

Appendix A

Summary of the MRW Technical Feasibility Study

In addition to developing the EBCE Joint Powers Agreement, County staff also worked with the Steering Committee and a team of consultants to develop a Technical/Feasibility Study, which is a required study for any CCA. The study assessed the range of likely costs of implementing a CCA program under a variety of scenarios. In addition to the cost data, the study also provides an analysis of various legal, regulatory, market, and social risks and threats to the program.

This Appendix A describes the inputs into and conclusions of the study. The summary below includes text and characterizations used by Alameda County staff as part of their presentation to the Board of Supervisors.

Using electrical load data for the most recent two-year period, along with best professional predictions of future market conditions and energy prices, the study projects estimated energy costs to both the CCA Authority and the customer base for a 13-year period, 2017 – 2030. The study assumes full participation by all cities, but provides additional analysis relative to impacts associated with lower levels of participation. The study:

- Quantifies the electric loads that an Alameda County CCA could serve, including residential and commercial customers in the unincorporated county and all cities except the City of Alameda, which has its own utility;
- Estimates the costs to start-up and operate the CCA;
- Considers scenarios with differing assumptions concerning the amount of carbon-free power being supplied to the CCA so as to assess the costs and greenhouse gas (GHG) emissions reductions possible with the CCA;
- Includes varying levels of renewable power and an analysis of in-county renewable generation potential;
- Compares the electric rates that could be offered by the CCA to PG&E's rates;
- Quantitatively explores the rate competitiveness to key input variables, such as the cost of natural gas;
- Explores what programs a CCA might offer with respect to administering customer-side energy efficiency programs;
- Calculates the macroeconomic impact and potential employment benefits of CCA formation in the County.

The analysis covers four (4) possible operational scenarios:

- a. Scenario 1 – Simple Compliance with State of California 33% Renewable Portfolio Standard (RPS) by 2020 and 50% by 2030;
- b. Scenario 2 – Accelerated Renewable Investment - 50% Renewable portfolio from the first year onward, plus additional amounts of emissions-free, large hydro power (not considered renewable under California guidelines) to reduce GHG emissions below projected PG&E GHG estimates;

- c. Scenario 3 – Aggressive Renewable Growth - The Renewable portfolio set at 50% in the first year and increased to 80% by the fifth year; large hydro could also make up a portion of the non-renewable component;
- d. Scenario 4 – Very Aggressive Local Renewable Investment – Similar to Scenario 2, but with an increased emphasis on in-county renewable development: Assumes that one-half of the CCA’s total renewable energy goals would be met by in-county resources by the year 2030.

The Technical Study concludes:

- Feasibility for a CCA in Alameda County is favorable; current and expected market and regulatory conditions suggest that an Alameda County CCA should be able to offer residents and businesses electric rates that are a cent or more per kilowatt-hour (6 – 7 percent) lower cost than that available from PG&E under most scenarios. The sensitivity analyses suggest that these results are relatively robust; only when very high amounts of renewable energy are assumed in the CCA portfolio (such as Scenario 3), combined with other negative factors, do PG&E’s rates become consistently more favorable than the CCA’s rates.
- An Alameda County CCA could help facilitate greater amounts of renewable electricity generation to be developed in Alameda County. The study assumed a relatively conservative amount of local renewable generation, about 175 Megawatts (MW) over 10 years, but other studies suggest that the potential is higher.
- The CCA could reduce greenhouse gas emissions relative to PG&E, but only under certain circumstances. Because PG&E’s supply portfolio has significant carbon-free generation (large hydroelectric and nuclear generators), the CCA must contract for significant amounts of carbon-free power (such as large hydroelectric) beyond the required qualifying renewables in order to actually reduce the county’s electric carbon footprint. If carbon reductions are a priority for the CCA, a concerted effort to contract with hydroelectric or other carbon-free generators will be needed.
- A CCA can offer positive economic development and employment benefits both in the area and beyond. Each Scenario analyzed was found to create hundreds or thousands of jobs at the local and / or regional levels, with the proportion of local jobs dependent on the degree of direct local renewable energy investment, and the total regional jobs dependent mostly on indirect multiplier effects resulting from reduced electric rates and the corresponding additional purchasing power of individual consumers and businesses. In each case, the larger benefit to area jobs shown by the Technical Study comes not from direct investment in local energy, but from reduced electric rates; residents, and more importantly businesses, can spend and reinvest their bill savings, and thus generate greater economic impacts in the local economy.

- The scenario that offers the greatest electric rate reduction, and thus the greatest ability to generate indirect total jobs based on economic multiplier effects, is Scenario 1. It invests the least in renewables overall, and keeps those revenues in the hands of the ratepayers. Scenario 2 has similar costs, but includes additional renewable energy investment statewide. Scenarios 3 and 4, by contrast, invest even more heavily in renewables, but Scenario 3 invests statewide, while Scenario 4 invests locally; the result is that Scenario 3 generates the fewest jobs locally (although it maximizes renewable energy and GHG reduction), but Scenario 4 generates the most local jobs by a significant margin. Scenarios 3 and 4, however, significantly reduce the projected number of jobs outside of the region because customer savings are not emphasized in these scenarios.

As the siting analysis for future renewable energy projects has not been completed, it is not yet possible to estimate the total jobs within Berkeley that would be generated under each scenario. However, countywide jobs can be discerned based on the structure of each scenario. The table below summarizes each scenario and its implications for GHG emissions, jobs, and ratepayer savings.

	Scenario 1 RPS Compliance	Scenario 2 Accelerated investment in renewables	Scenario 3 More aggressive investment in renewables	Scenario 4 Accelerated investment in <i>local</i> renewables
Renewable Content	33% in 2020 & 50% in 2030	50% from 1st year	50% from 1st year & 80% by 5th year	Same as Scenario 2
GHG compared to PG&E	Higher in every year	Slightly Higher for 1st few years	Lower in every year	Same as Scenario 2
Anticipated Rate Savings	7%	6.5%	3%	5.7%
Average Annual Direct Jobs	165	166	174	579
Average Annual Total Jobs	1,322	1,286	731	1,671

The Technical Study also considered the size of the electricity load that would be required to achieve economies of scale sufficient to make the program cost effective. The study concludes that a CCA in Alameda County could successfully start-up at about 6.5 – 7 percent of the total load, and be comfortably viable with JPA signatories representing about 10-15 percent of all customer load, or about 1,000,000 MWh per year. The unincorporated County, as the initial member of the JPA, represents approximately 6 percent of the total countywide load.

The consultant also identified a number of risks to consider, from unfavorable regulatory changes to financial and market risk. The CCA model has successfully operated in various jurisdictions for more than six years, and several new programs have recently launched. Many of the early-phase risks, generally associated with uncertainties of how CCAs would operate in California, (e.g., concerns about financial risk to member jurisdictions) have proven to be mitigable through the work and experience of the existing CCAs. Given the years of operational experience of municipal utilities, CCAs and other load-serving entities, there is no shortage of expertise to help mitigate procurement and market risks. Finally, the consultant conducted multiple sensitivity analyses of the key assumptions that went into the conclusions about the CCA's price competitiveness. For example, the consultant modeled what would happen to CCA electricity rates if renewable energy prices and utility exit fees suddenly rose and if PG&E prices declined. In 17 of the 18 cases examined, the CCA program was able to maintain lower rates than PG&E. (Even in the one case where it was negative—low PG&E rates plus high renewable content, the CCA rate was less than \$0.001/kWh more than PG&E.) The model indicated it would take a very unlikely combination of variables (the "stress scenario") for CCA rates to consistently rise higher than PG&E.