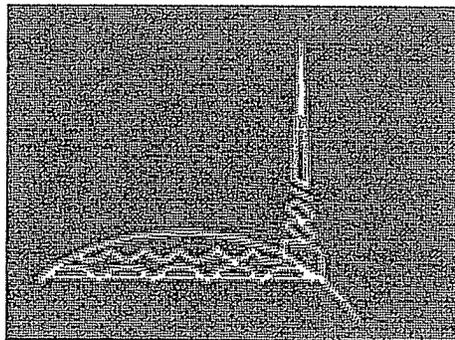


FINAL REPORT

MARIN - CALIFORNIA

COMMUNITY CHOICE AGGREGATION BUSINESS PLAN



April 2008

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Beginning in 2004, the County of Marin and the eleven cities within the county ("Marin Communities" or "Marin") initiated a process to investigate offering retail electric services to customers located within the Marin Communities through a program known as Community Choice Aggregation (CCA).¹ Marin's primary long-term goal in offering CCA service is to achieve 100 percent renewable energy supply within the Marin Communities, affecting significant reductions in Greenhouse Gas Emissions (GHG) consistent with Marin's voluntary International Council for Local Environmental Initiatives (ICLEI) targets (a 15 percent reduction in total GHG below 1990 levels by 2020, countywide). The Marin Communities have been compelled to evaluate CCA as an energy service alternative to determine the feasibility of achieving this long-term goal in light of the incumbent electric utility's slow progress toward California's mandated Renewables Portfolio Standard (RPS) and in consideration of the utility's existing resource supply portfolio (which produces more than 70% of electric power deliveries from nuclear and natural gas-fired generating sources). The extensive, evaluative process completed by the Marin Communities has provided a strong indication that formation of a CCA program could reasonably achieve expeditious progress in achieving the Marin Communities' goal (over 80% renewable energy supply for the Marin Communities in 2014; alternatively, the incumbent utility provides approximately 12-14% of its energy from qualified renewable sources) by providing local residents and businesses with an elective energy service alternative that directly responds to expressed local interests (a highly renewable energy supply that will promote significant GHG reductions).

The CCA program was established by the legislature in 2002 (AB 117) to give cities and counties the authority to procure electricity in bulk for resale to customers within their jurisdictional boundaries. Under this CCA program, PG&E would deliver the electricity to end use customers and PG&E would continue to read the electric meters and issue monthly bills to customers enrolled in the CCA program. Unlike traditional utility service, the source of the electric supply (generation) and the price paid by customers for the generation services procured by the CCA program would be determined by the CCA. Customers would have the choice of being automatically enrolled in the program following a notification process or remaining with the incumbent utility by following the opt-out process described in the customer notices.

Marin conducted feasibility studies during 2004-2005 to identify the benefits and risks of forming CCA programs. The feasibility studies, which were subject to peer review by a team of independent, expert consultants, generally found that Marin could significantly increase its use of renewable energy while providing electric rate stability and potentially reduced electric rates over the long-term relative to PG&E. The CCA's ability to finance generation projects at low cost was identified as a key factor in being able to achieve these objectives. Following consideration of the feasibility study findings, the Marin Communities decided to jointly develop a comprehensive business plan that would address issues not included within the feasibility study scope and to confirm the study's findings in certain key respects.

¹ The eleven cities located with the County of Marin include: Belvedere, Corte Madera, Fairfax, Larkspur, Mill Valley, Novato, San Anselmo, San Rafael, Sausalito, Tiburon and Ross.

This business plan presents a proposal for Marin to form a regional CCA program serving the unincorporated areas of the county as well as eleven cities located within the county's geographic boundary. The plan sets forth proposals for how a Marin CCA program would be organized, funded and operated. Highlights of the plan include:

- The County of Marin and eleven participating cities would form a new Joint Powers Agency during early 2009 (potentially earlier, depending on various requisite approvals by the county and cities), tentatively named the Marin Clean Energy Joint Powers Authority ("Marin Clean Energy" or "MCE") for purposes of offering CCA services to customers beginning in 2010 (subject to further refinement of this plan).
- MCE would negotiate contracts with third party electric suppliers to provide electricity to customers and provide other technical services required for the program under a public/private partnership model;
- MCE would offer two distinct renewable energy supply options to program customers, reflecting differing preferences within the Marin Communities:
 - 100 percent renewable energy supply from resources such as wind, solar, geothermal and biomass, at a specified price premium reflective of renewable energy and related program operating costs; or
 - A graduated renewable supply option with rates equivalent to those of the incumbent utility – under this option, Marin Clean Energy would initially supply 25 percent renewable power, increasing this supply to more than 50 percent by 2014.
- MCE would continue to increase its renewable energy procurement/deliveries within the graduated renewable supply option to achieve the long-term goal of 100 percent renewable energy supply for the entire program subject to economic and operational constraints;
- MCE would develop or otherwise obtain entitlements to up to 200 MW of new renewable generation by 2014, financed with tax-exempt revenue bonds;
- MCE would leverage existing state and federal incentives to achieve a targeted deployment of at least 13 MW of distributed solar (photovoltaic) systems within its boundaries by 2019;
- MCE would promote additional energy efficiency efforts and ultimately seek to administer all energy efficiency programs within its jurisdiction, as envisioned by AB 117; and
- Through implementation of the proposed CCA Program, the Cities would cause a reduction in greenhouse gas emissions of between 302,330 and 534,369 metric tons per year by 2019, as the renewable resources procured and developed by MCE would displace production from natural gas fueled power plants.

The financial plan and customer rate impacts presented in Chapter 4 should be considered illustrative pending incorporation of prices that will be provided by the market in a Request for Bid that will be issued around January 2009, subject to various requisite approvals by the county and cities. For the time being, information contained in the Financing Plan is based on energy prices received by other CCA programs, such as the aspiring East Bay CCA Program

and the San Joaquin Valley Power Authority (SJVPA), from the market. While this plan provides guidelines related to many key areas of CCA operation, certain plan components will also require input from the county's and cities' legal and financial professionals, as indicated in this plan. Once the business plan is finalized and reviewed by the Marin Communities (March 2008), the county and cities will need to decide whether to proceed with formation of the JPA, which would adopt the Implementation Plan for submission to the California Public Utilities Commission as required by AB 117.

The key planning elements that are statutorily required in an Implementation Plan are addressed in this business plan. The Public Utilities Code specifies that a CCA Implementation Plan must include the following components:

- Organizational structure of the program, its operations, and funding;
- Rate setting and other costs to participants;
- Disclosure and due process in setting rates and allocating costs among participants;
- Methods for entering and terminating agreements with other entities;
- The rights and responsibilities of program participants, including, but not limited to, consumer protection procedures, credit issues, and shutoff procedures;
- Termination of the Program; and
- A description of the third parties that will be supplying electricity under the program, including, but not limited to, information about financial, technical, and operational capabilities.

California's CCA program is relatively new, and, to date, only one CCA has registered with the California Public Utilities Commission. California's lone CCA, the SJVPA is comprised of a consortium of cities and counties in the central San Joaquin Valley. The SJVPA submitted its CCA Implementation Plan on January 29, 2007.² On April 30, 2007, the California Public Utilities Commission provided notice to the SJVPA certifying that its Implementation Plan contained sufficient data, as required by California Public Utilities Code Section 366.2. In addition to the SJVPA, there are several other CCA development efforts under way in San Francisco, the City of Victorville, the East Bay, West Los Angeles, and Chula Vista.

