

**COMMUNITY CHOICE AGGREGATION
DEMONSTRATION PROJECT**

SUMMARY FOR IERP WORKSHOP

COMMUNITY CHOICE AGGREGATION DEMONSTRATION PROJECT

Abstract

In the demonstration project, 13 California local governments engaged a process to evaluate the feasibility of implementing Community Choice Aggregation (CCA) programs through which a 40 percent renewable energy mix would be achieved, doubling the Renewable Portfolio Standard (RPS). Results to-date demonstrate that community choice aggregators can double the RPS without increasing costs to ratepayers. Base case analyses for project participants indicate the need for over 1,600 Megawatts (MW) of renewable resource capacity additions to achieve their renewable energy goals in the first three years following implementation (estimated 2008).

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COMMUNITY CHOICE AGGREGATION DEMONSTRATION PROJECT

Background

Community Choice Aggregation (CCA), as defined in its enabling legislation (AB 117, 2002, Migden.¹), permits any city or county to aggregate the electric loads of residents, businesses and municipal facilities to facilitate the purchase and sale of electrical energy. The "opt-out" aggregation structure frees the aggregator from the need to market the program and ensures wide-scale customer participation. Investor owned distribution utilities [Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), and Pacific Gas & Electric (PG&E)] continue to own and operate the electric distribution system and provide metering, billing, credit and collection, call center and other customer service functions. The law directs the distribution utilities to cooperate fully with any community choice aggregator in its efforts to develop their aggregation program. The California Public Utilities Commission (CPUC) will determine the rules and protocols for implementing the CCA programs.

Demonstration Project Description

On August 28, 2003, under Contract No. 500-03-004, The Local Government Commission (LGC) executed the State of California Standard Agreement with the State Energy Resources Conservation & Development Commission (California Energy Commission) with the expressed purpose of developing a template local governments can use in implementing CCA within the context of the California Renewables Portfolio Standard (RPS). All demonstration project participants have committed to the goal of doubling the RPS, or achieving 40 percent renewable energy content for the prospective CCAs by 2017. The term of the Agreement is September 1, 2003 to December 31, 2005.

The project is also funded through the financial contributions from the U.S. Department of Energy and is co-sponsored by the League of California Cities and the California State Association of Counties. Navigant Consulting, Inc. (NCI) is the sole subcontractor responsible for performing financial and technical analyses and developing demonstration project findings and recommendations.

¹ Effective January 1, 2003 amends Sections 218.3, 366, 394, and 394.25 of, and to add Sections 331.1, 366.2, and 381.1 to, the California Public Utilities Code.

Demonstration Project Objectives

1. 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 to significantly exceed the state's twenty percent RPS goal with a targeted goal of forty percent.
2. Clarify the costs, credits, rules and protocols being established by the CPUC for implementing CCA.
3. Develop a CCA Pre-feasibility study model.
4. Complete detailed CCA feasibility analyses for up to three communities or groups of communities that demonstrate the use of the template and ways in which these communities can achieve a renewable portfolio mix of forty percent.
5. 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.

Demonstration Project Tasks

To achieve these project objectives the following series of tasks must be completed:

1. Project Administration
2. CPUC Process Documentation and Impact Evaluation
3. Pilot Communities Selection
4. Initiate Pilot Communities
5. Base Case Feasibility Studies
6. Base Case Evaluation
7. Implementation Plans
8. Monitor CCA Implementation Plans at CPUC
9. Final Evaluation of CCA Feasibility Plans
10. Technology Transfer Activities

Demonstration Project Participants

Demonstration project participants are organized into three consortia of communities, one consortium in each of California's three investor-owned utility (PG&E, SCE and SDG&E) service territories. Participant jurisdictions and consortia are listed in Table 1.

