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Governor

COMMUNITY CHOICE AGGREGATION PILOT PROJECT

PIER FINAL PROJECT REPORT

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Preface

The California Energy Commission's Public Interest Energy Research (PIER) Program supports public interest energy research and development that will help improve the quality of life in California by bringing environmentally safe, affordable, and reliable energy services and products to the marketplace.

The PIER Program conducts public interest research, development, and demonstration (RD&D) projects to benefit California.

The PIER program strives to conduct the most promising public interest energy research by partnering with RD&D entities, including individuals, businesses, utilities, and public or private research institutions.

PIER funding efforts are focused on the following RD&D program areas:

- Buildings End-Use Energy Efficiency
- Climate Change
- Energy Innovations Small Grants
- Energy-Related Environmental Research
- Energy Systems Integration
- Environmentally Preferred Advanced Generation
- Industrial/Agricultural/Water End-Use Energy Efficiency
- Natural Gas
- Renewable Energy Technologies
- Transportation

Community Choice Aggregation Pilot Project Final Report is the final report for the Community Choice Aggregation Pilot Project (Contract Number 500-03-004) conducted by the Local Government Commission. The information from this project contributes to PIER's Renewable Energy Technologies Program.

For more information about the PIER Program, please visit the Energy Commission's website at www.energy.ca.gov/pier or contact the Energy Commission at 916-654-5164.

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Abstract

Passage of the California Community Choice Aggregation legislation, Assembly Bill 117 (Migden, Chapter 836, Statutes of 2002), provides local governments with the ability to combine electricity loads within their communities and act on behalf of those customers to buy or choose electricity for them. In this pilot project, 12 California local governments evaluated the feasibility of implementing community choice aggregation programs through which a minimum renewable energy mix of 40 percent would be achieved, at least doubling the Renewables Portfolio Standard. Three groups of cities/counties went on to develop business plans through this program detailing how community choice aggregation programs for their regions would be organized, governed, funded, and operated to provide at least 50 percent renewable energy to participating customers. Researchers developed a variety of analytical models, reports, and tools to assist other cities and counties in understanding and implementing Community Choice Aggregation.

Keywords: Community choice aggregation, CCA, electricity loads, renewable energy, Assembly Bill 117, AB 117

Executive Summary

Introduction

California passed community choice aggregation legislation in 2002, Assembly Bill 117 (Migden, Chapter 836, Statutes of 2002), to give cities and counties the opportunity to aggregate the electricity demand of customers within their jurisdictions for procuring electric services. Through community choice aggregation, local communities gain a direct voice in energy resource planning, determining the types of generation technologies used to meet their electricity requirements, setting rates for generation services, and implementing local programs for energy efficiency, distributed generation, and other energy-related programs (that is, a community has the opportunity to select a form of energy generation and set rates for their community).

At the time AB 117 was passed, there was no experience in California with community choice aggregation; rules needed to be developed by the California Public Utilities Commission (CPUC) for how community choice aggregation programs were to be implemented and how the incumbent utilities were to interact with the community choice aggregation programs. Cities and counties also needed tools to understand the financial consequences (costs and benefits) and customer effects of offering community choice aggregation to their constituents. This pilot project was instituted to assist cities and counties in understanding the feasibility of forming community choice aggregation programs and the process that must be followed to begin offering community choice aggregation service.

Recognizing the nexus between the public's desire for more renewable energy and the authority granted by AB 117 for communities to procure electricity directly, the pilot project established a target for its participating cities and counties of 40 percent renewable energy content. Detailed economic studies were conducted to evaluate the ability of community choice aggregation to increase use of renewable energy, stabilize electricity costs, and provide cost savings to customers.

The California Energy Commission's Public Interest Energy Research (PIER) Program and the United States Department of Energy (U.S. DOE) funded this project.

Purpose

The project examined how community choice aggregation could be a vehicle to increase the amount of electricity generated in California from renewable resources. To determine if that was true, the project needed to determine if community choice aggregation was a viable option for local governments politically and economically, and if community choice aggregation electricity had a higher renewable content than the state's investor-owned utilities.

Project Objectives

The following objectives were identified for the project:

- Prepare a document that clarifies the costs, credits, rules, and protocols being established by the CPUC for implementing community choice aggregation.
- Develop a template of analytical and cost models that can be used by a variety of local governments in California in assessing ways to implement community choice aggregation to significantly exceed the state's 20 percent Renewables Portfolio Standard goal.
- Develop a community choice aggregation pre-feasibility study model.
- Complete detailed community choice aggregation feasibility analyses for three communities or groups of communities that demonstrate the template use and the way in which these communities can achieve a renewables portfolio mix of 40 percent.
- Develop and provide a guidebook, fact sheet, and workshops for local government elected leaders and staff that share the lessons learned with the pilot communities.

Project Outcomes

The pilot project met its goals through various reports, feasibility studies, and development of tools used toward understanding and implementing community choice aggregation in California communities.

The pilot project created economic models to determine the feasibility of community choice aggregation in 12 communities throughout the state with representation in each of the three major investor-owned utility service areas as shown in Table 1 below.

Table 1: Pilot Project Communities by Major Investor-Owned Utility (IOU) Service Area.

Bay Area (PG&E)	Southern CA (SCE)	San Diego Area (SDG&E)
Berkeley Emeryville Oakland Marin County (11 Cities) Pleasanton Richmond Vallejo	Beverly Hills Los Angeles County West Hollywood	San Diego County San Marcos

Source: Authors

In total, the electricity consumption of the pilot project participants represents approximately 8 percent of the total electricity sales of Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) as shown in the following Table 2.

Table 2: Electricity Consumption of Pilot Project Participants.

Participant Load	PG&E	SCE	SDG&E	Total
Annual Gigawatt-hour (GWh)	5,741	5,117	1,193	12,051
Peak Megawatt (MW)	1,105	990	450	2,546
% IOU Sales	7.9%	7.3%	7.4%	7.6%

Source: Authors

The studies' results were that forming a community choice aggregation could bring rate benefits to customers, anywhere from 1 percent to10 percent of bills on average, due primarily to certain capital financing advantages the community choice aggregator would possess. The facts that a community choice aggregator can directly invest in generation facilities, eliminating the profit (return on equity) and associated taxes that must typically be recovered through utility rates, and that a community choice aggregator can use tax-exempt bonds to finance its acquisition of electric resources, were found to provide sufficient cost advantages to enable the community choice aggregator to increase the level of renewable energy procurement above the state-mandated 20 percent without adversely affecting rates.

The feasibility studies established an economic framework for evaluating the costs, benefits, and risks of implementing community choice aggregation. The studies identified the critical quantitative factors that must be considered in evaluating a community choice aggregation program, including:

- Projected utility generation rates.
- Customer usage characteristics and community load profile.
- Wholesale energy costs, including energy, renewable energy, and capacity.
- Scheduling coordination costs.
- Operations, administrative, and general costs.
- Non-bypassable charges assessed by the incumbent utility.

The potential benefits from community choice aggregation identified in the feasibility studies include:

- Increased customer choice.
- Local control of resource decisions and rates.
- Lower electricity costs.
- Opportunities for innovative new energy programs (energy efficiency, distributed generation, economic development, and so forth).
- Support for local infrastructure investment.

Several communities in the San Francisco Bay Area and the West Los Angeles area examined forming a community choice aggregation to the point where they have developed business plans and are contemplating forming public agencies for implementing community choice aggregation. Marin County, the East Bay cities of Oakland, Berkeley, and Emeryville, and the cities of Beverly Hills and West Hollywood developed precursor studies to the Community Choice Aggregation Implementation Plan that must be adopted and filed with the CPUC before a community choice aggregator can begin service. Each plan established renewable energy targets that are at least 50 percent by 2017, and the plan for Marin County is to offer 100 percent renewable energy to all customers within Marin County on a voluntary basis. The Marin program is projected to reduce overall greenhouse gas emissions attributable to the region from all sectors (including transportation) by between 10 percent and 17 percent within three years.

The pilot project produced an implementation plan template that can be used by any community wishing to form a community choice aggregation. The template, which is completed by inputting relevant information into a database, creates a draft implementation plan containing the legally required information a community would need to be certified by the CPUC. The resulting document can then be edited as appropriate to reflect the unique circumstances, goals, and objectives of the particular user.

Several workshops were conducted and informational materials were created to educate civic leaders and other interested parties in the community choice aggregation (CCA) program. While some of the workshops focused on the specifics of community choice aggregation, others were directed toward renewable energy and how it could be incorporated into the overall goals of a community. Informational materials included a website with message board, frequently asked questions sheet, guidebook, and newsletter.

Besides the feasibility studies for each community, other reports were created:

- *Roadmap for Renewable Energy Development/Procurement.* To help local government project participants understand the implications of providing renewable energy and providing it at the desired 40-50 percent of the portfolio levels, a report was developed. The *Roadmap for Renewable Energy Development/Procurement* quantified the renewable resource requirements of the municipalities that were participating in the project and assessed the costs and availability of renewable resources likely to be available for use in their programs. Assessments were made for renewable resource usage constrained by transmission limitations in the 2010 and 2017 timeframes for community choice aggregators located within the service territories of PG&E, SCE, and SDG&E. The report also discussed tax-advantaged financing options for generation development available to municipalities that become community choice aggregators. The full report can be found in Appendix A.
- *CPUC Decisions.* The pilot project also completed project report documents discussing the impacts of CPUC rulings in Rulemaking 03-10-003, which set out to turn AB 117 into working rules and regulations. The rulemaking was in three parts: Phase 1, which dealt

primarily with cost and pricing issues; Phase 2, which addressed other issues not dealt with in Phase 1; and a supplemental decision that modified and/or clarified a few issues from the original two decisions. These full project reports can be found in Appendix B.