² Revisions to SJVPA's Implementation Plan were subsequently submitted on April 27, 2007; additional revisions were filed with the CPUC on August 27, 2007.

The major elements of the business plan are summarized as follows:

1. Governance and Organization

The program would be implemented by a new JPA whose Board of Directors, comprised of one elected official from each of the participating communities, would have primary responsibility for managing all aspects of the CCA program. The JPA would adopt the Implementation Plan required by the CCA legislation (AB 117) and register with the California Public Utilities Commission as a Community Choice Aggregator.

Decisions by Marin Clean Energy would take place in public meetings under voting procedures defined in the Joint Powers Agreement. As currently envisioned, all votes on a particular matter will be subject to a two-tier approval process: first, any decision must be approved by a simple majority of the Directors at the Governing Board meeting; second, assuming the first requirement is reached, those Directors voting in the affirmative must constitute over 50 percent of a weighted voting percentage comprised of equal treatment of each Member's electricity requirements (expressed as a ratio of each Member's electricity requirements divided by total energy requirements of the Program) and a pro rata percentage of total membership. An alternative two-tier approval process, which weights voting based on customer accounts rather than electricity requirements, has also been included in this Business Plan.

Marin Clean Energy would be established under the terms of a Joint Powers Agreement, which would institute MCE with a broad set of powers to study, promote, develop and conduct electricity related projects and programs. The JPA agreement would specify the governance provisions of Marin Clean Energy. Proposed principles for a JPA Agreement are discussed in Chapter 2.

The CCA program would most likely be established pursuant to a separate project agreement (Program Agreement No. 1 or PA-1) executed by and among MCE and the members (eleven cities and Marin County). The PA-1 would transfer the members' authority under AB 117 to MCE and authorize the initiation of CCA service to customers within the member's jurisdiction, subject to specified withdrawal rights.

Operations of the program would be the responsibility of an Executive Director, appointed by MCE's Board of Directors. The Executive Director would manage staff, contractors and third party electric providers, in accordance with the general policies established by the Board. Because MCE expects to commence Program operations under a full-requirements supply contract with an experienced, third-party energy supplier, the Executive Director will manage this contractual relationship to ensure performance under the contract's specified terms and conditions.³

After the Program has established itself, has identified internal staff/management to assume responsibility for necessary administrative and operational responsibilities, and has properly trained appropriate individuals to carry out their respective duties, MCE may transition many responsibilities to internally staffed positions. Most operational responsibilities, particularly technical functions associated with managing and scheduling electric supplies and those related

³ As a public entity, any business relationship between Marin Clean Energy and a third-party contractor is assumed to result from a competitive solicitation/selection process.

to retail customer settlements would be performed by a third-party contractor, likely the supplier providing service under MCE's initial full-requirements contract.

In the event that MCE transitions administrative and operational responsibilities to internally staffed positions, it would likely have a full time staff of approximately twenty employees to perform its responsibilities, primarily related to program and contract management, legal and regulatory, finance and accounting, energy efficiency, marketing and customer service. As previously noted, technical functions associated with managing and scheduling electric supplies and those related to retail customer settlements would be performed by an experienced third party(ies). In the longer term, these technical functions may be performed by internal staff or continue to be provided by third parties.

Staffing and contractor costs related to program startup activities are estimated at approximately \$3.4 million. It is estimated that MCE would need working capital (likely in the form of a letter of credit) in the range of \$6.4 million to initiate the Program and provide the working capital needed for service to customers in Phases 1 and 2. Credit requirements may increase to as much as \$15.8 million dollars for Phase 3. These figures include working capital related to power purchases that may ultimately be carried by the Program's electric supplier, subject to negotiations during the supplier selection process.

2. *Phased Customer Enrollment*

Service would be offered to customers in three phases, beginning with the service accounts affiliated with the members of Marin Clean Energy (municipal accounts). The second phase would include the medium to large commercial and industrial customers, and the third phase would include all remaining customers. The proposed schedule for customer enrollments is shown below:

Customer Phase-In Schedule

Phase	Start	Eligibility	Customer Accounts ⁴
Phase 1	January 2010	Municipal Accounts	565
Phase 2	May 2010	Commercial and Industrial Accounts	1,192
Phase 3	January 2011	All Others	109,344

The phasing schedule enables MCE and third party electricity suppliers to make any adjustments that may be necessary to ensure the program is operating effectively. It would also allow for any potential billing, settlement or cash flow problems to be addressed while the actual number of accounts and revenue requirements are small relative to full scale operations. MCE's Board of Directors would have final authority for initiating service to Phase 1 customers and to approve transitioning from one phase to the next.

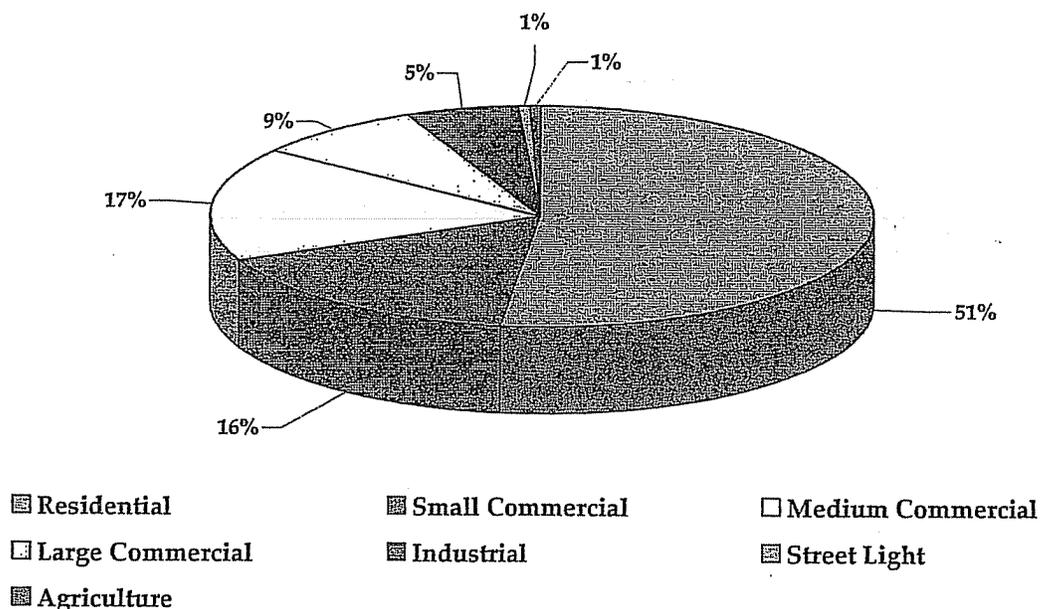
At full implementation in 2011, the Program is projected to serve over 111,000 retail customers and have annual electricity sales of over 1,300 GWh. Annual revenues are projected to be

⁴ Customer account totals represent estimates based on an escalation of 2005 account data provided by PG&E. An annual escalation rate of 0.5 percent was applied to this PG&E data with an assumption that 100 percent of Phase 1 customers and 90 percent of Phase 2 and 3 customers were retained (10 percent opt-out per class).

approximately \$128 million. The break down of projected sales by major customer class is shown in the following figure.

