Community Choice Aggregation in California - An Opportunity for the Geothermal Industry

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Introduction:
The U.S. geothermal industry is currently experiencing difficult times. In a domestic power market that is increasingly focused on renewables and low-carbon sources of electricity, it is difficult to understand why the industry is still having growth problems. The high risks associated with early stage geothermal development, long development lead times, and the recent steep drop in the price of variable renewables such as solar and wind all have had a part to play in this situation. It has become critical that the geothermal industry look to new, less conventional opportunities to improve the current condition of the industry. In California one such opportunity is the rapidly growing Community Choice Aggregation market.

What is Community Choice Aggregation?
California’s Community Choice Aggregation (CCA) program, or as it is now more commonly called Community Choice Energy (CCE), is a policy mechanism created by state law whereby cities and counties can aggregate their citizen’s electric power load and purchase their electricity from independent energy service providers rather than from the incumbent investor owned utility (IOU). For multiple jurisdictions wishing to form a single CCA this can easily be achieved through a Joint Powers Agreement (JPA).

The CCA option became available primarily as a consequence of attempts to i) deregulate California’s electricity supply industry in 1996 through Assembly Bill (AB) 1890 and ii) mitigate the resulting energy crisis of 2000-2001. Partly as a remedy for the failed deregulation, and in order to salvage the consumer choice and potential for the acceleration of renewable energy development that had been promised under deregulation, the California legislature passed AB 117 (Migden, Chapter 838, Statutes of 2002) under which any CCA, legally authorized by the California Public Utilities Commission (CPUC), can purchase/generate and schedule its own electricity load for its customers. CCAs also enjoy several other statutory powers such as the ability to own and operate their own generation assets and ability to access public goods charge funds for efficiency programs. The incumbent IOU is still required to provide and maintain both transmission and distribution services and also, for practical purposes, provide metering and billing services for which it continues to be paid. The IOU and CCA both provide call centers and other customer services for their respective portions of the electricity delivery system, however, there is no statutory requirement for CCAs to provide call centers in addition to the existing IOU call centers.

A critical provision of this legislation, the lack of which has impeded similar attempts to provide direct access in the past, is that under AB 117 the CCA is an opt-out program. That is to say, when a city council or board of supervisors votes to form a CCA, residents within those jurisdictions are automatically enrolled in the CCA unless they opt-out and stay with the incumbent IOU.
The CPUC has regulatory authority for all state IOUs but has limited control over the routine operations of a CCA, which sets its own rates and implements its own customer programs such as net metering and feed-in tariffs, etc. The CPUC oversight focus is generally on compliance related to resource adequacy and assigning fees to the CCA to ensure that cost shifting between the IOU’s customers and the CCA’s customers does not occur.

Publically-owned utilities (POUs), such as Sacramento Municipal Utility District (SMUD) and Los Angeles Department of Water and Power (LADWP), along with the smaller rural electric cooperatives are ineligible to form CCAs under AB117. These differing mechanisms for providing retail electric power in California are compared in Figure 1 below.

Although California passed AB 117 in 2002 it was not until 2005 that the CPUC issued its final decision (D.05-12-041) on how CCAs were to be implemented. The decision immediately prompted numerous jurisdictions to seriously consider forming a CCA including 12 cities and counties that were part of a California Energy Commission, Public Interest Energy Research (PIER) Pilot Project. The project was designed to develop a better understanding of electricity supply choices and how renewable energy could be expanded in California’s electricity market. Published in 2009, results of the project (Community Choice Aggregation Pilot Project, CEC -500-2008-091) formed the framework on which early analysis of CCA’s potential was based. However, prior to 2010 only two jurisdictions actually reached the stage of submitting an Implementation Plan to the CPUC.

![Figure 1. Retail Electric Delivery Alternatives for California](image)

**History of Community Choice Aggregation**

California is not the first state to introduce community-based electrical power. The states of Ohio, Massachusetts, Rhode Island, Illinois, New Jersey, and more recently, New York, all have enacted state law that enables similar types of programs. Many of these programs have been successful and some have been in operation since as early as the mid-1990s. The largest community-based program is Northeast Ohio Public Energy Council (NOPEC) which serves a customer base of more than 400,000.

the document by which the CPUC authorizes its formation. The two, neither of which were part of the PIER project, were:

1) San Francisco which had passed its original CCA Ordinance back in 2004 but did not progress with launching a program until 2016, due to various labor, environmental and internal political issues.