Conclusions

Analysis has shown that community choice aggregation may be a viable alternative for some communities that are willing to accept the risks that go along with it. The benefits to a community would be lower rates and/or increased use of renewable energy, and greater local control of a community's energy policy.

Of course, given the fact that no community choice aggregator has yet been created in California and many things about the future are uncertain, there are risks involved. Energy costs and the path of investor-owned utility rates are both uncertain aspects that could greatly affect community choice aggregation feasibility for a community. The pilot project feasibility studies attempted to address some of these uncertainties and determined ranges of potential benefits that communities could then use to assess whether they wished to move forward with a community choice aggregation program. Several communities have continued to move forward in developing of a community choice aggregation program, while others have not.

Recommendations

The primary impediments to community choice aggregation development are the upfront costs associated with studying, planning, and starting up the programs; the perception that community choice aggregation entails a great deal of risk relative to the near-term benefits that are obtainable; and the potential for opposition by the incumbent utility. Until the first community choice aggregation program is able to prove the concept in actual practice, the conservatism of most local governments favors the status quo. Policy-makers should consider establishing market transformation policies to encourage and support the early community choice aggregation pioneers. Potential policies to promote community choice aggregation include:

Reforms to Enhance Program Economics

- Allocate a share of the public goods funds collected by the incumbent utility from the community choice aggregator's customers to the community choice aggregator for administration of local energy efficiency programs.
- Allocate a share of the public goods funds collected by the incumbent utility from the community choice aggregator's customers to offset/subsidize start-up costs for early adopters of community choice aggregation programs.
- Reform the method for calculating the community choice aggregation cost responsibility surcharge to reflect the load profile of the community choice aggregation program when determining the market price benchmark (that is, a shaped price rather than a baseload price).

- Remove utility renewable energy costs from the community choice aggregation's cost responsibility surcharge, or, for all renewable resources where the costs of such resources are recovered through a non-bypassable charge from the incumbent utility and allocate a proportionate share of the renewable energy credits to the community choice aggregator.
- Exclude any new utility generation and contracts from the community choice aggregation's cost responsibility surcharge or other similar non-bypassable charges.
- Provide limited exemptions from paying the cost responsibility surcharge for community choice aggregation programs that develop new power plants or procure renewable energy in amounts that exceed the Renewables Portfolio Standard.
- Provide limited exemptions from the cost responsibility surcharge for community choice aggregation programs that become operational before a certain deadline (for example, 2012).
- Consider implementing short-term incentives, such as incremental tax incentives or credits, to energy service providers that serve community choice aggregators loads with renewable energy amounts that exceed the Renewables Portfolio Standard.

Structural Reforms to Facilitate Community Choice Aggregation

- Enforce the duty of the incumbent utility to cooperate fully with community choice aggregators by requiring the utility to take all reasonable actions to facilitate community choice aggregator's efforts.
- Impose standards of conduct on the distribution utilities to prevent the utility from marketing against or otherwise undermining the community choice aggregation.
- Reform the rules governing utility billing services to community choice aggregators to give equal priority to collection of community choice aggregator charges and utility charges.
- Eliminate the requirement for all customer opt-out requests to be processed by the utility rather than the community choice aggregation.
- Authorize special districts, in addition to cities and counties, to become community choice aggregators.
- Provide financial incentives to investor-owned utilities to encourage community choice aggregation formation within their service territories.

Education and Outreach

- Conduct ongoing statewide education outreach to local governments on energy supply, renewable energy, and efficiency.
- Establish a pilot project and funding for community choice aggregation investment in renewable energy technologies.

- Obligate utilities to provide information to cities and counties annually disclosing the number of customers and electric consumption within each local government's jurisdiction, utility spending on energy efficiency programs within the jurisdiction and the associated electricity savings, and collections of public goods charges from customers within the community.
- Develop a tool to estimate reductions in greenhouse gas emissions levels from various actions that can be undertaken by cities and counties, including providing renewable energy through a community choice aggregation.

It is also recommended that energy policies consider community choice aggregation issues when they are developed, whether the policies are established within a community choice aggregation-specific rulemaking. Due to the lack of any community choice aggregation organizations at this time, and therefore little organized community choice aggregation advocacy, it is important that the CPUC and other parties include community choice aggregation in their policy considerations.

Benefits to California

The pilot project has done much to increase awareness of community choice aggregation, create tools and analyses for communities to use, and illuminate through the various feasibility studies what issues and variables are most relevant in determining community choice aggregation viability. The pilot project has demonstrated how a community choice aggregation can increase the use of renewable energy with little or no increase in customer rates. A process for creating a community choice aggregation implementation plan has been developed through this pilot project that should prove invaluable to cities and counties that are interested in exploring community choice aggregation. The work performed for this project should help create community choice aggregation programs that will provide greater energy choice and local control over energy matters to the people and businesses of California.

1.0 Introduction

1.1. Background and Overview

Providing greater electricity choices for California consumers and expanding application of renewable energy in California's electricity market were two goals that the Public Interest Energy Research (PIER) Community Choice Aggregation (CCA) Pilot Project sought to address. Specifically, this project sought to determine if CCA was a realistic, cost-effective avenue to increase renewable generation in California beyond the state-mandated 20% energy portfolio share for all electricity providers.

Community Choice Aggregation legislation has opened up new possibilities for local governments and their constituents in California with respect to their energy options. Starting with California's Electricity Restructuring law, Assembly Bill 1890 (Brulte, Chapter 854, Statutes of 1996), competition for the generation portion of consumer electricity purchases was allowed. With CCA legislation (Assembly Bill 117 (Migden, Chapter 836, Statutes of 2002)), cities and counties (or groups of them) can perform the generation procurement function for their jurisdictions in lieu of the current provider[1]. The Renewables Portfolio Standard (RPS) legislation (Sher, Senate Bill 1078, Chapter 516, Statutes of 2002) requires that any load-serving entity (LSE), i.e., an entity that provides electricity to the California grid for delivery to end-use customers via its own generation or through contracts, must have a 20% renewable content by 2017 (Senate Bill 107 (Simitian, Chapter 464, Statutes of 2006) moved the 20% requirement to 2010).

This project was conceived in order to help local governments understand the opportunities and risks associated with CCA and to help a limited number of cities and counties explore the feasibility of CCA for their communities, and to share the lessons learned from the project with other local governments in California.

1.1.1. AB 1890, Electricity Restructuring

California has historically had high electricity rates compared with other states. It has also had one of the most aggressive energy efficiency programs in the nation. Per capita electricity consumption in California has remained relatively stable, while nationwide it has continued to grow.

Looking to reduce their costs, large consumers of electricity pushed for electricity restructuring in California in the mid-1990s in the form of AB 1890, which opened the generation portion of electricity delivery to competition (the transmission and distribution of the electrons stayed with the utilities). The ability to choose an electricity provider is known as *direct access* (DA). As part of the benefit to smaller electricity customers, residential rates were reduced by 10% and capped for a period of time. AB 1890 only applied to areas served by California's investor-owned utilities (IOUs): Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric

1. The utility would still be responsible for the delivery of the power to end-use customers over its transmission and distribution system.

Company (SDG&E), and Southern California Edison Company (SCE). Customers of municipal utilities, such as Los Angeles Department of Water and Power and Sacramento Municipal Utility District, were not affected by the law.

AB 1890 brought new electricity providers into California. This competition was expected to lower electricity prices across the state. Each electric customer had to actively select a new provider in order to switch. This is known as an *opt in* system, where customers opt in to a new provider's program. At the time, those that did nothing stayed with their existing utility. Under this system, most new providers focused their marketing dollars on getting the biggest industrial, commercial, and institutional customers to change. Much less effort was made to get the smaller, yet more numerous, residents and small businesses to switch. Those that did opt in usually chose higher-priced *green* electricity.

In 2000 and 2001, everything changed in California. With prices for electricity spiraling out of control and with IOUs unable to pass those higher costs on to residential customers, PG&E and SCE were building up debts owed for power at an alarming rate. Eventually they saw their credit ratings slashed and they were no longer able to buy power on the open market. PG&E filed for bankruptcy. SCE nearly did the same. In order to keep electricity flowing in the state, the California Department of Water Resources (DWR) stepped in and bought power at very high prices for the utilities, including SDG&E, primarily through long-term contracts (it was not until 2003 that the IOUs resumed procuring energy for themselves). DWR continues to collect money from the IOUs' customers to pay for the energy in these contracts. Some of these higher-priced contracts have since been renegotiated and lower prices or refunds have resulted. Some of these contracts will be in effect until 2011 or later.

In order to prevent existing IOU customers from abandoning the utilities to avoid these high-priced contracts, D Awas suspended. Existing DA contracts remained in effect, but no new DA contracts could be signed. Many DA providers, including all of the ones providing service to residential customers, pulled out of the California market. Customers of the companies that left the state were returned to the service of their IOU.