Table 1: CCA Demonstration Project Consortia

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 Torrance West Hollywood	San Diego County San Marcos

To date, base case feasibility analyses have been performed for all participant communities except the Cities of Torrance and San Marcos. Participants for which base case feasibility analyses have been completed represent approximately 7.6 percent of the IOU’s current sales base as shown in Table 2.²

Table 2: CCA Demonstration Project Aggregate Electric Loads

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

A participant jurisdiction’s choice to move forward toward implementation of a CCA program will be based upon the ability for the CCA program to deliver lower electricity rates, more stable energy prices, and increased latitude to develop and utilize environmentally friendly renewable energy resources. The ultimate decision to proceed with implementation plan development will be based upon how the benefits of CCA relate to each participant community’s values and objectives. The next logical phase for the Demonstration Project encompasses working sessions at the local government level in order to provide community members a thorough understanding of the feasibility study results, benefits and risks to support their decision whether to proceed to implementation.

² These figures represent only those eleven communities participating in the Demonstration Project for which the analyses has been completed, and do not include the Cities of Torrance and San Marcos or any of the cities and counties that are in the process of implementing CCA programs outside of the Demonstration Project.

Study Results

The base case evaluation results show that community choice aggregation is financially viable for most Demonstration Project participants and that increasing the renewable energy composition to 40 percent from 20 percent does not significantly detract from the programs' financial viability. Through work on this project we have discovered a widespread desire on behalf of local governments to greatly enhance use of renewable energy. For example, while all of the Demonstration Project participants initially expressed a desire to double the RPS, following review of the initial results, the seven participants in the Bay Area have established a goal of achieving a 50 percent renewable energy target. A key to increasing renewable energy utilization without increasing costs to consumers will be the willingness and ability of community choice aggregators to finance new renewable energy resource development. On average, we expect communities subscribing to such an "asset-based" strategy for supplying the CCA program will realize total electricity cost savings (including the utility's charges for delivery) of between 1 percent and 5 percent with an average benefit of approximately 3 percent. These results are summarized in Table 3.

Table 3: Projected Cost Savings For Demonstration Project Participants Utilizing An Asset-Based Supply Strategy Averages For The 2006 - 2024 Study Period

Community	Generation Cost Savings (%)	Total Electricity Cost Savings (%)
1	2%	1%
2	8%	5%
3	-2%	-1%
4	2%	1%
5	-5%	-3%
6	2%	1%
7	2%	1%
8	7%	4%
9	7%	4%
10	3%	2%
11	8%	5%
Overall Average	4%	2%
Average Benefit	5%	3%

These results are shown graphically in Figure 1.

Figure 1: Projected Cost Savings For Demonstration Project Participants Utilizing An Asset-Based Supply Strategy Averages For The 2006 – 2024 Study Period

