gal x 0.001 MT/kg x GWP (265) = 0.2597 MT CO2e

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Petroleum Products	Electric Power	Large Diesel Oil Engines >600hp (447kW)	Emission Factor	No	Heat Content: 0.14 MMBtu/gal;	Distillate Fuel Oil No. 2	12,248.1 gal	10.3544 kg/gal	2017 Default Emission Factors - Table #12.1	126.821727	126.821727
Stationary Combustion	CH4	Petroleum Products	Electric Power	Large Diesel Oil Engines >600hp (447kW)	PreCalculated	No	Heat Content: 0.14 MMBtu/gal;	Distillate Fuel Oil No. 2	12,248.1 gal	4.01 g/MMBtu	2017 Default Emission Factors - Table #12.5	0.005022	0.140616
Stationary Combustion	N2O	Petroleum Products	Electric Power	Large Diesel Oil Engines >600hp (447kW)	PreCalculated	No	Heat Content: 0.14 MMBtu/gal;	Distillate Fuel Oil No. 2	12,248.1 gal		2017 Default Emission Factors - Table #12.5	0.00098	0.2597

Source Emissions | Process Emissions

Based on previous year's usage of bottled N2O, CH4, and CO2 in laboratories on main campus.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Process	CO2	N/A	All	Unspecified Technology	PreCalculated	Yes		N/A				50	50
Process	CH4	N/A	All	Unspecified Technology	PreCalculated	Yes		N/A				0.005	0.14
Process	N2O	N/A	All	Unspecified Technology	PreCalculated	Yes		N/A				0.12	31.8

Source Emissions | Purchased Electricity-Location Based

The campus core buildings purchased 3,457,483 kWh from Southern California Edison during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	3,457,483.42 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	891.729674	891.729674
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	3,457,483.42 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.05191	1.453491
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	3,457,483.42 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.006273	1.662387

Source Emissions | Purchased Electricity-Market Based

Total electricity consumption Main Campus was 3,457,483 kWh.

Qualifying RECs for this emissions year was 516,000 kWh.

Therefore electricity consumption Main Campus (Market) was 2,941,483 kWh.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,941,483.42 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	758.646603	758.646603
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,941,483.42 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.044163	1.23657
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,941,483.42 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.005337	1.41429

Source Emissions | Refrigeration Systems Operation and Maintenance

R134a 1,064.29 lb/2,204.62 lb/MT = 0.482758 MT (HVAC Shop & Fleet Services)

R404A 126 lb/2,204.62 lb/MT = 0.057153 MT

R407c 0 lb/2,204.62 lb/ MT = 0 MT

R401a zero = 0 lb/2,204.62 lb/MT = 0 MT

R410a 30.5 lb/2,204.62 lb/MT = 0.013835 MT

R507 0 lb/2,204.62 lb/MT = 0

We use a refrigerant tracking program to track the refrigerant used. It complies with EPA reporting requirements. The amounts used are what we used in 2016.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Fugitive	HFC-134a	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.482758	627.5854
Fugitive	R-404A	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.057153	225.354279
Fugitive	R-410A	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.013835	26.61854

Source Emissions | Renewable Energy Credits - Market Based

The REC UCI purchased during the 2016 GHG Emissions Reporting year was for Gross Hall Animal Resource Center for 516,000 kWh. The Renewable energy resources covered by the REC were wind (76.1%), non-gaseous biomass (22.5%), low-impact hydropower (1.2%), and solar (0.2%). Only the non-gaseous biomass had GHG emissions associated with electricity generation (116,100 kWh).

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based - Biomass	CO2	Energy Attribute Certificate	PreCalculated	PreCalculated	PreCalculated	No		PreCalculated				178.420448	178.420448
Purchased Electricity - Market Based	CH4	Energy Attribute Certificate	PreCalculated	PreCalculated	PreCalculated	No		PreCalculated				0.05387	1.50836
Purchased Electricity - Market Based	N2O	Energy Attribute Certificate	PreCalculated	PreCalculated	PreCalculated	No		PreCalculated				0.00707	1.87355