1.1.2. AB 117, Community Choice Aggregation

Partially in response to the lack of options for small consumers under AB 1890 and the perceived failure of the IOU to manage electricity costs for consumers, CCA passed the California legislature and was signed into law in 2002. The law, AB 117, allows cities and counties, or groups of cities and counties, to serve the load of every customer within their jurisdiction through their own generation or through market procurement of electricity. This is an *opt out* system, where once a CCA is formed, all electric customers within its jurisdiction become customers of the CCA unless they opt out, i.e., they choose to stay with their existing provider. This removes a huge hurdle for any community wishing to provide electricity to its constituents. A city or county could have aggregated community load under AB 1890, but would have had to actively market to constituents. This is no longer the case.

One of the provisions of AB 117 is that every residential customer within a CCA's territory must be offered CCA service. Other customer categories, such as industrial, commercial, and

institutional, do not have to be offered service. Under the law, each customer has to be given four chances to opt out of CCA service without cost within 60 days either side of the date they would be switched over to CCA service. After that time, customers leaving CCA service could be charged an exit fee.

In order to prevent IOU bundled customers (customers who continue to receive generation, distribution, and transmission service) from being adversely affected by the existence of a CCA, meaning that they remain neutral to the formation of the CCA with respect to their rates, AB 117 calls for a Cost Responsibility Surcharge (CRS) to be assessed on CCA customers. The CRS basically compares the IOU generation cost system-wide against the market price of electricity, and charges CCA customers the difference if the IOU cost is higher. There is no refund if the IOU cost is lower, but any negative differences can be carried forward to offset future higher costs.

1.1.3. SB 1078, Renewables Portfolio Standard

The State of California has expressed an interest in generating more in-state electricity from renewable resources, defined primarily as solar, wind, geothermal, biomass, and small hydroelectric (less than 30 megawatts). This interest has been formalized in Senate Bill 1078, which set a requirement of 20% renewable resources for each of the IOUs and for other load-serving entities by 2017. Since its passage, the date to reach the 20% renewable resources requirement has been moved up to 2010 (SB 107). The state's goal is to reach 33% by 2020, although this has not been codified into law at this point. CCAs will be LSEs, the same as IOUs and DA providers, and they all will be subject to the same RPS.

1.1.4. California Public Utilities Commission Rulemaking R.03-10-003

The California Public Utilities Commission (CPUC) was charged with implementing AB 117. It did so through Rulemaking R.03-10-003. The rulemaking was necessary to interpret the provisions of the law and to set the rules for how a CCA program would operate. The CPUC split its decision into two phases. Phase 1 focused on pricing and cost issues while Phase 2 focused on any other issues relating to the implementation of CCA. Some of the major outcomes of the CPUC decision are discussed here.

One of the most significant aspects of these decisions is that the CPUC has limited oversight of CCAs (note that CCA refers to both Community Choice Aggregation and Community Choice Aggregator). Its role is limited to overseeing the relationship between a CCA and an IOU, and not the relationship between the CCA and its customers[2]. This means that rate-setting, procurement, customer protection, and so on, are the purview of the CCA governing body and not subject to CPUC or IOU input. How these issues will be handled is among the many things that a CCA must include in its Implementation Plan, which must be filed with the CPUC. The CPUC will certify the plan's completeness, but does not have the authority to approve or reject the plan. This is significant in that a CCA will not have to go through a long CPUC process that

2. The CPUC will still have oversight on issues that affect all LSEs, such as RPS compliance and resource adequacy.

can be delayed by outside interests. Instead, a CCA governing board will answer directly to its customers/constituents.

Although customer usage data is confidential information between the IOUs and their customers, the decision ruled that a potential CCA has the right to receive anonymous customer usage data from the IOU, some for free, some for cost. This is necessary because without knowing the detailed load profile in its community, a city or county would be at a loss to determine if it made economic sense to establish a CCA program, and it would be impossible to plan without access to electric customer data within the potential CCA's territory. This aspect of the decisions assures that potential CCAs get the information they need in order to make an informed decision about establishing a program.

The CPUC decided that a CCA could phase in its program, i.e., it would not have to serve all of its customers from Day 1. If a CCA chooses to phase in its program, that phasing strategy must be identified in its Implementation Plan (IP). So far, the San Joaquin Valley Power Authority (SJVPA) is the only CCA program that has filed an IP with the CPUC and has included a plan to phase in its customer base.[3] The SJVPA has chosen to serve its customers in the following order:

- First, municipal accounts will get CCA service. This will be a relatively small number of accounts whose opt out rate is expected to be zero. This will give the CCA a chance to work out any problems with billing, data transfer, etc., with a customer base that is small and less likely to be upset if a problem arises.
- Second served will be the industrial customers who again constitute a small number.
- Third served will be commercial customers.
- Finally, residential customers will be served.

The CCA plans to serve all customers within its first year of operations.

The CRS has already been mentioned and in theory will be calculated to leave IOU bundled customers indifferent. The CRS will be different for the three IOUs as their generation portfolios are not the same. The CRS will be based on the IOU's generation portfolio the year a CCA customer starts receiving CCA service or commits to start service, and will be recalculated each year as DWR contracts end and new IOU contracts are signed. This variation in CRS, based on start date, is known as *vintaging*. Should a CCA choose to phase in its customers over more than one calendar year, the CRS vintage may be different for customers who started service in different years.

The first phase of the rulemaking was completed in December 2004 and the decision (D.04-12-046) can be found at: *http://www.cpuc.ca.gov/word_pdf/FINAL_DECISION/42389.doc*

3. The San Joaquin Valley Power Authority was not part of this Pilot Project but participated in many of the workshops during the project.

The second phase was completed in December 2005 and the decision (D.05-12-41) can be found at:

http://www.cpuc.ca.gov/word_pdf/FINAL_DECISION/52127.doc

Decision 06-02-006 modified the Phase 2 decision to allow a CCA to change the date of its binding commitment to serve customers by no more than three months: *http://www.cpuc.ca.gov/word_pdf/FINAL_DECISION/53767.doc*

Decision 07-01-025, *Order Adopting Modifications to the CRS Applicable to CCA*, changed the way a CRS is calculated to one that compares an IOU's projected portfolio average cost to a market benchmark to avoid an after-the-fact truing up process required in the original decision: *http://www.cpuc.ca.gov/word_pdf/FINAL_DECISION/64027.doc*

In addition to R.03-10-003, there are several other related CPUC proceedings that affect CCAs. These include:

- Renewable Portfolio Standard (R.04-04-026, R.06-05-027, R.06-02-012)
- Resource Adequacy (R.05-12-013)
- Direct Access/Net Metering (R.06-12-002/R.07-05-025)
- Energy Efficiency (R.06-04-010)
- Climate Change/Greenhouse Gases (R.06-04-009)
- IOU Procurement (R.04-04-003, R.06-02-013)
- IOU General Rate Cases

1.2. Project Objectives

The following objectives were identified for this project:

- Prepare a document that clarifies the costs, credits, rules, and protocols being established by the CPUC for implementing CCA.
- Develop a template of analytical and cost models that can be used by a variety of local governments in California in assessing ways to implement CCA in such a fashion as to significantly exceed the state's 20% RPS goal.
- Develop a CCA Pre-feasibility Study Model.
- Complete detailed CCA feasibility analyses for a minimum of three communities or groups of communities that demonstrate the use of the template and the way in which these communities can achieve a renewables portfolio mix of 40%.
- Develop and provide a guidebook, fact sheet, and workshops for local government elected leaders and staff that share the lessons learned with the pilot communities.

2.0 Project Approach

2.1. CPUC Decision-Making Process (Objective 1)

The California Public Utilities Commission established Rulemaking 03-10-003 in 2003 to address implementation of AB 117. The project team followed the progress of R.03-10-003 and reported in a timely manner on the implications of any decision arising from it. This was necessary as rulemaking can be a complex and difficult process, and reports that culled the vital information and analysis out of the various decisions that arose from R.03-10-003 would help make the information more accessible. The reports produced by the project team on CPUC decisions are included in Appendix B.

2.2. Feasibility Studies (Objectives 2, 3, and 4)

2.2.1. Participant Selection

The project initially intended to work with three communities, or groups of communities, in California as pilot communities for the feasibility studies. One community, or one group of communities, would be chosen for study in each of the three IOU service territories. The project scope of work would take these communities up to the point where they could file their Implementation Plan with the CPUC. Very early on, the project team decided that more communities needed to be included in the study to better assure that at least one community in each IOU service territory would stay with the project up to the point of filing an IP. As a result, twelve communities participated in the project, each providing matching funds to cover the additional costs for feasibility studies and community outreach.

The project worked only with communities interested in doubling the state-mandated RPS of 20% to 40% or more. The following communities became project participants:

- PG&E Territory
  - City of Berkeley
  - City of Emeryville
  - City of Oakland
  - City of Pleasanton
  - City of Richmond
  - City of Vallejo
  - County of Marin
- SCE Territory
  - City of Beverly Hills
  - City of West Hollywood
  - County of Los Angeles

- SDG&E Territory
  - City of San Marcos
  - County of San Diego

The project team held initial meetings with participating community staff and, when possible, with elected officials. Multiple meetings and conference calls and occasional workshops were scheduled throughout the project period with these pilot communities to discuss various issues, from obtaining energy use data to developing local community values for incorporation into community studies and, eventually, Implementation Plans.

Much of the project work was done with community staff members. The project team and the community staffers also coordinated to give presentations to city council members, county supervisors, and other interested parties.

