

University of California, Santa Cruz	Detail Report - Control (Public)	Complete Inventory 2016
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Description:

Industry: 61 - Educational Services

Address: Physical Plant, 1156 High St.
Santa Cruz, California US

Contact:
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Reporting Information

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

GWP Standard: AR5

Base Year: 2006

Consolidation Methodology: Operational Control Only

Status: TCR Accepted

Verification Information

Verification Body: Cameron-Cole, LLC

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	28,074.075339	27,934.812953	13.741169	125.521217	0	0	0	0
Mobile Combustion	2,199.471763	2,176.105396	3.009989	20.356378	0	0	0	0
Fugitive	220.082834	4.331804	0	0	65.453326	0	0	150.297705
Total	30,493.629935	30,115.250153	16.751158	145.877595	65.453326	0	0	150.297705
NetTotal	30,493.629935	30,115.250153	16.751158	145.877595	65.453326	0	0	150.297705

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	4,987.601332	4,970.234358	8.101325	9.26565	0	0	0	0
Total	4,987.601332	4,970.234358	8.101325	9.26565	0	0	0	0
NetTotal	4,987.601332	4,970.234358	8.101325	9.26565	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	3,553.261277	3,535.894302	8.101325	9.26565	0	0	0	0
Total	3,553.261277	3,535.894302	8.101325	9.26565	0	0	0	0
NetTotal	3,553.261277	3,535.894302	8.101325	9.26565	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	28,074.075339	27,934.812953	0.490756	0.473665	0	0	0	0
Mobile Combustion	2,199.471763	2,176.105396	0.1075	0.076817	0	0	0	0
Fugitive	220.082834	4.331804	0	0	65.453326	0	0	0.006396
Total	30,493.629935	30,115.250153	0.598256	0.550481	65.453326	0	0	0.006396

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	4,987.601332	4,970.234358	0.289333	0.034965	0	0	0	0
Total	4,987.601332	4,970.234358	0.289333	0.034965	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	3,553.261277	3,535.894302	0.289333	0.034965	0	0	0	0
Total	3,553.261277	3,535.894302	0.289333	0.034965	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	23.366367	35,481.231267	0.0658555691594796%
Market Based	23.366367	34,046.891212	0.0686299569932131%

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

Facility Emissions | Fleet Vehicles and Voyager Accounts

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

1156 High St., Santa Cruz, California, 95064, 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)
Mobile Combustion	2,199.471763	2,176.105396	0.1075	0.076817	0	0	0	0
Total	2,199.471763	2,176.105396	0.1075	0.076817	0	0	0	0

Facility Emissions | UCSC Contiguous

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

1156 High St, Santa Cruz, California, 95064, 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	27,600.937248	27,464.24668	0.466521	0.466521	0	0	0	0
Fugitive	220.082834	4.331804	0	0	65.453326	0	0	0.006396
Total	27,821.020081	27,468.578484	0.466521	0.466521	65.453326	0	0	0.006396

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	4,072.234617	4,058.054977	0.236232	0.028548	0	0	0	0
Total	4,072.234617	4,058.054977	0.236232	0.028548	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	2,901.136761	2,886.95712	0.236232	0.028548	0	0	0	0
Total	2,901.136761	2,886.95712	0.236232	0.028548	0	0	0	0

Facility Emissions | UCSC Off-campus

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

2300 Delaware, Santa Cruz, California, 95060, 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	473.138091	470.566273	0.024235	0.007144	0	0	0	0
Total	473.138091	470.566273	0.024235	0.007144	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	915.366715	912.179382	0.053101	0.006417	0	0	0	0
Total	915.366715	912.179382	0.053101	0.006417	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	652.124516	648.937182	0.053101	0.006417	0	0	0	0
Total	652.124516	648.937182	0.053101	0.006417	0	0	0	0

Preliminary GHG Emission Spreadsheet: Campus Transportation

Larry Pageler, UCSC TAPS

Created: August 15, 2007

Revised: March, 2018

Example: UC Santa Cruz

These are estimates

These are **Scope 1** emissions from Campus Fleet vehicles

These are observed values

SOV, Motorcycles, MOV, Trucks, Transit Bus and Estimated Air Travel constitute **Scope 3** emissions

CY 2018	SOV	Motorcycles	MOV	Trucks	Transit Bus	Vanpool	Other TDM	Fleet-Fueled Vehicles					Estimated Air Travel	Totals	Non-Fleet Only	
								Unleaded	Diesel	BioDiesel	CNG	LPG	Total			
Mode Split	69.5%	1.2%	19.6%	4.0%	2.8%	2.9%	0.1%								100.1%	
Vehicle-Trips/Day	15,166	257	4,282	862	606	641	11								21,812	
Avg. MPG	20	50	20	8	8	13	8									
Avg. Trip Length miles/year	10	10	10	10	10.1	25.905	6	2,326,513								
Fuel Consumption Gals/Day	36,094,803	612,568	10,190,436	2,050,546	1,457,601	311,781		46,897,807						15,747,895		
Gals/Yr	7,583	51	2,141	1,077	766										11,618	
Annual CO2 Production Kg	1,804,740	12,251	509,522	256,318	182,200			130,786	81,922	0	9,111	0	221,819		2,986,851	2,765,032
Metric Tons	15,899,761	107,935	4,488,887	2,258,164	1,408,407	0	0	1,152,228	831,506	0	48,378	0	2,032,112		26,195,265	24,163,153
% total	15,900	108	4,489	2,258	1,408	0	0	1,152	832	0	48	0	2,032	2,205	26,195	24,163
% Grand Total	60.70%	0.41%	17.14%	8.62%	5.38%	0.00%	0.00%	4.40%	3.17%	0.00%	0.18%	0.00%		28,400		
	55.98%	0.38%	15.81%	7.95%	4.96%								7.16%	7.76%	100.00%	

Energy Source	MT CO2e			
Grid-purchased electricity	1,432			
Natural gas	28,737		Scope 1	31,164
Propane and fugitive	395		Scope 2	1,432
Fleet fuel combusted	2,032		Scope 3	37,610
Business travel (Conexus flights)	11,453			
Commuting (Pageler model)	24,163			
Waste	1,994			