



Legislative Council Staff

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Memorandum

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TO: Interested Persons

FROM: Christina Van Winkle, Senior Environmental Analyst, 303-866-6289

SUBJECT: Community Choice Energy

Summary

Community choice energy (CCE) is an alternative to the investor-owned utility energy supply system that allows local entities to aggregate individual customers within a defined service area and secure alternative energy suppliers on their behalf.¹ The primary goals of CCEs have been to lower costs for energy customers and allow greater control of the energy mix, particularly through increasing the proportion of renewable energy that is supplied.

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This memorandum explains how CCE programs are implemented and compares product offerings and rates to the incumbent electric utility in select jurisdictions. The memorandum concludes by identifying some of the challenges and opportunities of community choice energy programs.

Background

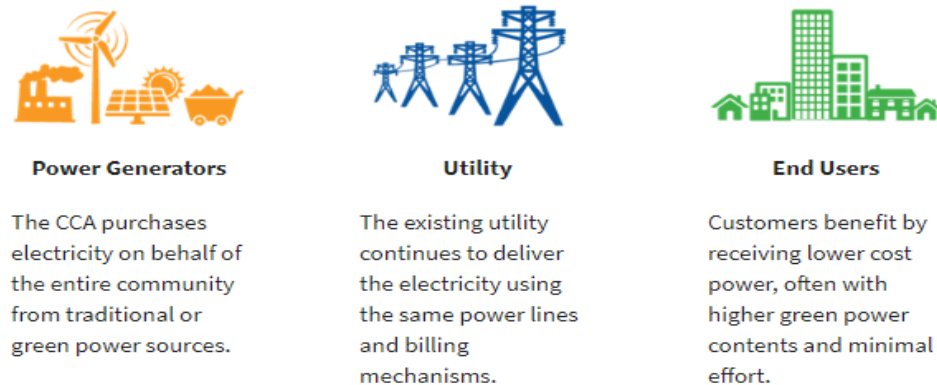
What is community choice energy? Community choice energy is a voluntary energy supply model that allows local governments to pool (or aggregate) their electric loads and directly procure or develop power on behalf of their residents, businesses, and municipalities, while retaining transmission, distribution, and billing services from their current electric utility provider. CCE programs can be run directly by a city or county government, or through a third party via contractual arrangement. Through community choice aggregation, local governments, on behalf of their constituents, can achieve a range of objectives, including:

- competitive, often lower electricity rates;
- local control and consumer choice;

¹Community choice energy (CCE) is sometimes referred to as community choice aggregation (CCA), municipal aggregation, or government energy aggregation. These terms are used interchangeably throughout this report.

- local job creation and power resiliency;
- transition to a cleaner, more efficient energy supply;
- new renewable energy development; and
- complementary energy programs such as distributed solar, demand response technologies, and energy efficiency retrofits.²

**Figure 1
Structure of Community Choice Energy**



Source: U.S. Environmental Protection Agency.

According to Lean Energy, nationwide, CCE electric rate savings average between 2 and 20 percent, depending on market conditions and power resources. Some states such as California are using the CCE model to more rapidly transition to renewable and greenhouse gas-free electricity generation, while keeping rates at or below the incumbent utility. Some CCEs offer customers multiple products with varying rates. For instance, customers may opt for a 'lean power' option where a portion (e.g., 50 percent) of the electricity is supplied by renewable resources, or for a 'green power' option where 100 percent of the electricity is supplied by renewable resources for an extra cost.

How is CCE implemented? Eight states have enacted enabling legislation for community choice energy, including California, Illinois, Massachusetts, New Jersey, New York, Ohio, Rhode Island, and Virginia.³ Within these states, local laws may still be required to authorize the CCE. Once a CCE is established, the authority, on behalf of its customers, determines the mix of resources used to supply electricity that meet their electricity portfolio needs, including renewable and/or distributed energy targets. Customers in CCEs continue to receive one electric utility bill from their local utility, which continues to provide delivery and maintenance services. CCEs are nonprofit entities that are self-sustained through revenue generation, which can be used to lower rates, invest in new power supply projects, and offer energy efficiency programs to their customers.