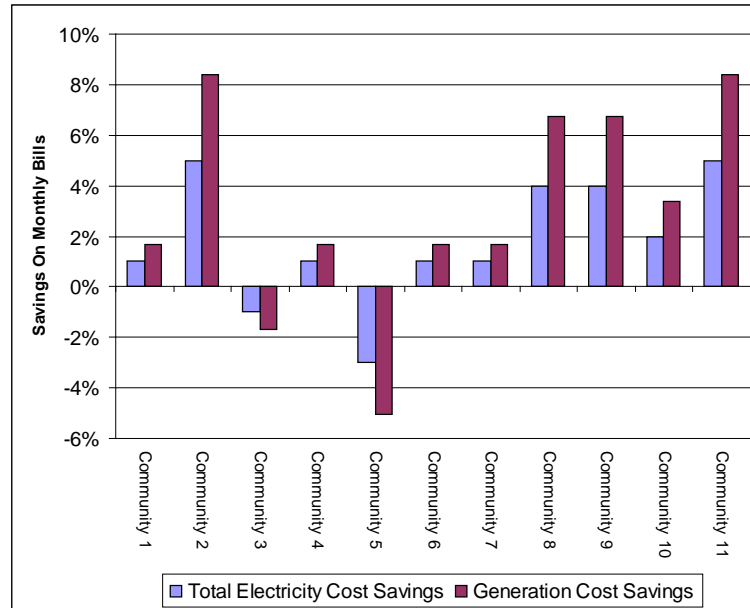


Figure 2 shows the average customer bill impacts for each Demonstration Project participant if it were to form a CCA program utilizing supply portfolios with 20 percent or 40 percent renewable energy.³ For purposes of this chart, the electricity requirements for the programs are assumed purchased from the wholesale markets (“market-based supply strategy”). Renewable energy is purchased at the weighted average cost of the renewable technologies identified as being likely to be used in meeting the state’s RPS goals, and the cost of the remaining non-renewable energy is purchased at prevailing wholesale market prices.⁴ Positive numbers indicate savings, and negative numbers indicate that CCA program electric bills would be higher than those of the incumbent investor-owned utility.

³ The customer bill impacts presume that program rates are set to recover the program’s total costs of service.

⁴ The source for the renewable energy projections used in this study is the 2003 Energy Commission Renewable Resource Development Report.

Figure 2: Electric Cost Savings For CCA Demonstration Project Participants Utilizing A Markets-Based Supply Strategy

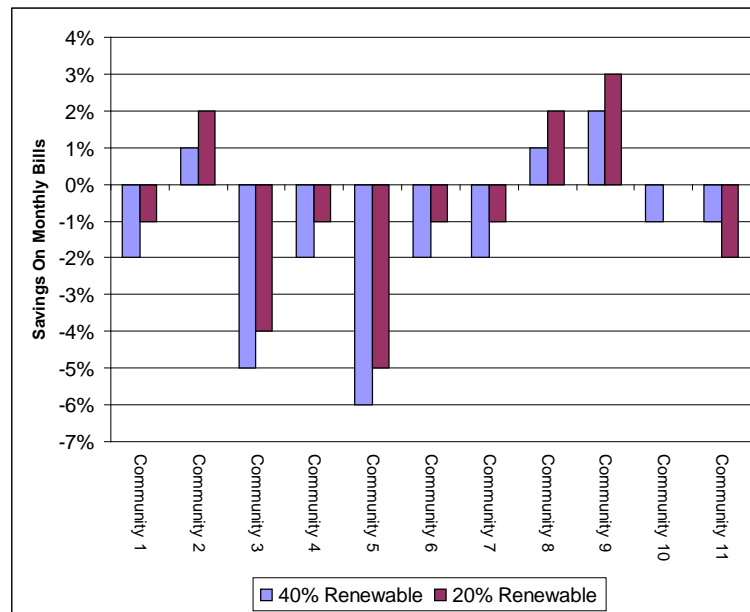


Figure 2 shows that for most communities, a simple CCA implementation strategy of procuring energy from the wholesale markets will not yield energy cost savings. This result should not be surprising considering the current exit fee mechanism that essentially imposes a cost on the CCA customer that is equivalent to the above market cost of the utility’s total generation portfolio. The exit fee is intended to protect remaining customers of the incumbent utilities from cost shifting that may result from CCA customer migration. The effect of the exit fee is to force the community choice aggregator to compete against the market price of electricity rather than the average cost of the utility’s portfolio, which forms the basis for the utilities’ retail generation rates. Thus, cost savings are generally dependent upon the community choice aggregator’s ability to procure electricity at a cost below the market price benchmark used to calculate the exit fee.

The more interesting result revealed by Figure 2 is the relatively small incremental cost of doubling the renewable energy mix in the community choice aggregator’s portfolio. Supplying 40 percent of program loads from renewable energy resources rather than the legal minimum of 20 percent adds only about 1 percent to the ratepayers’ total monthly electricity bills.⁵ The modest customer bill impact of expanding renewable energy utilization can be illustrated with a simple calculation. The average cost of renewable energy used in the study is 5.9 cents per kilowatt-hour (kWh) (in 2003 dollars). The weighted average renewable energy cost was

⁵ The cost of new transmission facilities that may be needed to transmit large amounts of renewable energy to load centers is not included in this analysis. These costs will be included in transmission rates that are paid by all users of the grid and should not impact the CCA economic analysis.

derived from the Energy Commission's 2003 Renewable Resource Development Report (RRDR) data as follows in Table 4.