2) San Joaquin Valley Power Authority formed a CCA in 2007 and had a CPUC-authorized Implementation Plan, but decided not to proceed with launch due to concerns surrounding the prevailing U.S. economic conditions in the late 2000s and uncertainty of future energy regulations.
Development of CCAs since 2010

As of June 2016 there are four operating CCAs in California but several others are close to launching service and many more are at some stage of being established.

Marin County, along with eight cities within the county boundary, formed a CCA in 2008 under a JPA and was the first to begin serving customers in 2010 as Marin Clean Energy (MCE). Since the launch MCE has expanded a number of times to include the unincorporated areas of Napa County and various cities in Napa, Contra Costa and Solano counties. An additional significant expansion is planned for September 2016 that will increase its total customers by approximately 47%.

Sonoma Clean Power (SCP) formed its CCA in 2012 and is also structured as a JPA. Launched in 2014, its service includes unincorporated parts of Sonoma County and eight cities within the county boundary. Healdsburg did not join SCP because it is already a POU. Both MCE and SCP used similar approaches in rolling out their programs, initially with only selected customers and then expanding to all customers after a few months. Opt-out rates for those wishing to continue having electric power supplied by the IOU have been in the vicinity of 10–12%.

Two additional CCAs, Lancaster Choice Energy (LCE) and CleanPowerSF (CPSF), launched in 2015 and 2016 respectively, but being managed by individual city agencies, neither uses the JPA option. LCE is managed by the City of Lancaster (southern California) and CPSF by the San Francisco Public Utilities Commission. As of July 2016 LCE has completed full roll out of services and CPSF has adopted a phased roll-out beginning with a small pool of commercial customers expanding to full roll-out over about four years. CPSF has also adopted a unique policy of marketing its 100% renewable energy product to early enrollment for any customer in the City.

All four operating CCAs offer their customers at least two basic products i) a standard (default) product that includes 35-50% renewable electricity, higher than incumbent utilities, and ii) a 100% renewable electricity product. In each case the price of the 100% renewable product comes at a premium. Each of the four CCAs have taken the rates of their local incumbent IOU as a baseline and then set their own rates such that, even with IOU surcharges imposed by the CPUC, their customer’s final bills are a typically a few percentage points lower than the equivalent IOU bill.

There are two additional CCAs, located south of San Francisco, that have been authorized by the CPUC and have set launch dates for the near future. Peninsula Clean Energy (PCE) will begin serving customers in October 2016 with full roll out by October 2017. Silicon Valley Clean Energy (SVCE) is scheduled to start service sometime in 2017. A summary table of the important data regarding existing and ‘close to launch’ CCAs is presented in Table 1 above.

### Table 1. Summary of Existing and Close-to-Launch CCA’s, as of July 2016

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Year of Launch</th>
<th>Year CCA Formed</th>
<th>No of Accounts</th>
<th>Annual Electric Load (GWh)</th>
<th>Peak Load (MW)</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marin Clean Energy (MCE)*</td>
<td>2010</td>
<td>2008</td>
<td>171,601</td>
<td>2,185</td>
<td>345</td>
<td>Marin Energy Authority (JPA)</td>
</tr>
<tr>
<td>Sonoma Clean Power (SCP)</td>
<td>2014</td>
<td>2013</td>
<td>199,201</td>
<td>2,209</td>
<td>364</td>
<td>Sonoma Clean Power Authority (JPA)</td>
</tr>
<tr>
<td>Lancaster Choice Energy (LCE)</td>
<td>2015</td>
<td>2013</td>
<td>52,080</td>
<td>425</td>
<td>213</td>
<td>City of Lancaster Public Utilities Commission</td>
</tr>
<tr>
<td>CleanPowerSF (CPSF)**</td>
<td>2017</td>
<td>2016</td>
<td>77,000</td>
<td>0</td>
<td>N/A</td>
<td>San Francisco Public Utilities Commission</td>
</tr>
<tr>
<td>Peninsular Clean Energy (PCE)</td>
<td>Est. 2016</td>
<td>2016</td>
<td>297,881</td>
<td>3,901</td>
<td>609</td>
<td>Peninsula Clean Energy Authority</td>
</tr>
</tbody>
</table>

