



Cupertino Sustainability Commission Meeting

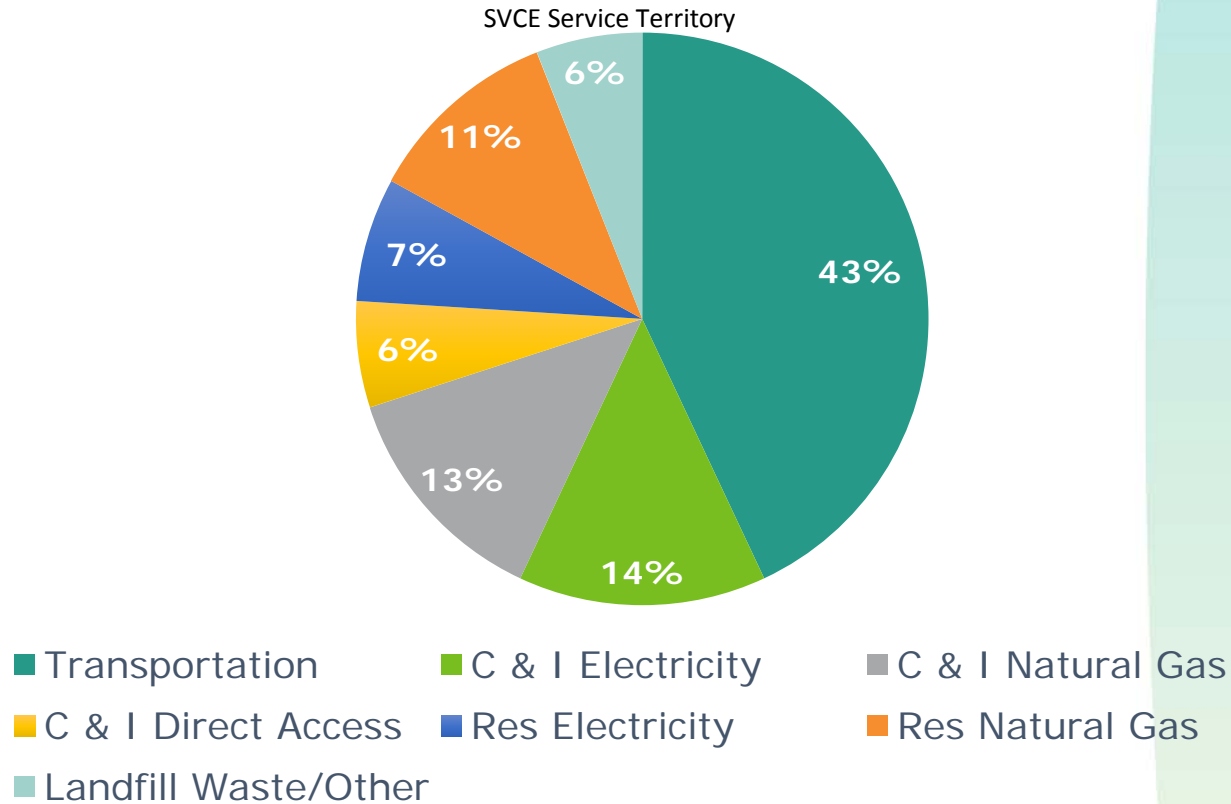
November 16, 2017



OVERVIEW

- Where is CO₂
- SVCE Carbon Content
- Cupertino Participation

2015 Carbon Emissions by Source*





Carbon Emissions from Electricity Generation

Source	Representative Carbon Emissions Factors (lb CO ₂ e/MWh)	Renewable?
Coal Mixed Electric Utility /Electric Power	2131	
Petroleum	1543 - 2579	
Natural Gas U.S. weighted avg.	805	
Biomass	91	Yes
Geothermal	57	Yes
Nuclear	0	
Solar PV	0	Yes
Wind	0	Yes
Large Hydro	0	



Preliminary SVCE Emissions Modeling

Source	GreenStart	Emissions Factor (lb CO2/MWh)	GreenPrime	Emissions Factor (lb CO2/MWh)
Solar	5%	0	20%	0
Wind	30%	0	80%	0
Biomass	15%	14	-	-
Large Hydro	50%	0	-	-
TOTAL	100%	14	100%	0

GreenStart: 14 lbs CO2e/MWh

GreenPrime: 0 lbs CO2e/MWh

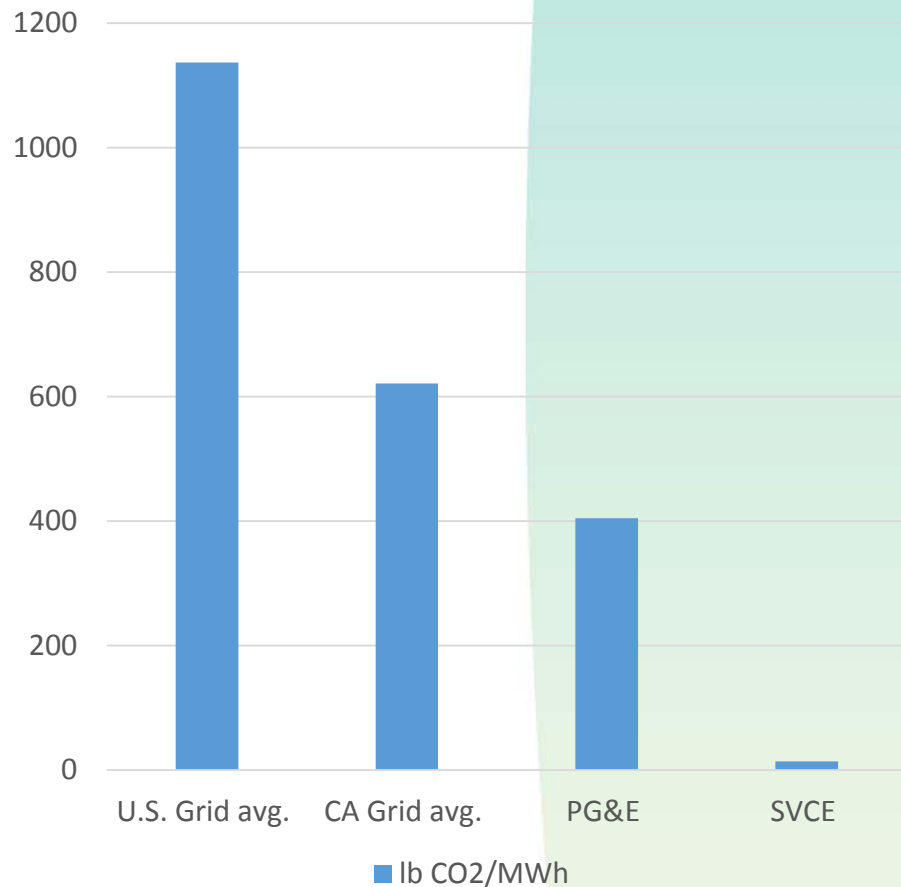


Carbon Content

- U.S. Grid average: **1,137 lbs.**
- CA Grid average: **601 lbs.**
- PG&E emissions rate: **405 lbs.**
- SVCE est. emissions rate: **14 lbs.**



Emissions Rate Comparison



Cupertino Engagement

	Accounts	Opted Out	Opt-Out %
Residential	21,041	372	1.8%
C&I/Govt	1,901	27	1.4%

Overall Opt-Out is just under 3%.

	GreenPrime	Cupertino	Percentage
Residential	834	54	6.5%
C&I/Govt	1500	139	9.3%

Conclusion

Carbon Cataloging + City Input + Citizen Advisory = Programs

Programs + Re-enrollment = Success

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