Projected Customer Mix In 2011

**Marin Clean Energy
Customer Mix by Load**



3. Electric Resources

Beginning with the commencement of service to Phase 1 customers in 2010 through 2013, MCE would contract with a third party electric supplier under a "full requirements" contract, which places the responsibility for arranging for power to be delivered to program customers with the supplier. MCE would establish specific renewable standards that the supplier must meet. The proposed renewable standard begins at 56 percent in 2010 (based on a weighted average of program customers participating in a 100 percent renewable supply tariff as well as the 25 percent renewable supply provided to cost-sensitive program customers – these two distinct tariff options are discussed in additional detail below). Beyond 2013, the Program intends to promote additional renewable energy utilization to the level of 80 percent (based on a weighted average of program customers participating in the 100 percent renewable supply tariff as well as the 51 percent renewable supply provided to cost-sensitive program customers, a planned increase from the 25 percent introductory renewable supply level that occurs in 2014) or greater; achievement of this ambitious goal will likely depend on MCE's investment in the development of new renewable generation capacity.

To meet this goal, MCE would develop and potentially finance 200 MW of renewable generating capacity, scheduled to be online in 2014. Resource development and financing would likely be conducted with another public agency or agencies with experience in electric resource development. Additional renewable energy purchases would supplement MCE's generation to sustain or exceed the 80 percent renewable energy target. In addition, MCE

would promote expanded customer side energy efficiency and demand response programs and target deployment of approximately 13 MW of distributed solar within its service area by 2019.

The clean electric supply portfolio developed by Marin Clean Energy is expected to result in net reductions in greenhouse gas emissions of between 302,330 to 534,369 tons per year by 2019 due to displacement of natural gas generation that would otherwise be used. GHG reductions of this magnitude represent between 10 percent and 17 percent of the Marin Communities' current emissions total (from all sectors).

4. Rates

The ability to meet these goals will be confirmed during the program's supplier solicitation process. The Program's preliminary goals are based on the development of two distinct rate tariffs between which program customers may choose: 1) 100 percent renewable, or "Green," energy supply; and 2) a graduated renewable energy supply option, or "Light Green." The 100 percent Green Tariff will provide program customers with 100 percent renewable energy supply at a rate premium of approximately 1.9 cents/kWh. This premium will be directly related to the incremental cost incurred by the program to procure necessary renewable energy supplies as well as administrative costs, including increased reserve requirements, related thereto. The Light Green Tariff is designed with cost-sensitive customers in mind, providing these residents and businesses with a relatively high level of renewable energy supply (25 percent in 2010, increasing to 51 percent in 2014) at a generation rate equivalent to the incumbent utility, PG&E. Participating qualified low- or fixed-income households, such as those currently enrolled in the California Alternate Rates for Energy (CARE) program, will be automatically enrolled in the Light Green Tariff and will continue to receive related discounts on monthly electricity bills. Projected program rates for each of the program's two tariffs are shown in the following table. *The following rates are illustrative and subject to change pending the pricing information that will be requested from potential suppliers.*⁵

⁵ Based on initial supplier responses received by the SJVPA and the East Bay communities as well as the Program's expressed interest in achieving a highly renewable resource mix when operations commence, the Program will likely set rates that are equivalent to those of the incumbent utility, PG&E.

Marin Clean Energy Estimated 2011 Program Rates

Customer Class	Program Rates – 100 percent Green (Cents Per kWh)	Program Rates – Light Green (25/51%) (Cents Per kWh)	PG&E Generation Rate (Cents Per kWh) *
Residential	11.3	9.4	9.4
Small Commercial	11.5	9.6	9.6
Medium Commercial	11.1	9.3	9.3
Medium Industrial	10.2	8.5	8.5
Large Industrial	9.7	8.1	8.1
Agricultural	9.5	7.9	7.9
Street and Area Lighting	9.7	8.1	8.1
PG&E rates are based on those contained in Advice Letter No. 3115-E-A (Effective January 1, 2008), escalated at 3.5 percent per year to 2011.			

MCE would establish its rates on an annual basis, as it adopts its budget for the coming year. Program customers would be provided with notices of rate changes and be given the opportunity to comment on proposed rate changes before they are made effective by MCE's Board of Directors at a duly noticed public meeting.

Customers would be provided with four notices and opportunities to opt-out of the program without penalty of any kind, twice within 60 days prior to enrollment and twice within the first two months of service. Following the free opt-out period, customers would be allowed to discontinue service, subject to payment of a nominal Termination Fee. The proposed Termination Fee includes an Administrative Fee (proposed at \$5 for residential customers) and, if necessary, a Cost Recovery Charge to prevent shifting of costs to remaining Program customers. MCE's Board would establish the Cost Recovery Charge as part of its ratesetting responsibilities in the case where the costs of the program's electric supply commitments exceed the prevailing market price for electricity. The Cost Recovery Charge would provide a financial backstop to be used as partial security for financing of MCE's power supply commitments and as credit support for the electric supply agreement. Additional refinement of the Termination Fee would require input from the Cities' financial advisors, investment bankers, bond counsel and customers for inclusion in the Program's Implementation Plan. MCE's Board of Directors would also have the authority to implement entry fees for customers that initially opt out of the Program, but later decide to participate. Entry fees would help prevent potential gaming, particularly by large customers, and aid in resource planning by providing additional control over the Program's customer base. Entry fees would not be practical to administer, nor would they be necessary, for residential and other small customers.

5. Financial Plan

It is estimated that MCE would need to procure full requirements power supply for the four-year Implementation Period at an average cost of 8.8 cents per kWh (for power supply corresponding with the conventional/renewable mix provided in the Light Green Tariff) to be able to offer rates equal to those of PG&E. A pro forma for the implementation period, including generation rates equivalent to PG&E, is shown in the following table, based on a full requirements contract price of 8.8 cents per kWh. Costs and revenues presented in the table below are illustrative and subject to change based on responses to the County's and Cities' request for information and proposals from third party electric suppliers.

Marin Clean Energy Summary of CCA Program Implementation (January 2009 through December 2013)

CATEGORY	2009	2010	2011	2012	2013	TOTAL
I. REVENUES FROM OPERATIONS (\$):						
(A) ELECTRICITY SALES:						
RESIDENTIAL	\$0	\$271	\$68,459,083	\$71,209,427	\$74,070,266	\$213,739,048
GENERAL SERVICE (A-1)	\$0	\$332,029	\$16,246,125	\$16,911,607	\$17,591,030	\$51,080,791
SMALL TIME-OF-USE (A-6)	\$0	\$277,770	\$5,769,373	\$6,067,692	\$6,311,462	\$18,426,297
ALTERN. RATE FOR MEDIUM USE (A-10)	\$0	\$15,499,512	\$21,734,676	\$22,664,751	\$23,575,307	\$83,474,246
500 - 900kW DEMAND (E-19)	\$0	\$6,597,654	\$9,049,315	\$9,375,412	\$9,752,069	\$34,774,451
1000 + kW DEMAND (E-20)	\$0	\$3,904,820	\$5,405,411	\$5,633,713	\$5,860,048	\$20,803,993
STREET LIGHTING & TRAFFIC CONTROL	\$0	\$534,302	\$755,054	\$785,389	\$816,942	\$2,891,687
AGRICULTURAL PUMPING	\$0	\$275	\$549,460	\$548,644	\$570,686	\$1,669,065
TOTAL REVENUES	\$0	\$27,146,633	\$127,968,499	\$133,196,635	\$138,547,810	\$426,859,577
II. COST OF OPERATIONS (\$):						
(A) ADMINISTRATIVE & GENERAL (A&G):						
STAFFING	\$451,067	\$2,661,067	\$3,092,725	\$3,185,507	\$3,281,072	\$12,671,437
INFRASTRUCTURE	\$139,500	\$192,000	\$157,500	\$162,225	\$167,092	\$818,317
CONTRACTOR COSTS	\$434,833	\$1,607,417	\$2,608,875	\$2,635,255	\$2,714,313	\$10,000,693
IOU FEES (INCLUDING BILLING)	\$200,023	\$187,286	\$1,128,200	\$1,024,786	\$1,055,529	\$3,595,825
CONTRACT STAFF	\$0	\$0	\$0	\$0	\$0	\$0
SUBTOTAL - A&G	\$1,225,423	\$4,647,770	\$6,987,300	\$7,007,773	\$7,218,006	\$27,086,271
(B) CCA PROGRAM OPERATIONS:						
ELECTRICITY PROCUREMENT	\$0	\$22,781,412	\$107,727,159	\$110,974,279	\$114,317,379	\$355,800,229
RENEWABLE PORTFOLIO ADJUSTMENT	\$0	\$1,422,695	\$9,284,041	\$8,400,441	\$7,507,772	\$26,614,948
SUBTOTAL - CCA PROGRAM OPERATIONS	\$0	\$24,204,106	\$117,011,200	\$119,374,720	\$121,825,152	\$382,415,177
TOTAL COST OF OPERATION	\$1,225,423	\$28,851,876	\$123,998,499	\$126,382,492	\$129,043,157	\$409,501,448
CCA PROGRAM SURPLUS / (DEFICIT)	(\$1,225,423)	(\$1,705,243)	\$3,969,999	\$6,814,143	\$9,504,653	\$17,358,129