**DATA SOURCES**

* MCE proposes to expand its service to an additional 80,000 customers in Sept 2016
** CPSF will be serving 77,000 accounts by Nov 2016 (Phase 1). Phase 2 will not begin for 4 -5 years.
¹ MCE Addendum No. 4 to the Revised Community Choice Aggregation Implementation Plan and Statement of Intent - April 2016
³ SCP, Business Operations Committee, meeting package - June 2016
⁴ G.Syphers CEO, SCP pers com
⁵ LCE, Revised Implementstion Plan - Feb 2015
⁶ M.Hyams CPSF pers com
⁷ CPSF Business Plan and Risk Assessment - Dec 2015
⁸ PCE, CCA Technical Study - Oct 2015
⁹ Draft Silicon Valley Community Choice Energy Technical Study - Nov 2015
MCE and SCP, the two CCAs with measurable financial and greenhouse gas reduction histories, have both demonstrated that the CCA concept can work successfully in California. Following their success, there has been a large interest from other communities in California.

Benefits of Community Choice Aggregation

There are many advantages to a jurisdiction forming a CCA including:

• Achieving state climate goals via reduction in greenhouse gas (GHG) emissions. In the case of three of the four existing CCAs this is by far the dominant motivation. Only LCE does not clearly state this as a primary objective in its formation documents.
• Electricity consumer choice, and in some cases, customer choice in selecting energy resources.
• Setting rates locally while maintaining price stability and diversifying energy supply portfolios.
• Incentives for local energy-related programs that can be tailored to the needs of a specific population.
• Adjusting the proportion of local electrical generation, particularly from renewable resources.
• Strengthening the local economy and creating employment opportunities
• Cost reduction - a significant financial benefit as CCAs are not-for-profit and consequently do not pay state and federal taxes.

While CCAs are subject to the California’s Renewable Portfolio Standard (RPS), which is currently mandated at 33% by 2020 and 50% by 2030, all operating CCAs have structured their portfolios such that they are already well above the required level and many have plans to exceed both RPS targets and deadlines. In California the definition of ‘renewable’ excludes large hydro (>30 MWe) and nuclear power plants, however the last remaining nuclear plant, Diablo Canyon, announced in June 2016 that it will not seek relicensing in 2025 when its current license expires. This may have a major impact on the power industry in California.

Risks and Barriers

As would be anticipated, formation of a CCA is not without some risk. At present the price of natural gas and wholesale electricity are both near to historic lows. A sharp increase in either of these energy sources could change the financial viability of a CCA and make it more vulnerable to pricing strategies by the IOUs.

Current pricing for CCA customers also has them paying a cost recovery surcharge to the incumbent IOU, as mandated under AB 117. This surcharge, known as the Power Cost Indifference Adjustment (PCIA) is designed to ensure that IOU customers are financially indifferent to the departing CCA load, i.e., IOU customers are not left paying the cost of longer term electric power contracts entered into by the IOUs on behalf of the CCA prior to its formation. There has been a significant amount of discussion around this topic and currently the CPUC is evaluating the details of how this surcharge is being calculated. The current PCIA structure adds approximately 12% to the CCA customer’s monthly costs - an amount that is not charged to IOU customers although those same costs are included in the IOU’s generation costs for their bundled customers.

Start-up costs can also present a hurdle for some CCA programs. Preparation of Feasibility (Technical) reports, Implementation Plans, JPA establishment, all need to be funded prior to any income stream from sales of electricity. For some larger jurisdictions this may not be a problem, but for smaller jurisdictions, start-up costs of $2-3 million dollars and bridge loans of $4 to $10 million to cover cash flow gaps can be a significant hurdle. Even after launch, working capital and establishing creditworthiness of the CCA will have a strong impact in its cost of doing business.

For any new venture that changes the status quo there will always be a potential for future regulatory and legislative risks especially when its changes impact the operations of an existing IOU monopoly. Under AB 117 CCA customers can always revert back to the IOU at any point in time, for a modest, one-time processing fee (typically set between $5 and $25).
What opportunities do CCAs provide the geothermal industry in California?