2.2.2. Development of Base Case Feasibility Studies

The purpose of the Base Case Feasibility Studies was to develop a comparison between the rates of a potential CCA program, taking into account specific community values, and the rates of the investor-owned utility currently serving the community(ies). In preparing the financial evaluation for a CCA program, the project team did a thorough analysis of:

- The IOU's forecasted rates (including CRSs.
- CCA energy or commodity costs (including generation ownership, power purchase contracts, renewable energy contracts, and spot-market purchases).
- California Independent System Operator (California ISO) charges.
- Operations and scheduling costs.
- Financing costs.
- Revenue offsets and available financial incentives.

Each of these items was factored into a pro forma analysis, which compared the total costs of operating the CCA program with total costs of continuing to take retail utility service from the IOU.

As the IOU would continue to provide electricity delivery over its existing transmission and distribution system at the same cost for all of its customers whether they are CCA customers or retained bundled service customers, the analysis only needed to evaluate the costs associated with wholesale electric commodity procurement and related business expenses of the CCA. The feasibility studies began the planning horizon in the year of the study and then projected costs forward for 20 years.

The Base Case Feasibility Studies also provided background information on Community Choice Aggregation, a description of the potential benefits and risks of operating a CCA program, requirements for filing a CCA Implementation Plan, a description of renewable energy

resources including their constraints, the assumptions used in the studies, and pro forma results.

2.2.3. Community Values

The project team met with city and county staff members to determine particular community values that should be reflected in a CCA program. As previously noted, only communities interested in at least doubling the statewide requirement of 20% renewable energy procurement were invited to participate in this project. However, some individual communities had additional specific interests. For example, some communities wanted higher RPS levels; some wanted to avoid certain types of renewable or conventional generation (for the non-renewable portion of the portfolio); some were interested in local economic development; and so on. To the extent possible, these local values were incorporated into the feasibility analyses for those communities.

2.2.4. Data Collection

A detailed definition of the community electric power needs was required to assess the economic viability of a CCA providing energy as an alternative to its IOU. The project team performed load analysis and constructed a load forecast based on data provided by the IOU in response to the community's formal request. The community's annual hourly load shape was developed from this data, and a determination was made regarding the associated energy supply requirements. The time-of-use supply requirements served to define the types of resources necessary to supply electric energy to the CCA.

The CPUC decision directed each of the IOUs to provide certain data at no cost. Additional data was required for this analysis for which there was additional cost. Examples of data request letters for each of the IOUs are included in Appendix C.

Community electric load data provided by the IOUs was 12-month, year-to-date energy consumption by rate class and zip code. The IOUs provided the data for four rate classes (residential, commercial, agricultural, and lighting). The load information was treated as prototypical for energy consumption for the data year. The IOUs' public static load profiles were employed to allocate monthly energy (kWh) into each hour of the month, and then to each of the 8,760 hours within the year.

2.2.5. Key Variables and Study Assumptions

Variables and assumptions for the feasibility studies changed over the course of the project as more decisions were made by the CPUC. Initial project studies were completed in 2004, before either phase of the decision was complete. Revised studies that were done in 2006 and 2007 for some of the participating local governments reflected these CPUC decisions. Input assumptions were consistent for all project participants in order to compare results across jurisdictions and IOU territories. The key assumptions are discussed in detail in Section 4 of each of the feasibility study reports (see Appendix D).

2.2.6. Analysis

Estimates of CCA cost savings potential were assessed by comparing CCA costs to the rates that would otherwise be charged by the IOU. The base case utilized the IOUs' current rate designs and adjusted them for expected changes in IOU generation costs in order to project those costs for the 20-year study period.

The financial pro forma analyses compared the total costs of operating the CCA program with the total costs of continuing to take retail utility service.

Elements contained in the analyses include:

- Utility Forecast Generation Rates
  - Utility Retained Generation
  - Qualifying Facility Generation
  - Bilateral Power Purchase Contracts
  - New Renewable Energy Purchases
  - California ISO Charges
  - Residual Spot Market Purchases or Sales
- CCA Energy (Commodity) Costs
  - Spot Market Purchases
  - Power Purchase Contract
  - Renewable Energy Contracts
  - Generation Ownership, Renewable and/or Conventional
  - CRS
- CCA California ISO Costs
  - Ancillary Services/Reserves
  - Grid Management Charges
  - Deviation Charges
- CCA Operation and Scheduling Costs
  - Electricity Procurement
  - Risk and Credit Management
  - Load Forecasting
  - Rates
  - Account Services
  - Administration

2.2.7. Scenarios

CCA resource supply portfolios contained a diverse mix of resources that was reflective of a strong commitment to promotion of renewable energy. Financial pro forma were prepared for four supply portfolios that differed by varying the mix of renewable energy in the portfolio and by whether the CCA would own generation resources used to supply electricity to the program. The four supply scenarios are described below.

Alternative Supply Scenario 1: This alternative assumed the CCA would double the renewable content of the IOU portfolio (i.e., 40%, with some communities opting to go even higher) and would purchase all of its load requirements from the open market.

Alternative Supply Scenario 2: This alternative assumed the CCA would match the 20% renewable content of the IOU portfolio and would purchase all of its load requirements from the open market.

Alternative Supply Scenario 3: This alternative assumed the CCA would double the renewable content of the IOU portfolio (i.e., 40%, with some communities opting to go even higher) and would produce electricity from resources it owned. The portfolio also included power purchases through five-year contracts and spot market purchases to supplement the production of the CCA's generation resources. In most cases, it also included ownership of both conventional and renewable resource facilities. Initially, the portfolio only contained market purchases similar to Scenario 1, but within a few years included production from CCA-owned generation.

Alternative Supply Scenario 4: This alternative is similar to Scenario 3 except that the portfolio matches the renewable content of the IOU portfolio (20%) with a corresponding increase in the capacity of natural gas-fired generation by the CCA.

For each of these scenarios, the total cost of service for the CCA program was calculated and compared to the generation costs of the corresponding IOU. The difference represented potential savings or costs associated with the CCA program. This differential was shown for each year in the study period. Costs or savings were shown in both millions of dollars per year and as a percentage of customers' monthly electric bills.

In addition to these supply scenarios, sensitivity cases were developed for some of the variables (natural gas prices, IOU forecasted rates, and CRS, for example). Sensitivity analyses identified upper and lower bounds on the expected financial results from implementing a base case CCA program. The sensitivities used were:

- Natural gas and power prices (+/- 25%).
- Cost Responsibility Surcharges (+/- 50%).
- IOU system average rate projections (1% to 3% annual growth).
- IOU revenue allocation changes to reduce cross subsidies.

2.2.8. Base Case Feasibility Study Revisions

Draft feasibility studies were shared with project participants for comments. Some of the studies were submitted to an independent third party for peer review (Marin, Oakland, Berkeley). Also, more detailed information regarding customer billing data from the IOUs was made available through CPUC decisions. Each of these actions offered opportunities for refining the studies. For the communities that wished to continue researching feasibility after receiving these preliminary results, further feasibility studies were conducted. To garner more accurate information about energy pricing, including renewable resource availability and cost, a Request for Information was developed and responses used in the refined analyses. Instead of the generic renewable resource mix that the Energy Commission expected for the state to meet the 20% RPS requirement and the generic costs for various renewable energy resources, the project team was able to get numbers directly from energy suppliers in the market.

2.2.9. Roadmap for Renewable Energy Development/Procurement

To help local government participants in the project understand the implications of providing renewable energy, and providing it at the desired 40-50% of the portfolio levels, a report was developed. The *Roadmap for Renewable Energy Development/ Procurement* quantified the renewable resource requirements of the municipalities that were participating in the project and assessed the costs and availability of renewable resources likely to be available for use in their programs. Assessments were made for renewable resource utilization constrained by transmission limitations in the 2010 and 2017 timeframes for CCAs located within the service territories of PG&E, SCE, and SDG&E, based on prior Energy Commission studies and IOU transmission studies. The report also provided a discussion of tax-advantaged financing options for generation development available to municipalities that become Community Choice Aggregators. The report can be found in Appendix A.

2.2.10. Implementation Plan Template

In order to assist project participants and other local governments interested in pursuing CCA in the future, the project team developed an Implementation Plan template. The template included all of the legally required elements for an Implementation Plan. Once a potential CCA collects relevant input data and puts it into a database (included with the template), the information is automatically placed into an IP for the CCA.

Required information in an IP includes:

- An organizational structure of the program, its operations and funding.
- Rate-setting policies and other costs to participants.
- Provisions for disclosure and due process in setting rates and allocating costs among participants.
- The methods for entering and terminating agreements with other entities.
- The rights and responsibilities of program participants, including, but not limited to, customer protection procedures, credit issues, and shutoff procedures.
- Termination of the program.

- A description of third parties that will be supplying electricity under the program, including, but not limited to, information about financial, technical, and operational capabilities.

A CCA must prepare a statement of intent with the Implementation Plan. Any CCA program must provide for universal access, reliability, equitable treatment of all classes of customers, and any other requirements established by state law or by the CPUC. The CPUC has the responsibility to review the IP for completeness and will use the IP to determine the CRS for that CCA's customers. The CPUC has 90 days to certify the IP (in its limited oversight of CCAs, the CPUC does not approve the IP), and an additional 10 days to determine the CCA's CRS. The Implementation Plan template is included in Appendix E.