CCE programs can be implemented with either opt-in or opt-out provisions, although opt-out plans are more common due to higher participation rates, with opt-out rates ranging from 3 to 8 percent of customers on average.⁴ In states with deregulated energy markets such as Massachusetts, separation between energy generation and distribution already exists, and customers may already have a choice in their power suppliers, easing the transition to a CCE model. In regulated energy markets such as

²Lean Energy U.S. *What is a CCA?* Accessed at: <http://leanenergyoregon.org/what-is-cca/>.

³Virginia enacted enabling legislation but there but no CCEs have formed to date.

⁴Lean Energy U.S.

California, customers that chose to participate in a CCE may be obligated to pay exit fees to compensate the utility for sunk investment costs.

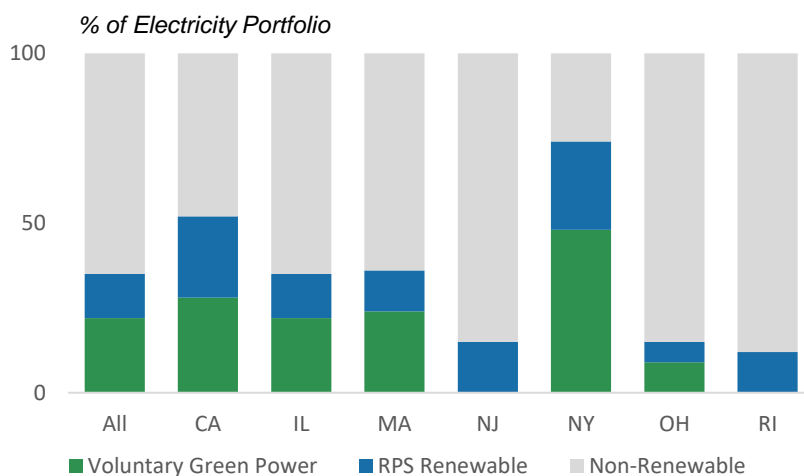
CCE and Renewable Energy

According to a study conducted by the National Renewable Energy Laboratory (NREL), CCEs procured approximately 42 million megawatt-hours of electricity on behalf of their 5 million customers in 2017, accounting for 12 percent of total state customers in the 7 states with active CCEs, and five percent of total state sales.

Renewable Portfolio Targets. CCEs must comply with their state’s Renewable Portfolio Standards (RPS), if established, which require the procurement of a minimum amount of electricity from renewable energy generators. CCEs may, however, elect to procure more renewable energy beyond the state’s RPS requirements, and may require energy to be procured within a particular geographic area (e.g., the service area or within the state or region).

To comply with a state’s RPS, renewable energy sales are tracked by Renewable Energy Certificates (RECs), which reflect the environmental attributes associated with the generation of one megawatt-hour of renewable electricity. These RECs may be sold with the underlying electricity (e.g., “bundled”) or separately from the renewable energy (e.g. “unbundled”). CCEs may choose to purchase either the bundled renewable energy or the unbundled RECs to match their electricity needs and demonstrate compliance with the state-mandated RPS.

Figure 2
CCE Portfolio Energy Mix by State



Source: National Renewable Energy Laboratory.

In addition to offering a power plan compliant with the state RPS requirements, many CCEs also offer plans with a greater percentage of renewable energy. Figure 2 shows the amount of renewable energy provided by CCEs beyond the RPS requirements, reflecting the amount of ‘voluntary green power’⁵ offered. According to NREL, about 13 percent of CCEs offer voluntary green power. Voluntary green power sources also vary by state, but wind energy is the largest source of renewable energy at

⁵Voluntary green power is defined in the NREL report as the incremental portion of renewable energy above the RPS procured by a CCE.

78 percent, with the remainder consisting of solar, hydro, geothermal, and biomass/landfill energy sources.

Examples of CCE

The following section provides two examples of CCEs and their product offerings as compared to the incumbent utility in the service area.