6. Financings

To achieve program commencement in January 2010, MCE would need to establish credit in mid 2009 sufficient to obtain short term financing, likely a letter of credit, for approximately \$6.4 million to cover program startup costs and working capital associated with Phases 1 and 2. MCE's capital requirements would increase to approximately \$15.8 million for Phase 3. These amounts would be repaid over a five to seven year term.

Financing to support development of MCE's renewable generation capacity would require an approximately \$475 million issuance of revenue bonds. The bonds could be issued by MCE or by another public agency which would sell the output to MCE. This financing would occur once specific projects are completely sited and the CCA Program is fully up and running. The anticipated financial close for the renewable resource project would be winter 2011. The financing would be in the range of a 20 to 30 year term.

7. Implementation Schedule

There are several major steps that would need to be accomplished prior to the initiation of the CCA Program outlined in this business plan. Five of these steps represent decision points or "off ramps" that allow for program participants to periodically evaluate the prospective CCA program based on current market conditions, evolving community preferences and various other considerations before proceeding with the implementation process.

Five natural decision points or "off ramps" are built into the business plan. The first occurs once the business plan is finalized and the county and cities elect whether to continue with development and filing of a formal Implementation Plan or to terminate their investigation of CCA. The goal is for the county and cities to have sufficient information with respect to the likelihood of the program meeting its renewable energy and rate objectives, assurance that the risks are understood and manageable, and that the plan is financially sound for the county and cities to make an informed decision whether to continue. The second decision point occurs after the JPA Agreement and the Implementation Plan have been drafted and each participating community has been given the opportunity to review and comment on the documents. At that time, the county and cities will determine whether or not to continue with actual program implementation in the form of unique ordinances, consistent with the statutory requirements of AB 117. This second off-ramp provides an opportunity for leadership within each participating community to consider community-specific feedback before deciding to participate in the JPA. Following the passage of ordinances, participating Members will commence operation of Marin Clean Energy and will issue a Request for Bid to prospective energy suppliers.

The third and fourth off-ramps require Marin Clean Energy's Board to approve both the Implementation Plan and Program Agreement 1. Following approval of the Implementation Plan, this document would be filed with the CPUC for certification. The fifth, and final, decision point occurs after the CPUC certifies the Implementation Plan, and the county and cities elect whether or not to continue with actual program implementation. This decision point allows the JPA to deal with potential regulatory decisions that could materially change the program as well as any developments in current market conditions that may preclude the program from meeting its economic and/or renewable supply objectives.

Following passage of Assembly Bill 117 in 2002, which created the legal authority for cities and counties to provide electric service through Community Choice Aggregation, the County of Marin, on behalf of the unincorporated areas of the county as well as the eleven cities within its geographic boundaries, which include San Rafael, Novato, Corte Madera, Mill Valley, Larkspur, Sausalito, San Anselmo, Tiburon, Fairfax, Ross and Belvedere, initiated a feasibility study to evaluate the costs and benefits of implementing CCA programs within its jurisdiction. Under California law, CCA allows cities, counties, or joint power agencies (JPA's) comprised of cities and/or counties to implement programs that aggregate the electric loads of customers within their jurisdictional boundaries for purposes of electricity procurement. This allows the city/county/JPA (CCA Provider) to make wholesale purchases of electricity on behalf of its constituents, providing an alternative to the incumbent utility, PG&E.

The feasibility study found that it would be economically feasible for the county and the eleven cities to jointly implement a CCA program and significantly increase the use of renewable energy resources in fulfilling the electricity requirements of the communities. The studies found that the county and cities could jointly provide electricity to program customers at costs lower than the rates projected to be charged by PG&E due in large part to the ability of these local governments to finance generation facilities using low cost, tax-exempt bonds. The feasibility study found that additional cost savings could be achieved if the county and cities joined together to procure electricity for the program and conduct certain common activities. The feasibility studies also identified several risks and uncertainties that would need to be addressed as the program is implemented and operated. Finally, the feasibility study identified the steps that must be completed in the formation of a CCA program, including the development of the legally required Implementation Plan that identifies how the program would be organized, funded and operated.

Marin County retained an independent consultant to perform a peer review of the feasibility study. The peer review concluded that the feasibility study provided sufficient information to proceed with the next phase of the project, which involves development of a program business plan. The peer review also suggested changes in certain underlying analytical assumptions and recommended additional sensitivity analyses that should be included in the next phase of study.

A limited feasibility study update was subsequently performed, incorporating the recommendations of the peer review team. The results of the updated feasibility study generally fell within the range of sensitivities contained in the original feasibility study. The updated analyses did not change the overall conclusions and recommendations contained in the original study.

The Marin Communities then decided to collaboratively develop a business plan for implementing a joint CCA program. During this process, leadership within the Marin Communities expressed an interest in understanding the potential impacts of a CCA program that would offer a 100 percent renewable energy supply to its customers. Specifically, the

Marin Communities wanted to determine the extent to which local climate impacts could be mitigated through the implementation of a highly renewable energy supply portfolio. After evaluating the economic and environmental implications of such a program (program rates would likely exceed utility rates over the near term of 5-10 years; significant, sustained GHG reductions could be achieved), the Marin Communities jointly decided to proceed with the development of a CCA business plan that will offer customers 100 percent renewable energy supply and will affect GHG reductions up to 17 percent of current totals within the Marin Communities. This business plan outlines a framework for how a CCA program serving Marin County and the eleven cities located therein could be organized, governed, operated, and financed. Many aspects included within this business plan are universally applicable to any local government(s) that may choose to pursue CCA. However, each CCA program will have unique goals, objectives and demographic profiles as well as many other characteristics impacting program development. The unique characteristics, specific to Marin's CCA Program, have been identified herein and addressed in the program-specific analyses underlying this business plan. Details reflected in this business plan were developed in consideration of the current legal and regulatory frameworks affecting CCA participants. This business plan contains the following sections:

- Organizational Plan;
- Load Forecast and Resource Plan;
- Financial Plan;
- Ratesetting and Program Terms;
- Procurement Process; and
- Program Termination.

