Community Choice Energy Programs in California: Greenhouse Gas and Customer Cost Savings

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Introduction

This study evaluates the past and potential impact of Community Choice Energy (CCE) programs on greenhouse gas (GHG) emissions and on past and potential money saved by CCE customers in California.

The analysis used performance data from current California Community Choice programs, the first of which began operating in 2010. It combined this data with projections for another fourteen possible Community Choice programs to forecast impacts on GHG emissions and local economies in California for the five-year period from 2016 to 2020.

Summary of Results and Assumptions

- California's CCEs will grow from five agencies at the beginning of 2016 with a combined service area population of nearly 3 million to about 20 agencies by 2020 with a combined service area population of about 18 million.

- CCEs will reduce at least 5 million metric tons GHG emissions cumulatively compared to the Investor-Owned Utilities (IOUs). This figure assumes that the IOUs meet AB32 requirements, and that CCEs reduce their GHG emissions by 2.5% each year starting from the average GHG emission rate of the five currently-operating CCEs.

- CCE customer will save $188 million more per year by the end of 2020 compared with what customers would have spent if they stayed with the incumbent utilities. This figure assumes that CCEs offer rates that are at least 1% lower than the IOUs charge for the five-year period from 2016 to 2020 using 2016 rates with no inflation or other adjustments.

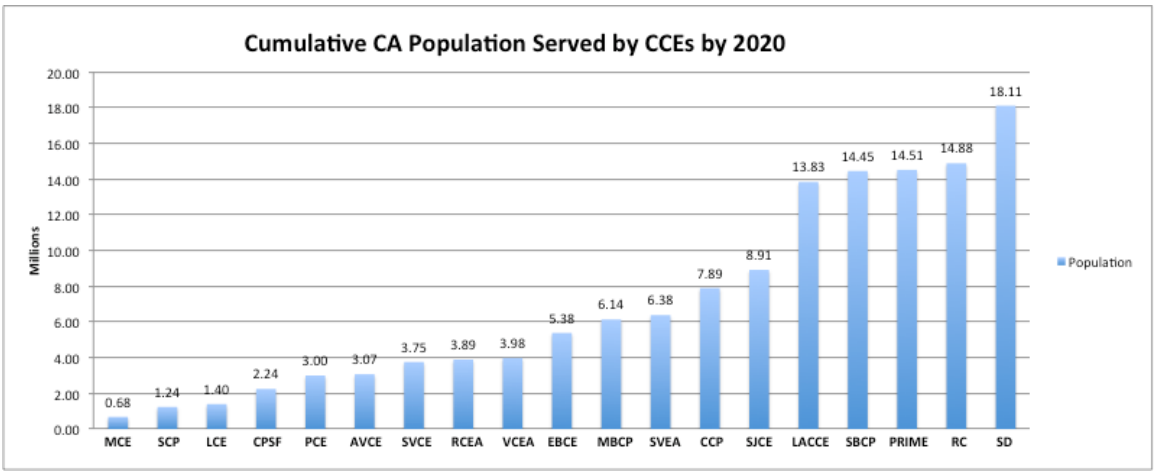
Methodology - Population Served by CCEs

Based on information and data compiled on the Clean Power Exchange website[1], a project of the Center for Climate Protection (CCP), and the California Community Choice Association[2] (CalCCA), a list of existing CCEs and potential CCEs and their associated populations was assembled. Following investigations and research on websites, public agency records, and personal communication with CCP staff, estimates were developed for the start date and population that would be served by future California CCEs.

Current and Potential CCEs in California by 2020

Name/Agency	Start Date	Population Served*
Operational CCEs		
MCE Clean Energy	May-10	680,409
Sonoma Clean Power	May-14	557,356
Lancaster Choice Energy	May-15	161,103
CleanPowerSF	May-16	845,602
Peninsula Clean Energy	Oct-16	753,123
Apple Valley Choice Energy (San Bernardino Co.)	Apr-17	71,396
Silicon Valley Clean Energy	Apr-17	685,254
Redwood Coast Energy Authority	May-17	134,398
Emerging CCEs		
Valley Clean Energy Alliance	Apr-18 est.	93,642
East Bay Community Energy	Jun-18 est.	1,398,877
Monterey Bay Community Power	Jun-18 est.	755,403
Sierra Valley Energy Authority	Jun-18 est.	241,072
Central Coast Power	Jun-18 est.	1,516,530
San Jose Clean Energy	Jun-18 est.	1,016,479
Los Angeles Community Choice Energy	Dec-18 est.	4,919,704
South Bay Clean Power	Dec-18 est.	616,317
Pico Rivera Innovative Municipal Energy	Dec-18 est.	64,182
Riverside County	Dec-18 est.	368,823
San Diego	Dec-19 est.	3,227,496

* Total population within the service territory, excluding municipal utilities



Methodology - GHG Emission Reductions by CCEs vs IOUs

The Climate Registry has publicly available GHG emission factors for PG&E and Sonoma Clean Power. [3] These were used as benchmarks of verifiable GHG emission rates for 2015 for those two local energy suppliers. Edison International's Corporate Responsibility Scorecard provided GHG emission rates for Southern California Edison's electricity for 2015, which was used as a baseline GHG emission rate for their service territory. [4] Concurrently, and independent of this study, the Luskin Center for Innovation at UCLA conducted an analysis of GHG emission rates for current CCEs and IOUs using Power Content Label and other information from the CCEs and IOUs.[5] With permission, this analysis was used for this study to establish an average emission rate for the five CCEs in operation in 2015 and 2016. This average emission rate was then applied as the initial emission rate for the potential future CCEs.