Peninsula Clean Energy. Peninsula Clean Energy (PCE) was created in 2016 as the CCE authority of San Mateo County, California. Customers have two different product options, an ‘ECOplus’ option that offers more renewable energy than the current utility provider (PG&E) at lower rates, or an ‘ECO100’ option that is 100 percent renewable energy for slightly higher rates. PCE’s strategic plan is to design a diverse power portfolio that maintains a minimum renewable energy content of 50 percent for its ECOplus product, with a goal of increasing renewables to 100 percent for all customers by 2025 and being greenhouse-gas free by 2021. PCE does not use ‘unbundled’ renewable energy credits (RECs) to meet its renewable energy goals. As of 2018, customer participation rates associated with PCE membership are approximately 98 percent, with a 2 percent opt-out rate.⁶

As the incumbent electric utility, PG&E partners with PCE to compare electric rates, average monthly charges, and electric power generation data. The table below compares the electric power generation mix of PG&E and PCE.

Table 1
Electric Power Generation Mix of PG&E and PCE

Specific Purchases	Percent of Total Retail Sales (kWh)			
	Base	PG&E Solar Choice	Peninsula Clean Energy	
			Eco Plus	Eco 100
Renewable	39%	100%	51%	100%
· Biomass & Bio-waste	4%	0%	5%	0%
· Geothermal	4%	0%	2%	0%
· Eligible hydroelectric	3%	0%	5%	0%
· Solar electric	18%	100%	7%	50%
· Wind	10%	0%	33%	50%
Coal	0%	0%	0%	0%
Large Hydroelectric	13%	0%	35%	0%
Natural Gas	15%	0%	0%	0%
Nuclear	34%	0%	0%	0%
Other	0%	0%	0%	0%
Unspecified Power Source*	0%	0%	14%	0%

Source: PG&E. https://www.pge.com/pge_global/common/pdfs/customer-service/other-services/alternative-energy-providers/community-choice-aggregation/PCE_ElectricPowerGenerationMix.pdf

Notes: As reported to the California Energy Commission’s Power Source Disclosure Program excluding voluntary unbundled renewable energy credits. PG&E and PCE data are subject to an independent audit and verification. The figures above may not sum up to 100 percent due to rounding.

* Unspecified sources of power refers to electricity that is not traceable to specific generating facility, such as electricity traded through open market transactions. Unspecified sources of power are typically a mix of all resource types, and may include renewable.

⁶Peninsula Clean Energy 2018 Integrated Resource Plan. <https://www.peninsulacleanenergy.com/wp-content/uploads/2018/01/PCE-FINAL-2017-IRP-Updated.pdf>

PG&E also publishes a joint rate comparison between plans offered by PG&E and PCE. Table 2 represents a residential tiered rate plan, based on a monthly electricity usage of 415 kilowatt-hours. As shown, PCE rates for the ECOplus option (50 percent renewables) are lower than both PG&E’s product offerings. PCE’s ECO100 rates (100 percent renewable) are also lower than PG&E’s 100 percent renewable option.

Table 2
Electricity Rate Comparison between PG&E and PCE

Residential: Tiered Rate Plan E-1	PG&E	PG&E Solar Choice (100% RE)	PCE ECOplus (50% RE)	PCE ECO100 (100% RE)
Generation Rate (\$/kWh)	\$0.11778	\$0.09436	\$0.08407	\$0.09407
PG&E Delivery Rate (\$/kWh)	\$0.15241	\$0.15241	\$0.15241	\$0.15241
PG&E PCIA/FF (\$/kWh)*	N/W	\$0.02979	\$0.02763	\$0.02763
Total Electricity Cost (\$/kWh)	\$0.27019	\$0.27566	\$0.26411	\$0.27411
Average Monthly Bill (\$)	\$112.13	\$114.40	\$109.61	\$113.76

Source: PG&E. https://www.pge.com/pge_global/common/pdfs/customer-service/other-services/alternative-energy-providers/community-choice-aggregation/pce_rateclasscomparison.pdf

*The PCIA/FF fee represents the power charge indifference adjustment, a charge to recover PG&E’s costs for generation resources that are currently above the market rate, and the franchise fee imposed by the cities and counties in PG&E’s service territory for all customers.