Table 4: Renewable Resource Technologies Expected To Fulfill The California Renewable Portfolio Standard (2003 Dollars)

Resource	Portfolio Contribution	2005 Levelized Production Cost (Cents Per kWh)
Wind (Class 4 site)	66%	6.0 *
Concentrating Solar	1%	12.1
Landfill Gas	4%	4.4
Solid Biomass (Direct Combustion)	4%	6.6
Geothermal (Binary)	25%	5.5
Weighted Average		5.9

Source: Energy Commission Renewable Development Resource Report

* The cost of wind is based on the levelized cost of \$4.9 per kWh presented in the RRDR plus an additional 1.1 cents per kWh capacity cost to reflect the cost of capacity that a Load Serving Entity (LSE) would incur to “firm” the intermittent wind resources. These figures do not include production tax credits.

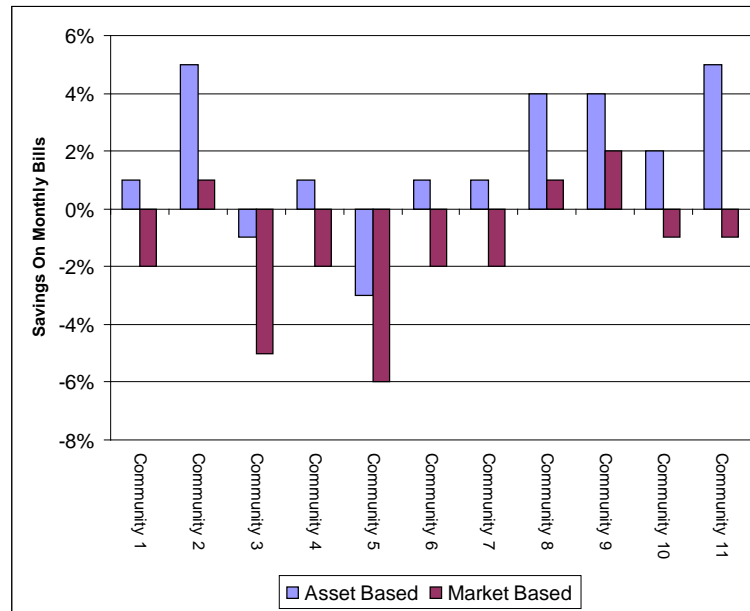
The average renewable energy cost of the generic renewable portfolio described above would be 6.2 cents per kWh in 2006, assuming annual escalation of 2.5 percent. This cost represents a premium of approximately 1.7 cents per kWh compared to the average system market prices used in the study for the same year. All else being equal and assuming no public sector capital financing is employed, the rate impact of doubling the 20 percent renewable mix would 0.36 cents per kWh or approximately 2.7 percent at current utility rates.⁶ The premium declines over time as natural gas and electricity market prices are expected to rise faster than the cost of renewable energy production. For instance, assuming average annual increases in the market price of system power of 2.8 percent as used in this study, the renewable price premium falls to 0.4 cents per kWh by 2014. By 2018, the market price of renewable energy is expected to be no greater than the cost of conventional generation resources.

Community choice aggregators possess an important competitive advantage relative to investor owned utilities in their ability to utilize low cost financing for capital projects such as generation resources, and such financing can be used to create ratepayer savings for CCA customers. Figure 3 illustrates the benefit to the community choice aggregator of utilizing low cost debt to finance generation projects

⁶ The current system average rate for PG&E is 13.1 cents per kWh as shown in Table 3 of PG&E Advice Letter 2570-E-A.

within their CCA programs. For purposes of this analysis, two diversified supply portfolios were created for each participant to meet a 40 percent renewable energy target. The market-based supply strategy includes a mix of long and short-term power purchases, and the asset-based supply strategy replaces a portion of the power purchases with production from community generation projects (a mix of wind, geothermal and natural gas combined cycle resources).⁷ Figure 3 shows program benefits for the alternative supply portfolios.