Source Emissions | Stationary Combustion

The total use in the campus core was 12,829,110 therms for 2016.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	12,829,110 therm	53.06 kg/MMBtu	2017 Default Emission Factors - Table #12.1	68,071.25766	68,071.25766
Stationary Combustion	CH4	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	12,829,110 therm	5 g/MMBtu	2017 Default Emission Factors - Table #12.9	6.414555	179.60754
Stationary Combustion	N2O	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	12,829,110 therm	0.1 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.128291	33.997142

Facility Emissions | Medical Center

Equity share - 100% | Entity controls the facility emissions - Yes

101 The City Drive, Orange, California, 92868, US

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	12,557.225589	12,440.514204	3.943569	0.023741	0	0	0	0
Mobile Combustion	42.796587	42.305045	0.002523	0.001588	0	0	0	0
Fugitive	1,819.12	36	0	3.5	9.62	0	0	0.036
Total	14,419.142176	12,518.819249	3.946091	3.52533	9.62	0	0	0.036

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	9,060.267321	9,028.719204	0.52559	0.063515	0	0	0	0
Total	9,060.267321	9,028.719204	0.52559	0.063515	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	9,060.267321	9,028.719204	0.52559	0.063515	0	0	0	0
Total	9,060.267321	9,028.719204	0.52559	0.063515	0	0	0	0

Optional - Optional Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Scope 3	11,813.104237	11,683.241417	0.69048	0.417092	0	0	0	0
Total	11,813.104237	11,683.241417	0.69048	0.417092	0	0	0	0

Source Emissions | Commuting

Calculated using a methodology acceptable to the California Air Resources Board (CARB) for CO₂. Default transportation emission factors (Table 13.9) were used to convert CO₂ to CH₄ and N₂O for the GHG amounts listed above.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO ₂ e (t)
Scope 3 (Optional)	CO ₂	N/A	All	Unspecified Technology	PreCalculated	No		N/A				11,683.241417	11,683.241417
Scope 3 (Optional)	CH ₄	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.69048	19.33344
Scope 3 (Optional)	N ₂ O	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.417092	110.52938

Source Emissions | Fleet Fuel Consumption ULSD Vehicles Highway Use

The UCI Medical Center purchased 582 gal of diesel fuel for use in their fleet during the 2016 reporting period. The GHG emissions are calculated from Table 13.9 in the TCR Default Emission Factors document.

582 gal x 10.21 kg/gal x 0.001 MT/kg = 5.937115 MT CO₂

5.937115 MT CO₂ x 5.91E-05 CH₄/CO₂ = 0.000351 MT CH₄ (0.009828 MT CO₂e)

5.937115 MT CO₂ x 3.57E-05 N₂O/CO₂ = 0.000212 MT N₂O (0.05618 MT CO₂e)

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO ₂ e (t)
Mobile Combustion	CO ₂	Diesel Fuel	Diesel Light Trucks	Moderate Control	Emission Factor	No	Heat Content: 5.8 MMBtu/bbl;	All	581.5 gal	10.21 kg/gal	2017 Default Emission Factors - Table #13.1	5.937115	5.937115
Mobile Combustion	CH ₄	Diesel Fuel	Diesel Light Trucks	Moderate Control	PreCalculated	Yes	Heat Content: 5.8 MMBtu/bbl;	All	0	0.0009 g/mi	2017 Default Emission Factors - Table #13.4	0.000351	0.009828
Mobile Combustion	N ₂ O	Diesel Fuel	Diesel Light Trucks	Moderate Control	PreCalculated	Yes	Heat Content: 5.8 MMBtu/bbl;	All	0	0.0014 g/mi	2017 Default Emission Factors - Table #13.4	0.000212	0.05618

Source Emissions | LPG Gas Usage

The UCI Medical Center purchased 29.2 gal of liquid propane for fleet usage during the 2016 reporting period. The EPA GHG Emission Factors (https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf) were used to determine CH4 and N2O emissions. Table 13.9