A reasonable estimate is that CCAs could be supplying 60% of California’s population with electricity within the next few years based on the success of existing CCAs in California and the interest in forming new CCAs (Table 2). It is also likely that annual load for most CCAs will be in the range of 2,000 – 3,000 gigawatt hours (GWh) with peak loads in the range of 400 – 600 MWe. This will change the retail electricity market in California and should provide a unique opportunity for the geothermal industry.

Table 2. CCA Future Potential by Population

<table>
<thead>
<tr>
<th>Date service began/</th>
<th>Program</th>
<th>Population of area served to be served</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Marin Clean Energy (MCE)</td>
<td>261,000</td>
</tr>
<tr>
<td>2014</td>
<td>Sonoma Clean Power</td>
<td>488,000</td>
</tr>
<tr>
<td>2013–2015</td>
<td>MCE adds Richmond, Benicia, El Cerrito, San Pablo, Napa Co. (unincorporated)</td>
<td>220,000</td>
</tr>
<tr>
<td>2015</td>
<td>Lancaster Choice Energy</td>
<td>161,000</td>
</tr>
<tr>
<td>2016</td>
<td>CleanPowerSF</td>
<td>852,000</td>
</tr>
<tr>
<td>2017</td>
<td>Peninsula Clean Energy</td>
<td>759,000</td>
</tr>
<tr>
<td>~2017</td>
<td>MCE adds interested entities from Napa and ContraCosta Counties</td>
<td>428,000</td>
</tr>
<tr>
<td>2017</td>
<td>Silicon Valley Clean Energy</td>
<td>600,000</td>
</tr>
<tr>
<td>~2017</td>
<td>San Jose</td>
<td>1,016,000</td>
</tr>
<tr>
<td>~2017</td>
<td>Alameda County and cities</td>
<td>1,535,000</td>
</tr>
<tr>
<td>~2017</td>
<td>Davis and parts of Yolo County</td>
<td>120,000</td>
</tr>
<tr>
<td>TBD</td>
<td>LA County &amp; cities</td>
<td>5,800,000</td>
</tr>
<tr>
<td>TBD</td>
<td>Monterey, Santa Cruz, San Benito Counties</td>
<td>750,000</td>
</tr>
<tr>
<td>TBD</td>
<td>Santa Barbara, San Luis Obispo, Ventura Counties</td>
<td>1,500,000</td>
</tr>
<tr>
<td>TBD</td>
<td>San Diego County and cities</td>
<td>3,263,000</td>
</tr>
<tr>
<td>Total population of communities with/launching/exploring CCA</td>
<td>17,753,000</td>
<td></td>
</tr>
<tr>
<td>California population (38,800,000) - 25% served by MUDS</td>
<td>29,100,000</td>
<td></td>
</tr>
</tbody>
</table>

Total percent eligible population to potentially be served by CCA by 2020: 60%

The geothermal industry should be ideally placed to supply comparatively smaller power purchase agreements (PPA) that CCAs need. In order to remain competitive and to fulfill their goals, CCAs will need to balance their load as best they can so they minimize buying electricity on the higher priced short-term market. With smaller baseload contracts, such as those capable of being offered by the geothermal industry, CCAs can better balance their portfolios even against variable wind and solar resources that have increasingly been undercutting the price of geothermal. Both SCP and MCE already have a PPA for geothermal energy from The Geysers, illustrating how many of the community values brought by CCAs can be supported.

The opportunities for co-locating geothermal sites with either solar PV or battery storage has already been recognized by a few geothermal developers. The growth of the CCAs should enhance this type of development and make it a more valuable option given that many of the more remote geothermal sites may well have available transmission capacity.

Conclusions

Over the next few years the California retail electricity market is likely to change substantially because of a variety of forces. Changes will be motivated partly by the 2030 RPS requirement of 50% renewables but also by communities wanting more carbon-free electricity. Forming a CCA is one of a number of mechanisms that will assist in achieving those goals. It is apparent from the rapid growth of the CCA movement over the past 2-3 years that this will have a marked effect on how electricity is purchased and supplied in a variety of energy markets within the state. Baseload geothermal power is ideally suited to supply a balanced energy supply portfolio that CCAs require to achieve their goals of greater renewable use at a competitive price.

Additional information and an interactive map showing the status of CCA development in every city and county in California can be viewed at www.cleanpowerexchange.org/.

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[34] GRC Bulletin | www.geothermal.org