The business plan will be subject to much discussion and refinement among the county's and cities' representatives, stakeholders, outside experts and the public before a decision to proceed with developing a formal Implementation Plan can be made. Ultimately, the evaluation will incorporate price offers from third party electric suppliers, which will provide the certainty needed to determine whether the program can offer the rates proposed herein, while meeting the program's specified renewable energy targets, upon initiation. Information from potential electric suppliers has not been requested at this time, but the Marin Communities have utilized the information received by the SJVPA and the East Bay Communities in response to their non-binding requests for information.

This document represents a comprehensive Business Plan for Marin Clean Energy. It presents to the Marin Communities a compilation of proposed plans for organization and governance, ratesetting policies and processes, staffing plans, roles and responsibilities, detailed startup costs and financing, a phased customer enrollment plan, energy efficiency and distributed generation plans, suggested renewable resource technologies and generally defined locations for development, program terms and conditions, and a process for procuring the key third party services needed for program implementation. Information included in this business plan is based, in part, on input received from the Marin Communities as well as other interested stakeholders and advisors. Several preliminary concepts are presented in this plan that will require input from the county's and cities' financial advisors, bankers and attorneys. The ability

to offer competitive rates will be addressed in greater detail once the Marin Communities have formed a joint powers agency and have issued a request for bid to potential suppliers (January 2009). At that time, the JPA's Governing Board will evaluate the responses received from potential suppliers and will initiate a full analysis of financial sensitivities to ensure that the program can meet its specified objectives. For the time being, many of the quantitative analyses supporting this business plan utilize energy prices that were offered by private energy suppliers to the East Bay Communities and the SJVPA.

Five natural decision points or "off ramps" are built into the business plan. The first occurs once the business plan is finalized and the county and cities elect whether to continue with development and filing of a formal Implementation Plan or to terminate their investigation of CCA. The goal is for the county and cities to have sufficient information with respect to the likelihood of the program meeting its renewable energy and rate objectives, assurance that the risks are understood and manageable, and that the plan is financially sound for the county and cities to make an informed decision whether to continue. The second decision point occurs after the JPA Agreement and the Implementation Plan have been drafted and each participating community has been given the opportunity to review and comment on the documents. At that time, the county and cities will determine whether or not to continue with actual program implementation in the form of unique ordinances, consistent with the statutory requirements of AB 117. This second off-ramp provides an opportunity for leadership within each participating community to consider community-specific feedback before deciding to participate in the JPA. Following the passage of ordinances, participating Members will commence operation of Marin Clean Energy and will issue a Request for Bid to prospective energy suppliers.

The third and fourth off-ramps require MCE's Board to approve both the Implementation Plan and Program Agreement 1. Following approval of the Implementation Plan, this document would be filed with the CPUC for certification. The fifth, and final, decision point occurs after the CPUC certifies the Implementation Plan, and the county and cities elect whether or not to continue with actual program implementation. This decision point allows the JPA to deal with potential regulatory decisions that could materially change the program as well as any developments in current market conditions that may preclude the program from meeting its economic and/or renewable supply objectives.

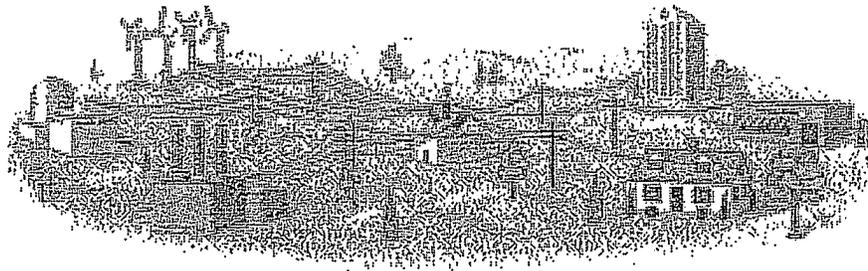
Following these predetermined off-ramps, CCA customers are given four additional opportunities to opt-out of program service by responding to service notices included in their utility bills. Each of these off-ramps, coupled with the customer notification requirement and related opt-out provisions, will ensure that this CCA program is undertaken by well-informed decision-makers and subscribed to by willing customers.

Background on CCA

AB 117 provides for the CCA Program to be an opt-out program, meaning that all customers are included in the program unless they make a positive declaration that they do not wish to participate.

The CCA Provider will only procure the electric energy commodity; the actual delivery of the commodity remains the obligation of PG&E. PG&E will continue to provide all non-generation-

related services, including delivery, metering, billing, customer service, and traditional retail customer services. This is an important distinction of CCA compared to a municipal utility that owns the transmission and distribution wires and distributes electricity. The following figure illustrates the potential electricity delivery under a CCA Program.



Generation	Transmission	Distribution	Customers
<ul style="list-style-type: none"> • no longer utility only • no longer regulated • suppliers compete 	<ul style="list-style-type: none"> • remains utility only • lines open to all suppliers 	<ul style="list-style-type: none"> • remains utility responsibility • service remains the same • rates remain regulated 	<ul style="list-style-type: none"> • choose generation suppliers

In the current electric marketplace, PG&E no longer owns a substantial amount of generation, with the exception of its hydroelectric and nuclear assets. However, PG&E has announced plans to invest billions in new generation over the next several years and is poised to re-enter the generation market that it exited during the restructuring period of the late 1990s. PG&E purchases the rest of its electric needs from the wholesale marketplace and is the monopoly provider of transmission and distribution services. Under CCA, the customer (i.e. the CCA Provider) chooses the types and amount of generation that it purchases (or owns) for its constituents. Customers are able to choose the generation services offered by the CCA or the generation services offered by the incumbent utility. The wires (transmission and distribution) continue to be provided by the local monopoly.

PG&E supported AB 117, but its responses to prospective CCA programs throughout the state have been consistently negative. When given the opportunity to comment on specific CCA documents (such as business plans or implementation plans) and/or various programmatic objectives, PG&E has been reluctant to identify any specific aspects of these programs which it supports without qualification or reservation. Furthermore, PG&E has offered limited constructive feedback to prospective CCA programs since the passage of AB 117, choosing to focus its efforts on downplaying and/or challenging the environmental and potential economic benefits of such programs. Nevertheless, PG&E has provided all of the information that the county and cities have requested to date and remains cooperative in the Marin Communities' efforts to gather information necessary to evaluate CCA, which is consistent with the minimum requirements imposed by AB 117. Based on PG&E's active opposition to the SJPVA CCA program and public criticism of the proposed CCA program for the City and County of San Francisco, Marin should expect PG&E to oppose its efforts going forward, including targeted lobbying of large energy customers and political officials.

CCA Program Components (Implementation Plan Requirements)

This section contains a broad overview of the major components of the CCA Program organized under the requirements of AB 117, which state that all CCA Programs must, at a minimum, address the following:

- Organizational structure of the program, its operations, and funding;
- Rate setting and other costs to participants;
- Disclosure and due process in setting rates and allocating costs among participants;
- Methods for entering and terminating agreements with other entities;
- The rights and responsibilities of program participants, including, but not limited to, consumer protection procedures, credit issues, and shutoff procedures;
- Termination of the Program; and
- A description of the third parties that will be supplying electricity under the program, including, but not limited to, information about financial, technical, and operational capabilities.