29.2 gal x 5.67732 kg CO2/gal x 0.001 MT/kg = 0.165778 MT CO2

29.2 gal x 0.000066 kg CH4/mile X 16.5 Mile/GGE = 3.17988e-05 MT CH4

29.2 gal x 0.000175 kg N2O/mle x 16.5 Mile/GGE = 8.43150e-05 MT N2O

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Mobile Combustion	CO2	Alternative Fuels	Light Duty Vehicles	Unspecified Technology	Emission Factor	No	Heat Content: 3.864 MMBtu/bbl;	Liquefied Petroleum Gas (LPG)	29.2 gal	5.67732 kg/gal	2017 Default Emission Factors - Table #13.1	0.165778	0.165778
Mobile Combustion	CH4	Alternative Fuels	Light Duty Vehicles	Unspecified Technology	PreCalculated	Yes	Heat Content: 3.864 MMBtu/bbl;	Liquefied Petroleum Gas (LPG)	0	0.037 g/mi	2017 Default Emission Factors - Table #13.6	0.000032	0.00089
Mobile Combustion	N2O	Alternative Fuels	Light Duty Vehicles	Unspecified Technology	PreCalculated	Yes	Heat Content: 3.864 MMBtu/bbl;	Liquefied Petroleum Gas (LPG)	0	0.067 g/mi	2017 Default Emission Factors - Table #13.6	0.000084	0.022343

Source Emissions | Medical Center Vehicle Fleet

The UCI Medical Center purchased 4,123 gallons of unleaded fuel during the 2016 reporting period for use in the fleet vehicles. The default factors for the transportation sector from table 13.9 were used to calculate GHG for CH4 and N2O.

4,123 gal x 8.78 kg/gal x 0.001 MT/kg = 36.202153 MT CO2

36.202153 MT CO2 x 5.91E-05 CH4/CO2 = 0.002140 MT CH4 (0.05992 MT CO2e)

36.202153 MT CO2 x 3.57E-05 CH4/CO2 = 0.001292 MT N2O (0.34238 MT CO2e)

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Mobile Combustion	CO2	Motor Gasoline	Gasoline Light Trucks (Vans, Pickup Trucks, SUVs)	Vans, Pickup Trucks, SUVs (Model Year 2000)	Emission Factor	No	Heat Content: 5.25 MMBtu/bbl;	All	4,123.25 gal	8.78 kg/gal	2017 Default Emission Factors - Table #13.1	36.202153	36.202153
Mobile Combustion	CH4	Motor Gasoline	Gasoline Light Trucks (Vans, Pickup Trucks, SUVs)	Vans, Pickup Trucks, SUVs (Model Year 2000)	PreCalculated	Yes	Heat Content: 5.25 MMBtu/bbl;	All	0	0.0346 g/mi	2017 Default Emission Factors - Table #13.5	0.00214	0.05992
Mobile Combustion	N2O	Motor Gasoline	Gasoline Light Trucks (Vans, Pickup Trucks, SUVs)	Vans, Pickup Trucks, SUVs (Model Year 2000)	PreCalculated	Yes	Heat Content: 5.25 MMBtu/bbl;	All	0	0.0621 g/mi	2017 Default Emission Factors - Table #13.5	0.001292	0.34238

Source Emissions | Miscellaneous Gases Process Emissions

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Fugitive	CO2	N/A	All	Unspecified Technology	PreCalculated	Yes		N/A				36	36
Fugitive	N2O	N/A	All	Unspecified Technology	PreCalculated	Yes		N/A				3.5	927.5
Fugitive	SF6	N/A	All	Unspecified Technology	PreCalculated	Yes		N/A				0.036	846

Source Emissions | Operation and Maintenance of Standby Generators

The UCI Medical Center used 756 gal of diesel fuel in the 2016 reporting period for regular testing of a fleet of large emergency diesel generators. Factors from EPA Emission Factors for GHG Inventories Other Diesel Sources = 0.26 g/gallon and the default value of 138,000 Btu/gallon to calculate the 1.884 g/MMBtu.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Petroleum Products	Industrial	Large Diesel Oil Engines >600hp (447kW)	Emission Factor	No	Heat Content: 0.14 MMBtu/gal;	Distillate Fuel Oil No. 2	756 gal	10.3544 kg/gal	2017 Default Emission Factors - Table #12.1	7.827926	7.827926
Stationary Combustion	CH4	Petroleum Products	Industrial	Large Diesel Oil Engines >600hp (447kW)	PreCalculated	No	Heat Content: 0.14 MMBtu/gal;	Distillate Fuel Oil No. 2	756 gal	4.01 g/MMBtu	2017 Default Emission Factors - Table #12.7	2.772	77.616
Stationary Combustion	N2O	Petroleum Products	Industrial	Large Diesel Oil Engines >600hp (447kW)	PreCalculated	No	Heat Content: 0.14 MMBtu/gal;	Distillate Fuel Oil No. 2	756 gal		2017 Default Emission Factors - Table #12.7	0.00031	0.08215