2.3. Technology Transfer (Objective 5)

In order to share the information learned by the project with interested local governments in California and others, the project team developed a four-page fact sheet directed toward local decision-makers, and a guidebook with more detailed information. The Implementation Plan template and renewable energy roadmap are additional materials that will facilitate technology transfer. The fact sheet is included in Appendix F, and the guidebook in Appendix G.

Workshops and speaking engagements were also a part of the technology transfer activities for the project. Workshops were held in Beverly Hills, Escondido, Oakland, Petaluma, San Luis Obispo, and Santa Barbara. Additional speaking engagements included the Southwest Renewable Energy Conference and the League of California Cities' annual conference.

3.0 Project Outcomes

The project team worked for over four years to complete the project, in part due to the lengthy decision-making process at the CPUC. The project was initially expected to last only two years. As expected, community interest has varied among the participants, with some currently having only marginal interest, while others are still actively pursuing CCA investigation. A description of project outcomes follows.

3.1. CPUC Decision-Making Process (Objective 1)

The project team produced three documents clarifying the rules established by the CPUC for CCAs. The first document followed the Phase 1 decision in December 2004. The second document addressed the Phase 2 decision in December 2005. The final document on the supplemental ruling was completed in November 2007. The three documents are included in Appendix B to this report.

Phase 1. The Phase 1 decision (D.04-12-046) addressed pricing and cost issues attributable to CCAs. Primarily, it discussed the cost responsibilities of a CCA with respect to those of the IOU in terms of billing and customer notification. Costs associated with general CCA development would be the responsibility of all ratepayers, while those services specific to a particular CCA would be the responsibility of the CCA customers. Of special note were the determination of the CRS that would be charged to CCA customers, and the concept of *vintaging*.

Phase 1 also addressed a few other issues, such as allowing customer phase-in, making IOU customer data available to CCAs, and ordering the use of system-wide load profiles.

Phase 2. The Phase 2 decision (D.05-12-041) addressed all issues not ruled upon in Phase 1. This represented a very wide variety of topics dealing with the CCA interaction with the IOU and with the CCA's customers.

Supplemental Decision. The supplemental decision (D.07-01-025) changed the way the CRS is calculated, provided guidance on the process and timing of CCA interaction with the CPUC and IOUs during program formation, and included actions in response to the Implementation Plan filing by the San Joaquin Valley Power Authority in January 2007.

3.2. Base Case Feasibility Studies Findings (Objectives 2, 3, and 4)

Base Case Feasibility Studies were developed for each of the project's participating cities and counties. There were three general criteria for assessing the benefits of a CCA: (1) the potential for reduced rates, (2) the ability to increase utilization of renewable energy, and (3) enhanced local control/rate stability.

3.2.1. General Results

Every community's feasibility study showed that it could achieve some level of savings, anywhere from 1%-10% of customers' bills, in the base case scenario, while maintaining a level of at least 40% renewable energy in its portfolio. In most every case the CCA rates would be

slightly higher than the IOU's early on in the study period, but would eventually be lower than the IOU's.

The studies found that a CCA buying wholesale power on the market can stabilize rates by contracting for power supplies over a long term; however, rates would not necessarily be lower than under the status quo utility service. A CCA investing in its own generation can stabilize costs and also lower costs by eliminating the profit component of the generation rate. These benefits can be used to increase renewable energy in the CCA's portfolio or lower overall generation prices for consumers.

A primary benefit of forming a CCA program is to increase local control in resource planning, providing the community with more input over energy choices. Such control includes the ability for the city or county and aligned agencies to effect resource planning and infrastructure investment in an integrated fashion responsive to the community's needs and values. Local control also manifests in avoiding the cost consequences of the utility's long-term procurement decisions, which must be made considering the competing interests of shareholders, regulators, and consumers. The city or county faces no such conflicts and can focus on its primary mission of representing the interests of consumers.

The following discusses briefly the results for each city and county involved in the Pilot Project and the city's or county's current status with respect to developing a CCA.

City of Berkeley
The Final Base Case Feasibility Study for the City of Berkeley was completed in April 2005. The analysis indicated the City is likely to obtain cost savings equal to over $5 million per year or approximately 6% of customers' electricity bills on average over the study period. The analysis showed that a 50% renewable energy target can be achieved with no rate increases for customers if the City is willing to finance renewable resource development to supply the CCA program. The full report can be found at http://www.ci.berkeley.ca.us/sustainable/government/CommunityChoice/CCA.html

City of Emeryville
The Final Base Case Feasibility Study for the City of Emeryville was completed in March 2005. The analysis indicated the City is likely to obtain cost savings equal to over $3.7 million per year or approximately 10% of customers' electricity bills on average over the study period. The analysis shows that a 50% renewable energy target can be achieved with no rate increases for customers if the City is willing to finance renewable resource development to supply the CCA program. The full report can be found at http://www.ci.emeryville.ca.us/archive/Special_Meeting/2419.pdf

City of Oakland
The Final Base Case Feasibility Study for the City of Oakland was completed in April 2005. The analysis indicated the City is likely to obtain cost savings equal to over $17.9 million per year or approximately 5% of customers' electricity bills on average over the study period. The analysis shows that a 50% renewable energy target can be achieved with no rate increases for customers

if the City is willing to finance renewable resource development to supply the CCA program. The full report can be found at http://www.oaklandpw.com/Page250.aspx.

Currently, Berkeley, Emeryville, and Oakland are working together to study the viability of forming a joint CCA. A business plan (see Appendix H) has been developed and a decision is yet to be made as to whether to continue through to the next steps (Implementation Plan) toward development of a joint CCA.

City of Pleasanton
The analysis indicated the City is likely to obtain cost savings equal to approximately $6.6 million per year or approximately 5% of customers' electricity bills on average over the study period. The analysis shows that a 50% renewable energy target can be achieved with no rate increases for customers if the City is willing to finance renewable resource development to supply the CCA program.

The City of Pleasanton is currently evaluating whether to move forward in developing a potential CCA.

City of Richmond
The analysis indicated the City is likely to obtain cost savings equal to over $6.6 million per year or approximately 7% of customers' electricity bills on average over the study period. The analysis shows that a 50% renewable energy target can be achieved with no rate increases for customers if the City is willing to finance renewable resource development to supply the CCA program.

The City of Richmond is not pursuing any CCA plans at this time.

City of Vallejo
The analysis indicated the City is likely to obtain cost savings equal to over $2.1 million per year or approximately 3% of customers' electricity bills on average over the study period. The analysis shows that a 50% renewable energy target can be achieved with no rate increases for customers if the City is willing to finance renewable resource development to supply the CCA program.

The City of Vallejo is not pursuing any CCA plans at this time.

County of Marin
The analysis indicates the County is likely to obtain cost savings equal to over $6.8 million per year or approximately 3% of customers' electricity bills on average over the study period. The analysis shows that a 51% renewable energy target can be achieved with no rate increases for customers if the County is willing to finance renewable resource development to supply the CCA program. The full report can be found at http://www.co.marin.ca.us/depts/CD/main/comdev/advance/sustainability/Energy/cca/CCA.cfm

Marin County and its constituent communities have developed a business plan that would offer green energy options of 50% and 100% to its customers. The next steps for Marin would be to

form a Joint Powers Authority (JPA) and to create an Implementation Plan for CPUC certification. The current tentative schedule has Marin beginning deliveries in 2010, should they decide to complete the CCA process. A copy of the final business plan is available at http://www.co.marin.ca.us/depts/CD/main/comdev/advance/Sustainability/Energy/cca/CCA.cfm and on the Energy Commission website.

City of Beverly Hills
The analysis indicated the City is likely to obtain cost savings equal to over $6.0 million per year or approximately 6% of customers' electricity bills on average over the study period. The analysis shows that a 40% renewable energy target can be achieved with no rate increases for customers if the City is willing to finance renewable resource development to supply the CCA program.

City of West Hollywood
The analysis indicated the City is likely to obtain cost savings equal to over $1.5 million per year or approximately 3% of customers' electricity bills on average over the study period. The analysis shows that a 40% renewable energy target can be achieved with no rate increases for customers if the City is willing to finance renewable resource development to supply the CCA program.

The Cities of Beverly Hills and West Hollywood completed a conceptual business plan to assess the possibility of forming a joint CCA. As of this time, plans are on hold pending resolution of regulatory issues and the successful implementation of the San Joaquin Valley Power Authority CCA program.

County of Los Angeles
The analysis indicated the County is likely to obtain cost savings equal to over $9.8 million per year or approximately 1% of customers' electricity bills on average over the study period. The analysis shows that a 40% renewable energy target can be achieved with no rate increases for customers if the County is willing to finance renewable resource development to supply the CCA program.

The County of Los Angeles is not pursuing any CCA plans at this time.

City of San Marcos
The analysis indicated the City is likely to obtain cost savings equal to over $2.4 million per year or approximately 3% of customers' electricity bills on average over the study period. The analysis shows that a 40% renewable energy target can be achieved with no rate increases for customers if the City is willing to finance renewable resource development to supply the CCA program.

The City of San Marcos is not pursuing any CCA plans at this time.

County of San Diego
The analysis indicated the County is likely to obtain cost savings equal to over $25.3 million per year or approximately 5% of customers' electricity bills on average over the study period. The analysis shows that a 40% renewable energy target can be achieved with no rate increases for

customers if the County is willing to finance renewable resource development to supply the CCA program.

The County of San Diego is not pursuing any CCA plans at this time.

3.3. Technology Transfer (Objective 5)

The project team used a number of venues for sharing the lessons of the project, including a web-based discussion board, publications, templates, and public events.