Additionally, AB 117 added Section 366.2 (c)(3) to the California Public Utilities Code requiring that an Implementation Plan provide for:

- Universal access;
- Reliability;
- Equitable treatment of all classes of customers; and
- Any requirements established by state law or by the CPUC concerning aggregation services.

There are several other cities or potential groups of cities and/or counties around California that are also considering implementing a CCA program. To date there is only one CCA program operating in California, the San Joaquin Valley Power Authority, scheduled to begin serving customers in 2008.⁶ The first CCA Implementation Plan in California was submitted to the California Public Utilities Commission by a new joint powers agency, the SJVPA, which represents municipalities in the greater Fresno area, on January 29, 2007. Subsequent to this submittal, the SJVPA filed revisions with the CPUC on April 27, 2007 and again on August 27, 2007. On September 7, 2007, the California Public Utilities Commission provided notice to the SJVPA certifying that its current Implementation Plan contained sufficient data, as required by California Public Utilities Code Section 366.2. Much has been and will continue to be learned from the experiences of the SJVPA as it proceeds with its formation and commencement of operations during 2007. Other notable CCA efforts include the City and County of San Francisco, the City of Victorville, the East Bay Communities, the City of Chula Vista, and the Cities of Beverly Hills and West Hollywood.

⁶ Community aggregation programs also exist in other states including Massachusetts, Texas, and Ohio. The Ohio program is very similar to the CCA programs proposed for California.

Program Implementation

There are several major steps that would need to be accomplished prior to the initiation of the CCA program outlined in this business plan. Following completion of the final business plan, creation of the necessary program agreements, and a decision to proceed with developing an Implementation Plan, the first major step would be for the county and cities to approve a joint powers agreement and to form the JPA. The county and each city would also need to pass unique ordinances, as required by AB 117, declaring the county's and each city's intent to file a CCA Implementation Plan through Marin Clean Energy. Formation of the JPA will be a significant milestone. Once formed, the JPA can solicit offers for power supply and other services, adopt an Implementation Plan, and file the Implementation Plan with the CPUC. These activities would take place before a final program evaluation is made, making formation of MCE a critical step in the CCA evaluation process.

The planned sequence of events showing major steps prior to the CCA program beginning to serve customers is shown in the following table. Approval of voters is not legally required for formation of a CCA program, but the county and cities have allowed time in their implementation schedule for individual communities to hold an election on this issue, if this becomes necessary.⁷ As proposed, the JPA would require at least three participants, including the County of Marin, the City of San Rafael and the City of Novato, to execute the JPA agreement to become effective.

⁷ The County of Marin has mentioned that the decision to proceed with CCA may require a ballot measure for the county and certain participating cities in the event that a rate increase, relative to generation rates charged by PG&E, is projected. Potential generation rates of the Program will become more certain after the Program receives responses to its request for bids from energy suppliers in January 2009.

Timeline for Implementation

ACTIVITY	TIMELINE
Complete Business Plan	March 2008
Task Force Review of Business Plan Complete	March 2008
Begin Developing Draft JPA Agreement	March 2008
Begin Developing Draft Implementation Plan	March 2008
Public Workshops and Community Outreach	March 2008 – November 2008
City and County Ordinances	April 2008 – November 2008
Approve and Execute JPA Agreement	December 2008
Issue Supplier Request for Bids and Select Seller	+30 Days
Approve Implementation Plan	+120 Days
Approve Program Agreement 1	+120 Days
File Implementation Plan with CPUC	+120 Days
Final Evaluation upon CPUC Certification of filed Implementation Plan	+180 Days
Final Go/No Go Decision by Marin Clean Energy	+200 Days
File Registration Package with CPUC	+230 Days
Resolve Outstanding Issues	+240 Days
Execute Supplier/Vendor Contracts	+260 Days
Staffing and Startup Activities	+270 Days
Finalize Initial Rates	+270 Days
60 Day Notice	+270 Days
Go live phase 1	+330 Days

This section outlines a proposed organizational plan for Marin's CCA program, including proposed governance principles for a new joint powers agency that would administer the program. This section defines the necessary agreements and describes how the program would be governed, managed, and staffed.

Organizational Overview

Pursuant to AB 117, a CCA may be a city, a county, a city and county, or a combination of cities and counties that have elected to jointly implement a CCA program through formation of a joint powers agency ("JPA"). The geographic boundaries of participating cities and/or counties need not be contiguous. The proposed governance structure for the program is formation of a new JPA whose Board of Directors would have primary responsibility for managing all aspects of a common CCA program for the County of Marin, California (County) as well as the eleven cities within the geographic boundaries of the County. According to the implementation timeline presented in Chapter 1, a deadline of December 31, 2008 has been imposed for the County of Marin as well as each of the eleven cities to vote on joining the JPA (and pass a related ordinance in accordance with state law). For purposes of this business plan, the new JPA will be referred to as the Marin Clean Energy Joint Powers Authority or simply "Marin Clean Energy" or "MCE".

As proposed, the Program would be governed by MCE's Board of Directors (Board), appointed by the Members. MCE would be a joint exercise of powers agency formed under California law. The County of Marin and each city that has elected to offer the Program to its constituents would become a Member of MCE. Marin Clean Energy would be the CCA entity that would register with the CPUC, and it would be responsible for implementing and managing the program pursuant to the Joint Powers Agreement. The Program would be operated under the direction of an Executive Director appointed by the Board of Directors. The Executive Director would report to MCE's Board of Directors comprised of one representative from each participating Member of MCE. Those who will be eligible to serve as representatives on the Board will be elected officials from the then-current County Board of Supervisors (one Board representative will be selected from the County Board of Supervisors) and the City Councils (one representative will be selected from each of the eleven City Councils) of the eleven member cities. Representatives serving on the Board may be provided with a periodic stipend (\$100 per representative per month, for example) as part of their participation in this governing body. The Board may adjust or discontinue the payment of such stipends at its discretion.

The Board of Director's primary duties would be to establish program policies, set rates and provide policy direction to the Executive Director, who will have general responsibility for program operations, consistent with the policies established by the Board. The Board will also determine necessary staffing levels, individual titles and related compensation within MCE.

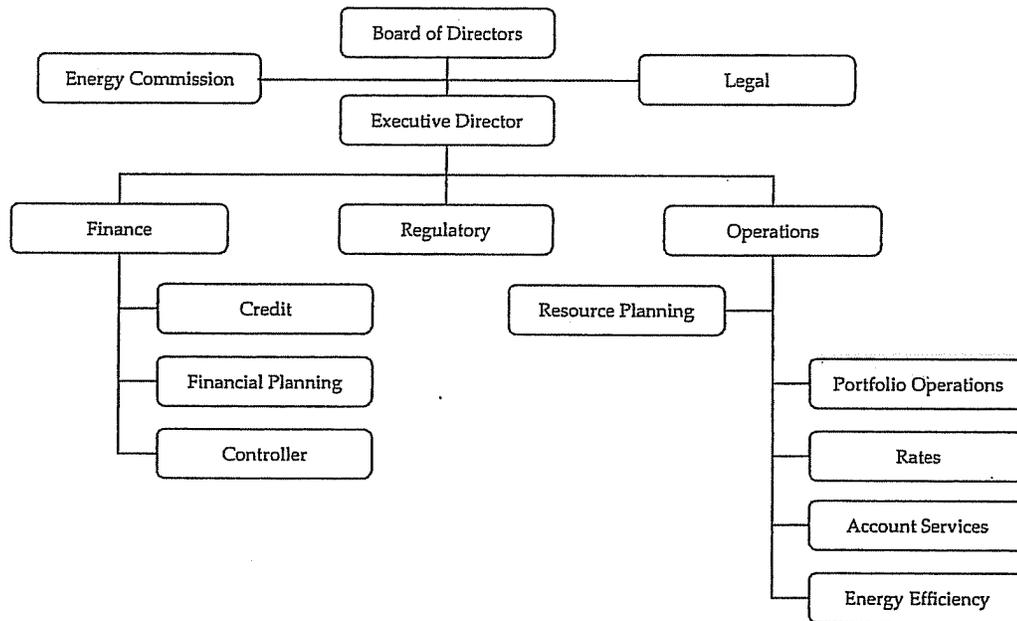
The Board may also adjust staffing levels and compensation over time in response to varying workloads, specific programs and/or general responsibilities of MCE.