Source Emissions | Purchased Electricity-Location Based

The UCI Medical Center purchased 35,006,980 kWh from Southern California Edison during the 2016 reporting year. This is the sum of electricity purchase for the UCIMC main campus (34,464,782 kWh) and UCIMC Warehouse (542,068 kWh).

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	35,006,850.04 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	9,028.719204	9,028.719204
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	35,006,850.04 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.52559	14.716526
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	35,006,850.04 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.063515	16.83159

Source Emissions | Purchased Electricity-Market Based

The UCI Medical Center purchased 35,006,980 kWh from Southern California Edison during the 2016 reporting year. This is the sum of electricity purchase for the UCIMC main campus (34,464,782 kWh) and UCIMC Warehouse (542,068 kWh). The market-based emissions are the same as the location-based emissions since no RECs were purchased for UCI Medical Center during the reporting period.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	35,006,850.04 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	9,028.719204	9,028.719204
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	35,006,850.04 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.52559	14.716526
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	35,006,850.04 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.063515	16.83159

Source Emissions | Refrigeration Systems Operations and Maintenance

Most of the refrigerants used by UCI Medical Center during the 2016 reporting period was R-22. Only one repair occurred for refrigerants covered under the reporting protocol.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Fugitive	R-410A	N/A	All	Unspecified Technology	PreCalculated	No		N/A				0.005	9.62

Source Emissions | Stationary Combustion Natural Gas

The Medical Center purchased 2,343,137 therms of natural gas from Southern California Gas Company during the 2016 reporting year. This is approximately an increase of 55% from the 2015 reporting year. The increase is associated with a fuel cell PPA for the Medical Center.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	2,343,137.26 therm	53.06 kg/MMBtu	2017 Default Emission Factors - Table #12.1	12,432.686277	12,432.686277
Stationary Combustion	CH4	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	2,343,137.26 therm	5 g/MMBtu	2017 Default Emission Factors - Table #12.9	1.171569	32.803922
Stationary Combustion	N2O	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	2,343,137.26 therm	0.1 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.023431	6.209314

Facility Emissions | Mesa Court

Equity share - 100% | Entity controls the facility emissions - Yes

201 A Interim Office Building, Irvine, California, 92697, US

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	537.081998	535.40193	0.050453	0.001009	0	0	0	0
Total	537.081998	535.40193	0.050453	0.001009	0	0	0	0

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	631.906596	629.706278	0.036657	0.00443	0	0	0	0
Total	631.906596	629.706278	0.036657	0.00443	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	631.906596	629.706278	0.036657	0.00443	0	0	0	0
Total	631.906596	629.706278	0.036657	0.00443	0	0	0	0

Source Emissions | Purchased Electricity-Location Based

Mesa Court purchased 2,441,546 kWh from Southern California Edison during the 2016 reporting year. The new Mesa Court Tower building came online in 2016.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,441,546 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	629.706278	629.706278
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,441,546 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.036657	1.026401
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,441,546 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.00443	1.173916

Source Emissions | Purchased Electricity-Market Based

Mesa Court purchased 2,441,546 kWh from Southern California Edison during the 2016 reporting year. The new Mesa Court Tower building came online in 2016. The market-based emissions are the same as the location-based emissions since no RECs were purchased for Mesa Court during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,441,546 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	629.706278	629.706278
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,441,546 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.036657	1.026401
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,441,546 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.00443	1.173916

Source Emissions | Stationary Combustion

Mesa Court purchased 100,905 therms from Southern California Gas company during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	100,905 therm	53.06 kg/MMBtu	2017 Default Emission Factors - Table #12.1	535.40193	535.40193
Stationary Combustion	CH4	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	100,905 therm	5 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.050453	1.41267
Stationary Combustion	N2O	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	100,905 therm	0.1 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.001009	0.267398