CCA Community Discussion Board

The project team established a web-based discussion board (*www.lgc.org/community*) early in the project. The discussion board was used to share information about CPUC decisions, workshops, and deadlines, as well as other information about CCA. The board had a public and a private area. The project team restricted access to the private area to local governments in California and their designated consultants. The discussion board was fairly active for a while, but has not had much activity the last couple of years.

CCA Fact Sheet

The project team developed a fact sheet with basic information about Community Choice Aggregation in 2005. Five thousand copies of the fact sheet were printed and distributed over the course of the project. Each workshop participant received a copy. Fact sheets were distributed at events where the project team spoke and were provided to city councils, councils of government, and other interested persons who asked for them. The fact sheet is available at *http://lgc.org/cca/index.html#cca_fs* and is included in Appendix F.

CCA Guidebook

The project team developed a guidebook for communities exploring CCA. The guidebook included background information on CCA, how to investigate CCA feasibility for a community, and how to develop a CCA Implementation Plan. The guidebook is available on the Local Government Commission website (*www.lgc.org*). The project team plans to print only a limited number of copies of the guidebook, and instead will distribute it electronically. All workshop attendees were notified via email when the guidebook was available for download. The guidebook is included in Appendix G.

CCA Implementation Plan Template

Previously discussed.

Roadmap for Renewable Energy Development/Procurement

Previously discussed.

Workshops/Speaking Engagements

The project team convened project workshops in 2006 and 2007. The workshop presentations included background information on AB 117, the CPUC decisions, the interest of the Energy Commission in funding this project, findings from the project team's work, and Community Choice Aggregation in other states. Each workshop also featured representatives from various

communities in California investigating CCA. Representatives from the San Joaquin Valley Power Authority presented at each of the workshops. Over 300 people attended the workshops.

Workshops on renewable energy were also held for the participating cities and counties. One workshop was held in each of the IOU territories in the early part of the project. A more detailed renewables workshop was held for Marin County in October 2007. Marin County currently is the project participant furthest along in its investigation of CCA, and local proponents are especially interested in high levels of renewable generation.

Project team members also spoke at various venues about the project, including the Southwest Renewable Energy Conference and the League of California Cities annual conference.

Project team members also coordinate quarterly networking meetings for local government energy professionals in California. Community Choice Aggregation was one topic at each of the meetings from 2003 through 2007.

Finally, project team members made several dozen presentations to city councils, boards of supervisors, local government task forces, and other project participant staff.

Newsletter

A member of the project team writes a bi-monthly energy newsletter called *CURRENTS* for local governments. Updates on the project, actions at the CPUC, and communities investigating CCA were regular features in *CURRENTS* during the project's duration.

4.0 Conclusions and Recommendations

4.1. Conclusions

Analysis performed by the Pilot Project has shown that Community Choice Aggregation may be a viable alternative for some communities that are willing to accept the risks that go along with it. The benefits to a community would be lower rates and/or increased use of renewable energy, and greater local control of a community's energy policy.

Of course, given the fact that no CCA has yet been created in California and many things about the future are uncertain, there are risks involved. The costs of energy and the path of IOU rates are both uncertain aspects that could have a considerable effect on CCA feasibility for a community. The Pilot Project feasibility studies attempted to address some of these uncertainties and determined ranges of potential benefits that communities could then use to assess whether they wished to move forward with a CCA program. Several communities have continued to move forward in the development of a CCA program, while others have not.

4.2. Project Objectives

The following objectives were identified for the project:

- Prepare a document that clarifies the costs, credits, rules, and protocols being established by the CPUC for implementing CCA.
- Develop a template of analytical and cost models that can be used by a variety of local governments in California in assessing ways to implement CCA in such a fashion as to significantly exceed the state's 20% RPS goal.
- Develop a CCA Pre-feasibility Study Model.
- Complete detailed CCA feasibility analyses for a minimum of three communities or groups of communities that demonstrate the use of the template and the way in which these communities can achieve a renewables portfolio mix of 40%.
- Develop and provide a guidebook, fact sheet, and workshops for local government elected leaders and staff that share the lessons learned with the pilot communities.

Each of the following project objectives has been met:

- The project team produced three reports on the CPUC process and the rules it developed. The reports can be found in Appendix B.
- The project team developed a template of analytical and costs models described in the 12 Base Case Feasibility Study Phase 1 project reports whereby local governments in California leverage their ability to finance renewable generation projects through revenue bonds to more than double the 20% RPS goal at rates comparable to those projected to be charged by the investor-owned utilities under the status quo, or alternatively incur slightly higher costs through purchasing renewable energy on the open market.

- The project team used a detailed CCA Pre-feasibility Study Model for each of the 12 project participants to quantify the economic feasibility of implementing CCA programs over a 20 year forecast period. The CCA Pre-feasibility Study Model identified the various costs involved in operating a CCA program and compared the expected CCA rates to those forecast to be charged by the incumbent utilities.
- The project team completed CCA feasibility analyses for 12 communities, and provided additional, more detailed studies for Marin County and the cities of Berkeley, Emeryville, Oakland, Beverly Hills, and West Hollywood.
- The project team developed and provided a guidebook, fact sheet, and six workshops to share the lessons learned from the project. Over 300 people attended the workshops. The fact sheet is in Appendix F, and the guidebook is in Appendix G.

4.3. Policy Recommendations

The research conducted during the course of this project suggests great potential for Community Choice Aggregation programs to increase development of new generation, with a particular emphasis on renewable resources. The researchers found that the primary motivation for exploring CCA for most of the Pilot Project participants (cities and counties) is to exceed the RPS by a significant margin; all 12 participating communities established a goal of meeting a 40% renewable energy target and several established a goal of at least 50% renewable energy. The County of Marin has developed a business plan and will soon be developing an Implementation Plan to offer up to 100% renewable energy supply to its customers, which is expected to reduce greenhouse gas emissions by an amount equivalent to between 10% and 17% of emissions from all sectors within the County (including the transportation sector) within three years.

The public's enthusiasm for renewable energy as represented by local government elected officials and staff contrasts with apparent reluctance of the IOUs to make commitments to a 33% RPS standard, and suggests that proliferation of CCA may be a necessary element of the state's energy action plan. CCA demand for renewable power would undoubtedly cause new supplies for renewable energy to be developed to serve California, accelerating achievement of the state's renewable and greenhouse gas goals. Direct investment in renewable energy production facilities by CCAs, as is being considered by a number of project participants, offers a promising avenue for expansion of renewable energy in the state on a voluntary basis and without the need for rate increases by the IOUs.

CCA programs are naturally suited to develop local generation resources, which promise to add much needed infrastructure investment to the state's electric system. CCAs engage in local resource planning and are able to take advantage of low-cost financing for power plant development. Local governments have direct control over many land use designations that could potentially facilitate and streamline development of local generation projects. Project participants in the east San Francisco Bay Area and in Marin County, which are the furthest along in preparing CCA Implementation Plans, have developed detailed business plans calling

for development of 325 MW of new renewable generation sources by 2015, with an expressed desire to pursue local renewable resources to the greatest practical extent.

Despite the promise of CCA, there are significant hurdles to CCA program formation that must be overcome if this potential is to be fulfilled. As the law (AB 117) is currently written, CCA programs can only be implemented by cities and counties, and most of these entities have no meaningful experience in the energy industry. Local governments are generally reluctant to start a new enterprise in an area in which they have little or no expertise. While the lack of expertise in energy matters can be overcome with education efforts such as those developed under the auspices of this Pilot Project, the natural aversion to risk that characterizes local governments poses a much more difficult challenge to CCA formation, particularly when the incumbent utility actively seeks to dissuade city councils and boards of supervisors from taking action. Opposition by the incumbent utility instills additional uncertainty into an already difficult decision-making process. Such uncertainty is compounded when representatives of the IOU portray their opposition as concern for the interests of their ratepayers as opposed to their shareholders. Despite tremendous interest in CCA by dozens of local governments, the fact remains that more than five years after passage of AB 117, not a single CCA is yet serving customers.

It is apparent that if CCA is to flourish in California, new policies will need to be put into place to foster the program. The problem is similar to one faced by new technologies; policymakers have approached this problem from a framework of market transformation. In the case of new technology, the initial hurdle is often high cost and lack of scale in the supply chain. In the case of CCA, the hurdles include initial cost relative to direct benefits (many benefits accrue over the longer term) and perceived risk due to the absence of a proven business model. Few local governments have the resources and appetite to be the first CCA in the state. Market transformation policies for CCA should focus on making the decision to implement CCA programs easier for cities and counties. This chapter presents a range of policy options for consideration that would encourage the development of CCA programs.

4.4. Policy Options

Policies identified to help CCA flourish fall under three categories: (1) reforms intended to enhance the financial benefits for customers in CCA programs, thereby encouraging early adopters who will prove the concept and pave the way for other communities; (2) polices intended to change the relationship between the CCA and the local utility; and (3) education and outreach. A range of options exists within these three broad categories, and these are presented below.