The Executive Director could be an employee of MCE, an individual under contract with MCE, a corporation, or any other person so designated by the Board. The Board would be responsible for evaluating the Executive Director's performance and is ultimately responsible for hiring and terminating the Executive Director.

The Board would also establish a Chairman and other officers from among its membership and may establish an Executive Committee and other committees and sub-committees as needed to address issues that require greater expertise in particular areas (e.g., finance or contracts). MCE will establish an "Energy Commission" formed of Board-selected designees. The Energy Commission will have responsibility for evaluating various issues that may affect MCE and its customers, including rate setting, and will provide analytical support and recommendations to the Board in these regards. The following chapter contains proposed elements of a JPA agreement. Once the principles are agreed to by representatives of the county and cities, a JPA agreement that defines the terms and conditions by which MCE will be governed would be developed by qualified legal counsel.

The Executive Director would have responsibilities over the functional areas of Finance, Regulatory Affairs, and Operations. It is recommended that operations would be conducted utilizing a combination of internal staff and contractors. Certain specialized functions needed for program operations, namely the electric supply and customer account management functions described below, should be performed initially by experienced third-party contractors. The Program organizational chart showing relationships among the Board of Directors, the Executive Director and the functional areas is shown in the following figure.

Program Organization



Governance

Marin Clean Energy would have a Board of Directors consisting of one representative from each of the Members. As previously noted, those who will be eligible to serve as representatives on the Board will be elected officials from the then-current County Board of Supervisors and the City Councils of the eleven member cities. The Board would meet at regular intervals to provide the overall management and guidance for MCE. All Board meetings would be public and held in accordance with the Ralph M. Brown Act.

Decisions by MCE would take place under voting procedures defined in the JPA Agreement. All votes on a particular matter are subject to a two-tier approval process: first, any decision must be approved by a simple majority of the Directors at the Governing Board meeting; second, assuming the first requirement is reached, those Directors voting in the affirmative must constitute over 50 percent of a weighted voting percentage comprised of equal treatment of each Member's electricity requirements (expressed as a ratio of each Member's electricity requirements divided by total energy requirements of the Program) and a pro rata percentage of total membership. That is, one-half of the combined vote is based upon the total number of Members (i.e., 12 Members each receive 4.17 percent [50%/12]) and one-half of the combined vote is based upon annual electric usage. The following table is illustrative of the proposed voting percentages for the second tier vote.

Voting Percentages for the Second Tier Vote

Member	Estimated Percent of Total Program Load	Load Voting Percentage (50%)	Pro Rata Percentage (50%)	Total Voting Percentage (Tier 2)
Belvedere	0.79%	0.40%	4.17%	4.57%
Corte Madera	5.70%	2.85%	4.17%	7.02%
Fairfax	1.78%	0.89%	4.17%	5.06%
Larkspur	4.79%	2.40%	4.17%	6.57%
Marin County	25.05%	12.52%	4.17%	16.69%
Mill Valley	4.88%	2.44%	4.17%	6.61%
Novato	20.20%	10.10%	4.17%	14.27%
Ross	1.00%	0.50%	4.17%	4.67%
San Anselmo	3.60%	1.80%	4.17%	5.97%
San Rafael	25.04%	12.52%	4.17%	16.69%
Sausalito	3.94%	1.97%	4.17%	6.14%
Tiburon	3.22%	1.61%	4.17%	5.78%
	100%	50.0%	50.0%	100.00%

An alternative second tier voting structure would emphasize number of customer accounts as opposed to electricity requirements. In this case, the first tier vote, which must achieve simple majority approval, does not change. However, in the alternative second tier voting structure, those Directors voting in the affirmative must constitute over 50 percent of a weighted voting percentage comprised of equal treatment of each Member's customer account total (expressed as a ratio of each Member's customer account total divided by the total number of customer accounts within the Program) and a pro rata percentage of total membership. That is, one-half of the combined vote is based upon the total number of Members (i.e., 12 Members each receive 4.17 percent [50%/12]) and one-half of the combined vote is based upon number of customer accounts. The following table illustrates the proposed alternative voting percentages for the second tier vote.

Alternative Voting Percentages for the Second Tier Vote

Member	Estimated Percent of Total Program Accounts	Account-Based Voting Percentage (50%)	Pro Rata Percentage (50%)	Total Voting Percentage (Tier 2)
Belvedere	0.95%	0.47%	4.17%	4.64%
Corte Madera	3.87%	1.94%	4.17%	6.11%
Fairfax	3.07%	1.53%	4.17%	5.70%
Larkspur	5.48%	2.74%	4.17%	6.91%
Marin County	24.96%	12.48%	4.17%	16.65%
Mill Valley	5.60%	2.80%	4.17%	6.97%
Novato	19.20%	9.60%	4.17%	13.77%
Ross	0.80%	0.40%	4.17%	4.57%
San Anselmo	4.94%	2.47%	4.17%	6.64%
San Rafael	22.93%	11.46%	4.17%	15.63%
Sausalito	4.35%	2.17%	4.17%	6.34%
Tiburon	3.86%	1.93%	4.17%	6.10%
	100%	50.0%	50.0%	100.00%

Officers

MCE would have a Chair and Vice-Chair elected to one-year terms by the Board of Directors. Both the Chair and Vice-Chair must be members of the Board. In addition, MCE would have a Board Clerk and Auditor; neither of which will be members of the Board of Directors. The JPA Agreement will provide further details on each of these positions.

Committees

MCE may elect to have additional committees or working groups to address various topics. Potential committees include: Resource Committee, Finance/Budget/Audit Committee, Legal/Regulatory Committee, and Risk Management Committee. In addition to these potential committees, MCE would form an appointed Energy Commission, which will be comprised of Board designees from the Member communities. Appointments will be made based on various skill sets and expertise that will be useful in evaluating matters affecting MCE and its customers, specifically issues related to rate setting and other technical matters. The Energy Commission will provide the Board with recommendations and related analysis to support policy-level decisions of the Board. Any additional committees and their functions would be determined by the Board of Directors at the time each committee is created.

Addition/Termination of Participation

The proposed principles for a JPA Agreement provide for the addition of new participants subject to the affirmative vote of MCE's Board of Directors pursuant to the voting structure described above. The Board would determine the specific terms and conditions under which a new Member could be admitted; for example, a new Member might be subject to a buy-down fee for costs incurred by the original Members in establishing the Program.