For the current and potential CCEs, the GHG emission rate for future years (2016-2020) was then reduced by 2.5% each year, a reduction regime used by Sonoma Clean Power for their five-year budget forecast in their 2017-18 Budget Supplemental Materials.[6] For comparison to the IOUs' GHG emission rates for 2016-2020, it was assumed they would reduce emissions and achieve AB32 GHG reduction requirements, following the schedule on the CPUC GHG Calculator and the difference between the emission rates was calculated for the period 2016-2020.[7]

To calculate the GHG emission reductions, it is necessary to have the amount of electrical power used by each CCE. Calpine Energy Solutions[8] supplied energy use data for the existing California CCEs for past operations which was applied to the future CCEs on a per capita basis, providing energy use figures for GHG emission calculations. Supporting data was also provided by CalCCA.[9]

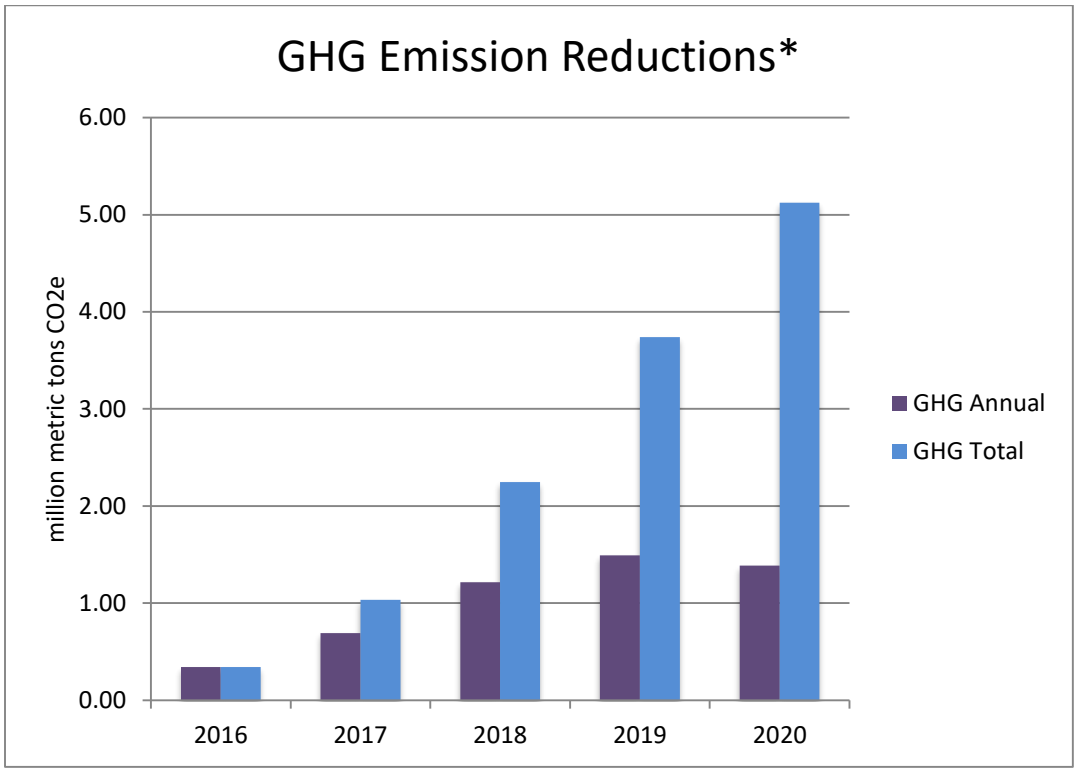
Although increased energy use, or conversely, more energy efficiency, would impact the GHG emission reductions and economic benefits of CCEs, for purposes of this analysis it was assumed that overall electrical energy use would remain constant for the five-year period. The California Energy Commission's 2016 Integrated Energy Policy Report Update[10] indicates that California energy demand could increase, decrease, or remain about the same during this time period depending on the economy and implementation of various energy efficiency and renewable energy production measures.
For ease of comparison, no adjustments for energy cost inflation were made to any data.