Facility Emissions | Middle Earth Housing

Equity share - 100% | Entity controls the facility emissions - Yes

201-A Interim Office Building, Irvine, California, 92697-5444, US

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	670.382445	668.285394	0.062975	0.001259	0	0	0	0
Total	670.382445	668.285394	0.062975	0.001259	0	0	0	0

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	616.777106	614.62947	0.03578	0.004324	0	0	0	0
Total	616.777106	614.62947	0.03578	0.004324	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	616.777106	614.62947	0.03578	0.004324	0	0	0	0
Total	616.777106	614.62947	0.03578	0.004324	0	0	0	0

Source Emissions | Combustion of Natural Gas

Middle Earth Housing purchased 125,949 therms from Southern California Gas company during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	125,949 therm	53.06 kg/MMBtu	2017 Default Emission Factors - Table #12.1	668.285394	668.285394
Stationary Combustion	CH4	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	125,949 therm	5 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.062975	1.763286
Stationary Combustion	N2O	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	125,949 therm	0.1 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.001259	0.333765

Source Emissions | Purchased Electricity - Location Based

Middle Earth Housing purchased 2,383,089 kWh from Southern California Edison during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,383,089.03 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	614.62947	614.62947
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,383,089.03 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.03578	1.001827
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,383,089.03 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.004324	1.145809

Source Emissions | Purchased Electricity from SCE - Market Based

Middle Earth Housing purchased 2,383,089 kWh of electricity from Southern California Edison during the 2016 reporting year. The location-based emissions are the same as the market-based since no RECs were purchased for Middle Earth Housing.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,383,089.03 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	614.62947	614.62947
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,383,089.03 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.03578	1.001827
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,383,089.03 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.004324	1.145809

Facility Emissions | Palo Verde Housing

Equity share - 100% | Entity controls the facility emissions - Yes

201-A Interim Office Building, Irvine, California, 92697-5444, US

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	373.30938	372.141616	0.035068	0.000701	0	0	0	0
Total	373.30938	372.141616	0.035068	0.000701	0	0	0	0

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	129.105028	128.655481	0.007489	0.000905	0	0	0	0
Total	129.105028	128.655481	0.007489	0.000905	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	129.105028	128.655481	0.007489	0.000905	0	0	0	0
Total	129.105028	128.655481	0.007489	0.000905	0	0	0	0

Source Emissions | Combustion of Natural Gas

Palo Verde Housing purchased 70,136 therm from Southern California Gas company during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	70,136 therm	53.06 kg/MMBtu	2017 Default Emission Factors - Table #12.1	372.141616	372.141616
Stationary Combustion	CH4	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	70,136 therm	5 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.035068	0.981904
Stationary Combustion	N2O	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	70,136 therm	0.1 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.000701	0.18586

Source Emissions | Purchased Electricity - Market Based

Palo Verde Housing purchased 498,833 kWh of electricity from Southern California Edison during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	498,833 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	128.655481	128.655481
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	498,833 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.007489	0.209704
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	498,833 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.000905	0.239843

Source Emissions | Purchased Electricity- Location Based

Palo Verde Housing purchased 498,833 kWh of electricity from Southern California Edison during the 2016 reporting year. The market-based emissions are the same as the location-based emissions since no RECs were purchased for Palo Verde Housing during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	498,833 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	128.655481	128.655481
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	498,833 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.007489	0.209704
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	498,833 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.000905	0.239843

Facility Emissions | University Extension and Alumni House

Equity share - 100% | Entity controls the facility emissions - Yes

201-A Interim Office Building, Irvine, California, 92697-5444, US

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	2.741165	2.73259	0.000258	0.000005	0	0	0	0
Total	2.741165	2.73259	0.000258	0.000005	0	0	0	0

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	123.26656	122.837342	0.007151	0.000864	0	0	0	0
Total	123.26656	122.837342	0.007151	0.000864	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	123.26656	122.837342	0.007151	0.000864	0	0	0	0
Total	123.26656	122.837342	0.007151	0.000864	0	0	0	0