Cape Light Compact. Cape Light Compact (the Compact) is a municipal aggregation organized in 2017 through a Joint Powers Agreement representing 21 towns and one county in the state of Massachusetts. The Compact was formed to provide competitive electricity prices through fixed rates and a stable power supply. The Compact procures a power supplier through a competitive selection process and is currently under contract with NextEra Energy Services Massachusetts, LLC (NextEra) for all customer classes. Energy prices are negotiated and set every six months for residential and small commercial customers and every three months for large commercial and industrial customers.

The Compact is an opt-out power supply option, with basic service provided by the incumbent utility, Eversource. Beginning in 2017, the Compact became a green aggregation, matching 100 percent of its customers’ annual electricity usage with RECs, exceeding the state’s renewable portfolio standards.⁷ All residential, commercial, and industrial customers are automatically enrolled in the Compact’s green aggregation program, and in 2018 the authority experienced an average residential opt-out rate of two percent. Although the power delivered to the Compact’s customers still comes from the regional New England power grid, NextEra Energy Services provides 100 percent renewable energy to customers by retiring (unbundled) RECs to match customer usage.

In addition, the program procures one percent more than the required amount of RPS-qualified Massachusetts Class 1 RECs on an annual basis. In 2020, the Massachusetts Class I REC requirement is 16 percent, meaning that NextEra will procure 17 percent of RPS-eligible RECs in addition to matching 100 percent of electricity usage with RECs sourced from outside of New England. In addition to the Compact’s opt-out green aggregation program, customers may opt in to a “Local Green” program to match annual electricity usage with either 50 or 100 percent Massachusetts RPS Class 1 RECs, providing added support for the development of local renewable resources in New England.

⁷These RECs, referred to as EarthEra™ RECs, are generated from NextEra Energy’s (the electric utility holding company of NextEra Energy Services) wind and solar facilities.

Premiums paid by the Compact’s customers for RECs, in addition to supplier and retail fees, are deposited into a trust fund established by NextEra. These funds are used to build new renewable energy products, with an emphasis on projects in the Northeast.

Pricing in the second half of 2019 for the three Compact programs, in addition to basic service provided by Eversource, is provided in the table below. As shown, the Compact’s standard rates were lower than Eversource basic service rates for all customer classes in 2019.

Table 3
2019 Pricing Under CLC Power Supply and Eversource Basic Service

Energy Plan	Residential	Commercial	Industrial
Cape Light Compact Standard Rate	10.699 cents/kWh	10.399 cents/kWh	9.556 cents/kWh
Cape Light Compact Local Green 50%	11.999 cents/kWh	11.699 cents/kWh	10.856 cents/kWh
Cape Light Compact Local Green 100%	13.399 cents/kWh	13.099 cents/kWh	12.256 cents/kWh
Eversource Basic Service (as filed at DPU)	10.836 cents/kWh	10.524 cents/kWh	9.665 cents/kWh

Source: Cape Light Compact. <https://www.capelightcompact.org/cape-light-compact-announces-lower-electricity-pricing/>. Pricing is based on the term beginning in June/July of 2019.

Opportunities and Challenges

Although community choice energy offers opportunities for communities to provide lower rates, increased renewable energy, and greater energy choice to its customers, a number of challenges have been identified that may hinder its expansion. First, implementing community choice energy is often dependent on enabling state and local legislation. Second, maintaining cost savings, local resource availability, policies for suspending or dissolving CCE programs, and customer awareness all pose challenges to implementing CCE programs. In addition, regulated markets such as California face unique challenges related to exit fees and resource adequacy requirements.⁸

⁸National Renewable Energy Laboratory. 2019. *Community Choice Aggregation: Challenges, Opportunities, and Impacts on Renewable Energy Markets*.