Methodology - Economic Impacts of CCEs vs IOUs

Using financial information provided by Sonoma Clean Power on total annual savings to SCP customers compared to PG&E, [11] a per capita savings value was established for a 1% reduction in electricity costs on the customer's bill. This conservative savings value factor was then applied to each current and potential future CCE's population for each year of operation during the study period, generating an annual financial savings amount that grows as additional CCEs

become operational. Actual savings may vary given that each CCE sets its own rates, but all operational and prospective CCEs are publicly committed to offer competitive rates.

Results - GHG Emission Reductions

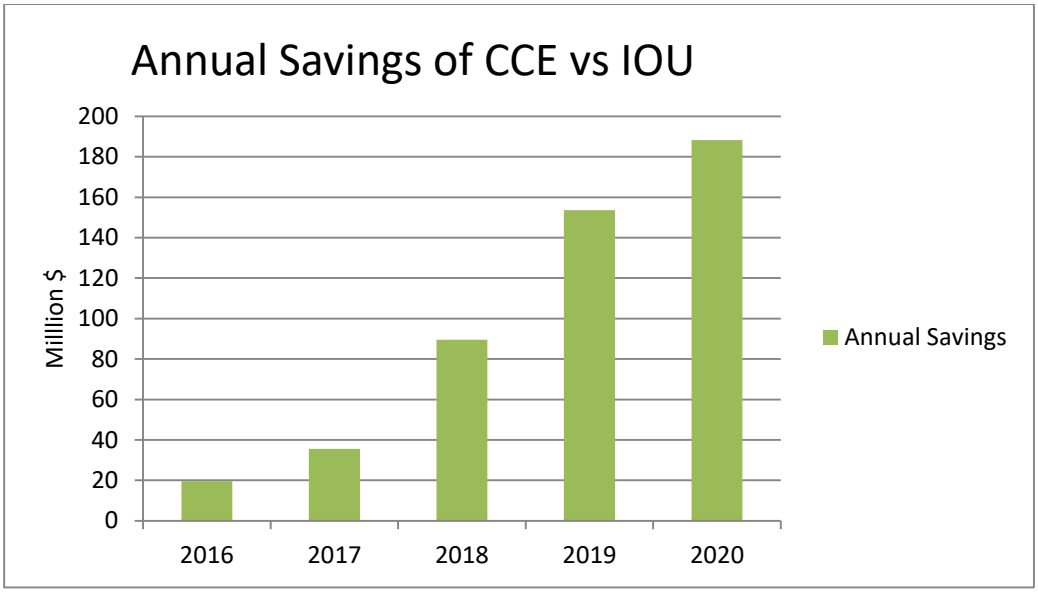


* GHG Emission Reductions reflect the difference between CCE estimated GHG emissions and IOU GHG emissions under AB32 GHG reduction requirements.

The chart above and table below list each year and the cumulative (total) GHG reductions of CCEs compared to the IOUs.

Year	GHG annual (MMTs)	GHG total (MMTs)
2016	0.34	0.34
2017	0.69	1.03
2018	1.21	2.25
2019	1.49	3.74
2020	1.39	5.13

Results - Economic Savings of CCEs vs IOUs



Annual Savings in Million $	2016	2017	2018	2019	2020
	$20	$36	$90	$154	$188

Conclusions - Impacts of CCEs vs IOUs

With an assumption that GHG emission rate reductions of 2.5% per year can be achieved by the CCEs annually, starting from current emission rates, and a forecast for 1% overall rate savings compared to the IOU, the potential environmental and economic impacts are significant: over 5 million metric tons of reduced GHG emissions (even while the IOUs achieve the AB32 GHG reduction mandates), and $188 million dollars per year remaining in CCE customers' pockets.

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[1] http://cleanpowerexchange.org/

[2] 2017-03-31 CalCCA Briefing Slides

[3] https://www.theclimateregistry.org/

[4] http://www.edison.com/content/dam/eix/documents/aboutus/citizenship/2015-eix-corporate-responsibility-report.pdf

[5] Communication with Julien Gattaciecca, Lead Author, CCE Study, Luskin Center for Innovation, UCLA

[6] https://sonomacleanpower.org/wp-content/uploads/2016/12/2017.05.11-SCPA-BOD-Agenda-Pkt-reduced-1.pdf (SUPPLEMENTAL TO THE PROPOSED BUDGET, pg. 36)

[7]https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

[8] Email communication with Drake Welch, Calpine Energy Solutions, March 2017

[9] California Community Choice Association (CalCCA) Briefing Slides, 2017-03-31

[10] http://www.energy.ca.gov/2016_energypolicy/

[11] email communication from Geof Syphers, CEO, Sonoma Clean Power, April 2017

About the author

Ken Wells has over three decades of professional environmental management experience, with degrees in Environmental Economics and Environmental Resources Engineering from Humboldt State University. Preceding his current work as a consultant, Mr. Wells was the Executive Director of the Sonoma County Waste Management Agency, which included responsibility for landfills, recycling, composting and renewable energy programs. Currently, Mr. Wells serves on the Community Advisory Committee of Sonoma Clean Power and the Climate Action Advisory Committee for Sonoma County's Regional Climate Protection Authority.