Source Emissions | Combustion of Natural Gas

UNEX and University House purchased 515 therms from Southern California Gas company during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	515 therm	53.06 kg/MMBtu	2017 Default Emission Factors - Table #12.1	2.73259	2.73259
Stationary Combustion	CH4	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	515 therm	5 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.000258	0.00721
Stationary Combustion	N2O	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	515 therm	0.1 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.000005	0.001365

Source Emissions | Purchased Electricity-Location Based

UNEX and University House purchased 476,274 kWh of electricity from Southern California Edison during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	476,274.47 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	122.837342	122.837342
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	476,274.47 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.007151	0.200221
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	476,274.47 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.000864	0.228997

Source Emissions | Purchased Electricity-Market Based

UNEX and University House purchased 476,274 kWh of electricity from Southern California Edison during the 2016 reporting year. The market-based emissions are the same as the location-based emissions due to no RECs being purchased for UNEX and/or University House during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	476,274.47 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	122.837342	122.837342
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	476,274.47 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.007151	0.200221
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	476,274.47 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.000864	0.228997

Facility Emissions | Verano Place Housing

Equity share - 100% | Entity controls the facility emissions - Yes

201-A Interim Office Building, Irvine, California, 92697-5444, US

Scope 1 - Direct Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Stationary Combustion	1,381.03606	1,376.715984	0.129732	0.002595	0	0	0	0
Total	1,381.03606	1,376.715984	0.129732	0.002595	0	0	0	0

Scope 2 - Location Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Location Based	705.955129	703.496973	0.040953	0.004949	0	0	0	0
Total	705.955129	703.496973	0.040953	0.004949	0	0	0	0

Scope 2 - Market Based - Indirect Emissions	Total CO ₂ e (t)	CO ₂ (t)	CH ₄ (t)	N ₂ O (t)	HFC (t of CO ₂ e)	PFC (t of CO ₂ e)	NF ₃ (t)	SF ₆ (t)
Purchased Electricity - Market Based	705.955129	703.496973	0.040953	0.004949	0	0	0	0
Total	705.955129	703.496973	0.040953	0.004949	0	0	0	0

Source Emissions | Combustion of Natural Gas

Verano Place Housing purchased 259,464 therms from Southern California Gas company during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Stationary Combustion	CO2	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	259,464 therm	53.06 kg/MMBtu	2017 Default Emission Factors - Table #12.1	1,376.715984	1,376.715984
Stationary Combustion	CH4	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	259,464 therm	5 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.129732	3.632496
Stationary Combustion	N2O	Natural Gas	Commercial	Unspecified Technology	Emission Factor	No	Heat Content: 1026 Btu/scf;	Unspecified (Weighted U.S. Average)	259,464 therm	0.1 g/MMBtu	2017 Default Emission Factors - Table #12.9	0.002595	0.68758

Source Emissions | Purchased Electricity-Location Based

Verano Place Housing purchased 2,727,653 kWh of electricity from Southern California Edison during the 2016 reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Location Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,727,653 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	703.496973	703.496973
Purchased Electricity - Location Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,727,653 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.040953	1.146678
Purchased Electricity - Location Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,727,653 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.004949	1.311479

Source Emissions | Purchased Electricity-Market Based

Vernao Place Housing purchased 2,727,653 kWh of electricity from Southern California Edison during the 2016 reporting year. The market-based emissions are the same as the location-based emissions since no RECs were purchased for Verano Place Housing during the current reporting year.

Activity Type	Gas	Fuel Type	End Use Sector	Technology	Calculation Method	SEM	Additional Information	Fuel	Fuel Quantity	Emission Factor (EF)	EF Reference	Gas Quantity	CO2e (t)
Purchased Electricity - Market Based	CO2	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,727,653 kWh	568.6 lb/MWh	2017 Default Emission Factors - Table #14.1	703.496973	703.496973
Purchased Electricity - Market Based	CH4	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,727,653 kWh	33.1 lb/GWh	2017 Default Emission Factors - Table #14.1	0.040953	1.146678
Purchased Electricity - Market Based	N2O	Regional Grid-Average	2016	Unspecified Technology	Emission Factor	No		WECC California	2,727,653 kWh	4 lb/GWh	2017 Default Emission Factors - Table #14.1	0.004949	1.311479