Reforms to Enhance Program Economics

In the current regulatory environment, customers that take service from a CCA must pay surcharges to the incumbent utility to prevent costs from being shifted to remaining utility customers. Despite the fact that the California investor-owned utility rates are among the highest in the nation and that they continue to increase seemingly unabated, the Cost Responsibility Surcharge imposed on CCA customers makes it very difficult for the CCA

program to offer significant ratepayer savings in the near term. Studies conducted for this project show expected CCA rates to be within +/- 5% of the generation rates charged by the incumbent utility, after considering the CRS and CCA program costs. This translates into a total customer bill impact of 2% to 3% because generation costs reflect about half of a customer's monthly electric bill. For many cities and counties, these cost savings are insufficient motivation to spend the time and effort needed to pursue CCA in exchange for the less tangible and longer-term benefits of increased use of renewable energy.

Increasing opportunities for ratepayer savings would provide additional incentives for cities and counties to implement CCA programs and help overcome the natural inertia and fear of getting involved in what can be perceived as a risky and complex energy market. One approach would be for direct incentives to be provided for CCAs through the public goods charges paid by all electric customers, including customers of a CCA. Public goods funds for energy efficiency and renewable energy paid by CCA customers should be made readily available to a CCA to help fund the CCA's efforts to promote energy efficiency and procure or develop renewable energy. AB 117 addressed the use of public goods funds for CCA energy efficiency efforts, but no provision has yet been made by the CPUC for CCAs to easily access those funds.

Similarly, public goods charges collected by the incumbent utility from the CCA's customers could be applied to offset/subsidize start-up and/or pre-start costs for early adopting CCA programs. As previously noted, many communities are reluctant to pursue CCA as an energy service alternative due to the prolonged timeline over which program savings/benefits accrue. The need for considerable start-up and pre-start expenditures compounds this concern (particularly when communities realize that such costs will not be recovered if the CCA program fails to become operational). If necessary start-up costs could be significantly reduced and/or eliminated through the application of public goods funds, communities considering CCA could overcome a significant roadblock in pursuing the implementation of CCA. Examples of start-up costs to which public goods funds might be applied include: CCA Business Plan and Implementation Plan development; public outreach and analytical support; development of necessary agreements, including Joint Powers Agreements for multi-jurisdiction programs; and development of Requests for Proposals/Offers from prospective energy suppliers and the evaluation of related responses. These examples do not represent an all-inclusive list of necessary start-up and pre-start activities but still represent significant costs that must be incurred by communities currently evaluating CCA. Minimizing or eliminating such costs for prospective CCA programs could remove (or minimize) a primary impediment of CCA implementation.

Another form of incentive would be to reduce the CRS that customers of a CCA must pay to the IOU. The CRS is a subsidy to the IOU for its above-market generation costs intended to make the IOU and its remaining bundled service customers indifferent to customer migration to a CCA program. While the CRS is intended to make bundled service customers indifferent to migration of customers to a CCA, there are subsidies included in the CCA CRS that actually make bundled service customers better off than customers taking service from a CCA and act as market barriers to CCA formation.

These subsidies include:

- CCA customers having to pay for the IOU's procurement of renewable resources as well as the CCA's renewable procurements needed to meet its own RPS.
- CCA customers paying for peaking energy that is attributable to bundled service customers due to the use of a market price proxy for baseload only power (as opposed to a proxy representing a CCA's load shape) in the CPUC's CRS calculation.
- CCA customers having to pay for the IOU's scheduling coordinator costs from the California ISO as well as the CCA's own scheduling coordination costs.

The CPUC should be encouraged to investigate refining the CCA CRS methodology to remove these subsidies by more accurately reflecting the avoided costs associated with CCA load in the CRS calculation or by allocating benefits such as renewable energy attributes back to the CCA.

At a minimum, the CRS methodology should be reformed to ensure that payment of the CRS by customers of a CCA should not result in benefits or subsidies to the IOU or its bundled service customers. Exemptions from the CRS are another possible policy option to encourage early adoption of CCA and/or support CCA investment in new renewable generation facilities. CRS exemptions can be structured as market transformation incentives so that early adopters are granted the largest incentives to help overcome the hurdles of being first, with the incentives declining over time as the CCA business model becomes more proven.

Beyond considerations involving the CRS, policymakers should evaluate potential incentives that could be offered to energy service providers/developers serving CCA programs that agree to exceed the RPS. For many communities, CCA is viewed as a unique opportunity to significantly increase the development and delivery of renewable power beyond levels currently offered by the incumbent utilities. In fact, some communities currently evaluating CCA have identified the achievement of significant renewable energy levels (40% to 100%, for example) as a key objective in implementing an aggregation program. Facilitating the achievement of this key objective will also contribute to California's achievement of both the RPS and mandatory greenhouse gas emissions reductions (consistent with AB 32), as the development of renewable generating capacity will likely displace fossil-fueled generators (particularly, inefficient natural gas-fired generators) thereby reducing harmful emissions.

By providing supplemental financial incentives to energy service providers/developers that serve CCA load, such as incremental state tax credits similar to the federal Investment Tax Credit or Production Tax Credit, energy service providers/developers would be able to offset development or production costs and offer lower electric rates to CCA customers. This would certainly improve economic analyses of CCA programs, which generally focus on incumbent investor-owned utility rates as a performance benchmark (and compare projected CCA rates thereto to determine long-term savings/costs). These utility rates are generally based on supply portfolios that rely heavily on less expensive fuel sources (relative to eligible renewable resources, such as wind and solar), including nuclear, coal, large hydroelectric and natural gas.

While highly renewable CCA energy supply portfolios may still result in customer rates that are more costly (after the application of incremental incentives) than their investor-owned counterparts, such incentives would favorably influence economic comparisons, likely resulting in increased potential for CCA program implementation.

Policy options to consider for enhancing program economics include:

- Allocate a share of the public goods funds collected by incumbent utilities from the CCA's customers to the CCA for administration of local EE programs.
- Allocate a share of the public goods funds collected by the incumbent utility from the CCA's customers to offset/subsidize start-up costs for early adopting CCA programs.
- Reform the methodology for calculating the CRS to reflect the load profile of the CCA program when determining the market price benchmark (i.e., a shaped price rather than a baseload price).
- Remove utility renewable energy costs from the CRS or for all renewable resources where the costs of such resources are recovered through a non-bypassable charge from the incumbent utility.
- Allocate a proportionate share of the renewable energy credits to the CCA.
- Exclude new utility generation and contracts from the CRS or other similar non-bypassable charges.
- Provide limited CRS exemptions for CCA programs that develop new power plants or procure renewable energy in amounts that exceed the RPS.
- Provide limited CRS exemptions for CCA programs that become operational before a certain deadline (e.g., 2012).
- Implement short-term incentives, such as incremental tax incentives or credits, to energy service providers that serve CCA loads with renewable energy amounts that exceed the RPS.

Structural Reforms

Several of the policy options for structural reform identified below are intended to modify the relationship between the incumbent utility and the CCA so that the utility becomes a facilitator of CCA rather than an opponent. When AB 117 was passed, the IOUs had largely exited the generation business and future earnings were not directly threatened by CCAs entering the generation business. The situation has changed now that the IOUs are investing billions of dollars in new generation projects with return on equity investments contributing significantly to expected earnings growth and utility share prices. These investments may become unnecessary, and associated profit opportunities may be lost, in a world where CCAs are responsible for providing generation services to customers.

At present the IOUs have no positive incentive to facilitate CCA development to counterbalance the negative incentive of potential earnings loss from competitive entry in the generation sector. With the considerable resources at the IOUs' disposal to frustrate CCA development, the

present environment is not conducive to CCA formation. Under the CCA model, it is presumed that the IOU is competitively neutral: the IOU must be a good faith partner in a CCA program as it must provide the delivery, metering, and billing services for the CCA. Current rules also require customers to opt out of the CCA program by contacting the IOU, which places the IOU intent on competing with the CCA in a position of obvious conflict of interest. The IOU is also responsible for collections from customers for the CCA, and current rules do not extend to the CCA the shut off rights afforded to the IOU for minimizing uncollectibles. If the IOU has the incentive and ability to compete for customers with the CCA, the CCA model is seriously, if not fatally, flawed.

A combination of regulatory restrictions on IOU behavior and positive incentives for CCA formation should be considered to remedy the problem of IOU opposition to CCA.

The CPUC should consider a system of incentives available to the IOUs tied to successful implementation of CCA programs within their service areas. Lessons can be learned from the state's extensive experience with incentives for energy efficiency programs. Incentives provided to the IOUs for EE efforts have been successful in motivating the IOUs to take actions to reduce energy sales that might otherwise be viewed as contrary to shareholder interests. Similar shareholder incentives could be provided to IOUs that see reduced energy sales due to migration to CCA programs.

Other structural reforms that should be explored would expand the eligibility to become a CCA beyond cities and counties to include other governmental entities such as special districts that may already have experience in providing electric or other utility services. These entities are more likely to be comfortable with the concept of forming and operating an enterprise that entails an element of risk and uncertainty. Many water and irrigation districts have experience developing electric generation projects and have good access to capital markets for developing renewable infrastructure in concert with CCA programs.

Recommended structural reforms for consideration include the following:

- Enforce the duty of the incumbent utility to fully cooperate with CCA efforts by requiring the utility to take all reasonable actions to facilitate a CCA's efforts.
- Impose standards of conduct on the distribution utilities to prevent the utility from marketing against or otherwise undermining the CCA.
- Reform the rules governing utility billing services to CCAs to give equal priority to collection of CCA charges and utility charges.
- Eliminate the requirement for all customer opt-out requests to be processed by the utility rather than the CCA.
- Authorize special districts, in addition to cities and counties, to become Community Choice Aggregators.
- Provide financial incentives to IOUs to encourage CCA formation within their service territories.