Figure 3: Electric Cost Savings For CCA Demonstration Project Participants Utilizing Alternative Supply Strategies



Whereas just three of the Demonstration Project participants would realize ratepayer benefits by pursuing the market-based strategy, nine of the eleven would realize ratepayer benefits under the community generation alternative.

Implications for New Generation Development

The feasibility results strongly suggest that community choice aggregators will drive new resource development both by entering into long-term contracts with generators and by their direct participation in generation projects. Basic retail risk management practices dictate that the average term of the supply portfolio of a load serving entity reflects the average term of the retail customer relationship; e.g., short-term retail contracts would be backed by short-term supply contracts and vice versa. Following the initial customer opt-out period for a CCA program, the customer relationship will

⁷ The community generation projects were assumed financed at an annual interest rate of 5.5 percent for thirty-year terms.

be of a long-term nature and will likely be backed by long-term supply commitments. These commitments can be long-term power purchase agreements with energy producers or community ownership of generation, both of which would help support development of new generation resources in the state. Additional research and analysis should focus on identifying alternative resource development models that community choice aggregators could use to exploit their capabilities for financing new renewable resource development.

Table 5 quantifies the renewable resource electric energy and capacity requirements for the Demonstration Project participants that would be required for these communities to double the renewable portfolio percentage of the incumbent investor owned utilities.⁸ In aggregate, these communities would require a total of 5,435 GWh (1,631 MW of capacity) of renewable energy per year to meet their stated renewable energy objectives.

Table 5: Renewable Energy Requirements Of Demonstration Project Participants To Double The Renewable Portfolio Standard In 2006

Community	GWh	MW
A	187	56
B	270	81
C	73	22
D	2,039	612
E	490	147
F	689	207
G	239	72
H	202	61
I	930	279
J	159	48
K	157	47
Total	5,435	1,631

If these communities go forward with implementation of community choice aggregation, there will clearly be important implications for the state's achievement of its RPS goals as well as on the RPS attainment and resource planning activities of the investor owned utilities. Policies have yet to be adopted regarding the impact of customer migration on the investor owned utilities' renewable procurement obligations. The renewable energy requirements of the CCA customers could be entirely incremental if the ultimate policies dictate that there be no reduction in the investor owned utilities renewable energy procurement obligation when load switches to service by a community choice aggregator. Alternatively, if the RPS rules

⁸ The capacity figure is calculated at a capacity factor of 30 percent.

allow the investor owned utilities to reduce their procurement of renewable energy as load migrates to CCA service, a portion of the community choice aggregators' renewable energy requirements would represent transferred obligations from the investor owned utilities to the community choice aggregators. In that instance, only the portion of the community choice aggregators' renewable energy utilization above the RPS would be incremental.

Conclusions

The Demonstration Project conclusions to date are summarized as follows:

- » Aggregation is an economically viable option for communities to effectuate their preferences regarding the type of energy resources used to serve their loads.
- » Communities should expect modest ratepayer savings on the order of 1 percent to 5 percent in the near-term due to imposition of cost responsibility surcharges (exit fees) and other fees imposed by the investor-owned utilities. Savings opportunities improve with time as the exit fees largely expire by 2012.
- » Increasing the renewable energy percentage from 20 percent to 40 percent would not significantly increase the CCA program's rates.
- » The capacity for local governments to utilize low cost financing would support significant investments in both conventional and renewable energy resources in the context of a CCA program.
- » Long-term power purchase agreements proffered by community choice aggregators will offer rate stability for consumers and financial security to support expanded private sector generation development.