Education and Outreach

Education and outreach, through the development and provision of a guidebook, an Implementation Plan template, and numerous workshops, have been important elements of the CCA Pilot Project, and the information resources developed through the project will continue to provide benefits to communities that are investigating CCA after the project terminates. Due to the complex subject matter of the energy industry and the particulars of CCA, state policy-makers should consider how best to meet the ongoing informational needs of communities interested in CCA. Continuing education efforts could be facilitated by development of a CCA informational website, periodic workshops, and maintenance of updated written and analytical materials. The Energy Commission might also consider developing a pilot program for CCAs to provide funding and technical assistance in developing local renewable generation projects.

Also, since there are no CCAs at this time and there is no single organization to advocate on their behalf, it is vitally important that any rulemaking instituted at the regulatory or even legislative level, in all areas, continue to bear in mind the effects such actions would have on the ability of communities to form CCAs. One of the main goals of the CCA legislation was to provide a choice to energy customers within California; if no CCAs are ever formed then this goal will clearly not have been achieved.

Recommended ongoing education and outreach efforts include:

- Conduct ongoing statewide education outreach to local governments on energy supply, renewable energy, and efficiency.
- Establish a pilot project and funding for CCA investment in renewable energy technologies.
- Obligate utilities to provide information to cities and counties on an annual basis disclosing (1) the number of customers and electric consumption within each local government's jurisdiction, (2) utility spending on energy efficiency programs within the jurisdiction and the associated electricity savings, and (3) collections of public goods charges from customers within the community.
- Develop a tool to estimate reductions in greenhouse gas emissions levels from various actions that can be undertaken by cities and counties, including providing renewable energy through a CCA.

4.5. Recommendations for Further Study

Greenhouse gas emissions have become a major aspect of the state's energy policy. With the passage of AB 32, the state is dedicated to reducing greenhouse gas levels dramatically over the next decade. Further study could examine how CCAs could facilitate this goal, especially through their potential increased use of renewable energy.

Energy efficiency and Demand Response programs actually come before renewables in the Energy Action Plan loading order.[4] CCAs presumably would also try to meet this responsibility. Further study into how CCAs might facilitate an increase in the use of EE and Demand Response programs could prove valuable to communities trying to look at ways to maintain sustainability with CCA as an option.

Economic development opportunities and economic multiplier effects have not been addressed in this project. The potential for local renewable energy development, EE programs, distributed generation programs, and other potential CCA-initiated programs will likely provide significant economic benefits to the communities that form CCA programs.

4.6. Benefits to California

When CCA legislation was passed in 2002, there was no prior experience with it in California. This project has served to increase awareness of the possibility of CCA and has also delivered a roadmap by which communities can pursue formation of a CCA through various modes, using such project tools as the Implementation Plan template. By engaging in feasibility studies over many different types of communities, the Pilot Project was able to identify which variables and issues are most important in determining the viability of a CCA for a community, where the risks lie, and to give scope to the potential benefits.

After noting the results of the feasibility studies developed as part of this Pilot Project, several communities have taken the step of going further into development of a CCA program, such as Marin County and the cities of the East Bay. While there has not been a CCA formed as of this time, this project certainly has made it much easier to navigate the issues and understand the risks and opportunities of a CCA and has provided a template, both literally and figuratively, for other communities to follow.

4. The loading order is the preference load-serving entities are to give various resources to meet their load. First in the loading order is energy efficiency and Demand Response, and second is energy from renewable resources.

5.0 Glossary

AB 117	California Assembly Bill 117. AB 117 grants cities and counties, or groups of them, the authority to competitively procure electric services rather than continuing to rely on the investor-owned utility as the supplier for electric services to customers within the community. AB 117 was signed into law in 2002. It has been integrated into California's Public Utilities Code, primarily in Section 366.2, but with other provisions in Sections 218.3, 331.1, 366, 381.1, 394, and 394.25.
AB 1890	California Assembly Bill 1890
AB 32	California Assembly Bill 32
California ISO	California Independent Systems Operator. The California Independent System Operator is a not-for-profit public-benefit corporation charged with operating the majority of California's high-voltage wholesale power grid. California ISO is the link between power plants and utilities, and balances the demand for electricity with an equal supply of megawatts.
CCA	Community Choice Aggregation and Community Choice Aggregators. These terms are used interchangeably. A Community Choice Aggregator is any city or county whose governing board elects to combine the loads of its residents, businesses, and municipal facilities in a community-wide electricity buyers program; or any group of cities, counties, or cities and counties whose governing boards have elected to combine the loads of their programs through the formation of a Joint Powers Authority, as long as that entity is not within the jurisdiction of a local publicly owned electric utility that provided electric service as of January 1, 2003.

CPUC	California Public Utilities Commission. The California Public Utilities Commission is the state agency charged with oversight of the investor-owned utilities and with implementing Assembly Bill 117.
CRS	Cost Responsibility Surcharge. The Cost Responsibility Surcharge is charged to Community Choice Aggregation (CCA) customers to offset any negative impact CCA formation may have on the rates of an investor-owned utility's (IOU) remaining bundled customers. It is determined by comparing the required rates for all IOU customers (including the ones about to leave for a CCA program) to the required rates of the IOU without the departing CCA customers.
DA	Direct Access
DWR	California Department of Water Resources. The Department of Water Resources stepped in to purchase electricity for the utilities following the energy crisis of 2000-2001. It negotiated contracts with energy suppliers and issued bonds to cover some of its costs. All customers of the utilities during that crisis period will continue to pay these costs until they are fully paid.
EE	Energy Efficiency. Energy efficiency is using less energy to perform the same function. An example would be replacing an incandescent light bulb with a compact fluorescent light (CFL) bulb that produces the same amount of light. CFLs generally use about ¼ of the energy of incandescent bulbs to produce the same amount of light.
FAQ	Frequently Asked Questions
GWh	Gigawatt-hour
IOU	Investor-Owned Utility. For purposes of the CCA program, IOU refers to Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company, the three electrical corporations whose ratepayers could switch over to a CCA program.

IP	Implementation Plan. Implementation Plans are required of potential Community Choice Aggregators (CCA). They must be adopted at a public meeting of the city, county, or joint cities and counties that will file the plans with the California Public Utilities Commission (CPUC). They have certain requirements in the law. The CPUC will use the Implementation Plans to determine the Cost Responsibility Surcharge (CRS) for a CCA's customers.
JPA	Joint Powers Authority. A Joint Powers Authority is an agreement between more than one government entity to cooperate on a particular program or project. A JPA can be between all levels of government (local, state, and/or federal). Only cities and counties can enter into a JPA to establish and operate a CCA.
LSE	Load-serving entity. Load-serving entities are the organizations that directly provide electric power to end-use customers.
PG&E	Pacific Gas and Electric Company. Pacific Gas and Electric Company is the investor-owned utility serving most of Northern California.
PIER	Public Interest Energy Research. The California Energy Commission's Public Interest Energy Research Program supports energy research, development, and demonstration projects that will help improve the quality of life in California by bringing environmentally safe, affordable, and reliable energy services and products to the marketplace. The PIER program funded this project and document.
RD&D	Research, Development, and Demonstration. The California Energy Commission conducts research, development, and demonstration projects to benefit California.
RPS	Renewable Portfolio Standard. California's Renewable Portfolio Standard requires retail sellers of electricity to supply 20% of their electricity from renewable resources by 2010. Eligible renewable

	resources include biomass, solar thermal, photovoltaics, wind, geothermal, fuel cells using renewable fuels, small hydropower of 30 megawatts or less, digester gas, landfill gas, ocean wave, ocean thermal, and tidal current. Municipal solid waste is generally eligible only if it is converted to a clean-burning fuel using a non-combustion thermal process.
SB 107	Senate Bill 107
SB 1078	California Senate Bill 1078
SCE	Southern California Edison Company. Southern California Edison Company is the investor-owned utility that provides electricity to most of Southern California outside of the San Diego Area.
SDG&E	San Diego Gas & Electric Company. San Diego Gas & Electric Company is the investor-owned utility that serves the San Diego area with gas and electricity.
SJVPA	San Joaquin Valley Power Authority. The San Joaquin Valley Power Authority is the first entity in California to file a Community Choice Aggregation Implementation Plan with the California Public Utilities Commission.
U.S. DOE	United States Department of Energy

List of Appendices
(Under Separate Volumes)

To download any of these appendices, please go to:
http://www.energy.ca.gov/pier/project_reports/CEC-500-2008-091.html

Appendix A: Roadmap for Renewable Energy Development Procurement, publication # CEC-500-2008-091-APA

Appendix B: Project Reports on California Public Utilities Commission Decisions on Community Choice Aggregation, publication # CEC-500-2008-091-APB

Appendix C: Sample Data Request Letters from Local Governments to Investor-Owned Utilities, publication # CEC-500-2008-091-APC

Appendix D: Key Assumptions Used in the Base Case Feasibility Reports, publication # CEC-500-2009=8-091-APD

Appendix E: Community Choice Aggregation Implementation Plan Template, publication # CEC-500-2008-091-APE

Appendix F: Community Choice Aggregation Fact Sheet, publication # CEC-500-2006-082. Published August 2006, republished April 2009.

Appendix G: Community Choice Aggregation Guidebook, publication # CEC-500-2009-003

Appendix H: Berkeley, Emeryville, Oakland Business Plan, publication # CEC-500-2008-091-APH