A JPA Member would be able to withdraw itself from the JPA subject to the specific terms and conditions ultimately contained in the JPA Agreement. As proposed, withdrawal of individual Members may occur upon 60 days written notice prior to the expiration of each fiscal year (July 1). The Member's withdrawal would then become effective one full fiscal year later, an effective 14-month notice requirement. The withdrawing party would also be subject to all reasonable ongoing costs incurred by MCE on behalf of that entity. In this case, a vote of the Board would not be required to affect Member withdrawal. Furthermore, the municipal load of a Member withdrawing from the JPA would no longer be served by MCE, however, the non-municipal accounts (such as residential, commercial and industrial accounts) would remain customers of MCE and would continue to receive electricity procured by MCE on their behalf. Because these non-municipal accounts would remain customers of MCE, the withdrawing Member would continue to provide a Board representative from among its elected officials to ensure that the interests of its constituents are represented during policy-making decisions of the Board.

Conversely, if a Member desired to remove its future non-municipal accounts from MCE service while retaining service for its municipal accounts, Board approval based on either of the aforementioned two-tiered voting structures would be required. In this instance, any existing non-municipal accounts would continue to receive electric service from MCE; only future non-municipal accounts would be affected. Only in the event that the JPA agrees to disband would the requirement of Board representation by all Members cease.

Termination of Marin Clean Energy

The proposed principles for a JPA Agreement include provisions addressing termination of Marin Clean Energy. As proposed, termination of MCE would only occur after a majority of the Member's governing bodies (County Board of Supervisors and/or City Councils) adopt a termination ordinance or resolution and provide adequate notice to MCE (such as 90 days). Following such notice, MCE would vote on its termination subject to a two-tiered vote, as previously described. In the event that the Board affirmatively votes to proceed with JPA termination, the Board would disband under the provisions identified in its JPA Agreement. In recognition of this possibility, all contracts executed by the Board will include terms and conditions addressing the resolution of any remaining contractual obligations of the Board (such as contract buyouts, termination payments, contractual assignments, etc.). Termination of MCE is also addressed in Chapter 8, Program Termination.

Agreements Overview

There are two principal agreements that would govern MCE and its CCA Program: the JPA Agreement and Program Agreement No. 1 (PA-1). Each of these agreements and its functions are discussed below.

Joint Powers Agreement

The JPA Agreement would create MCE and delineate a broad set of powers related to the study, promotion, development, and conduct of electricity-related projects and programs. It is

anticipated that MCE would have broad authorities and powers, but a very limited role without implementing agreements ("program agreements") to carry out specific programs. This structure is intended to provide flexibility for MCE to undertake other programs in the future that may be unrelated to CCA on behalf of all or a subset of MCE's Members. However, the Board will have limited decision making authority regarding land use within the Member communities. Any issues involving land use within Member communities will be raised with the potentially effected Member. In these instances, the land use and building regulations of each Member shall apply to any JPA facilities located within the jurisdiction of that Member.

Any amendments to the JPA Agreement will be subject to prior approval by each of the Member's governing bodies (County Board of Supervisors and/or City Councils). Following such approval, MCE would vote on prospective amendments subject to a two-tiered vote, as previously described.

The first program agreement or PA-1, discussed in greater detail below, would provide for the development, implementation and operation of a CCA Program. At MCE's Members' discretion, future program agreements could provide for other energy related programs. The JPA Agreement specifies the governance provisions of MCE, which is discussed in greater detail below.

Program Agreement No. 1

PA-1 would outline the framework for the CCA Program, and transfer the participating Members' authority under AB 117 to MCE. Approval of PA-1 by a participant would authorize the initiation of the CCA Program for its jurisdiction, subject to a commencement notice to be made by the JPA Board. It is anticipated that the county and cities would consider approval of PA-1 after proposals have been received in response to MCE's supplier selection process and the economics of the Program have been confirmed.

Agency Operations

Marin Clean Energy would conduct program operations through its own internal staff and through contracting for services with third parties. MCE would have its own General Counsel to manage its legal affairs. MCE's Executive Director will have responsibility for day-to-day operations of the Program. To assist the Executive Director, MCE will hire a full-time Administrative Assistant, who will also serve as Board Clerk, as well as a full-time Policy Analyst to provide analytical support and regulatory review.

Major MCE functions that will be performed and managed by the Executive Director are summarized below.

Resource Planning

Marin Clean Energy would be charged with developing both short (one and two-year) and long-term resource plans for the program. The Executive Director would manage staff and contractors to develop the resource plan under the guidance provided by the Board and in

compliance with California Law, and other requirements of California regulatory bodies (CPUC and CEC).

Long-term resource planning includes load forecasting and supply planning on a ten- to twenty-year time horizon. MCE's CCA planners will develop integrated resource plans that meet program supply objectives and balance cost, risk and environmental considerations. Integrated resource planning considers demand side energy efficiency and demand response programs as well as traditional supply options. The CCA Program will require an independent planning function even if the day-to-day supply operations are contracted to a third party energy supplier. A preliminary long-term resource plan is contained in Chapter 3. It is anticipated that such plans would be updated and adopted by the Board on an annual basis.

Portfolio Operations

Portfolio operations encompass the activities necessary for wholesale procurement of electricity to serve end use customers. These highly specialized activities include the following:

- *Electricity Procurement* – assemble a portfolio of electricity resources to supply the electric needs of program customers.
- *Risk Management* – standard industry techniques will be employed to reduce exposure to the volatility of energy markets and insulate customer rates from sudden changes in wholesale market prices.
- *Load Forecasting* – develop accurate load forecasts, both long-term for resource planning and short-term for the electricity purchases and sales needed to maintain a balance between hourly resources and loads.
- *Scheduling Coordination* – scheduling and settling electric supply transactions with the CAISO.

MCE will initially contract with an experienced and financially sound third party to perform most of the portfolio operation requirements for the CCA Program. This will include the procurement of energy and ancillary services, scheduling coordinator services, and day-ahead and real-time trading. A description of the planned selection process for the third parties that will be supplying electricity under the program is contained in Chapter 6.

As MCE gains experience and begins internalizing more of the functions initially provided by third parties, it will be important for MCE to approve and adopt a set of Program Controls that would serve as the risk management tools for the Executive Director and any third party involved in the program's portfolio operations. Program Controls will define risk management policies and procedures and a process for ensuring compliance throughout the organization. During the initial startup period, the chosen full requirements electric supplier will bear the majority of program risks, pursuant to the terms and conditions of the electric supply agreement.

Energy Efficiency

A key focus of the CCA Program will be the development and implementation of an energy efficiency program for MCE's Members. The Executive Director will be responsible for further development of this Program. To assist the Executive Director in this regard, MCE will hire a full-time Energy Efficiency Program Manager and three full-time Energy Efficiency Project Managers to administer the energy efficiency program, develop energy efficiency marketing strategies, perform customer outreach and conduct related analyses to support chosen courses of action. As experience is gained from the retail energy side of the CCA Program, MCE will continue enhancing its Energy Efficiency program to achieve desired goals and objectives of the program. Energy efficiency program potential is discussed in Chapter 3.

MCE would administer energy efficiency, demand response programs, and distributed (solar) generation that can be used as cost-effective alternatives to procurement of supply-side resources. MCE would attempt to consolidate existing demand side programs into this organization and leverage the structure to expand energy efficiency offerings to customers throughout its service territory, potentially through the CPUC application process for third party administration of energy efficiency programs and use of funds collected through the existing public goods surcharges paid by MCE's customers.

Rate Setting

The Board of Directors would have the ultimate responsibility for setting the electric generation rates for the Program's customers. The Executive Director in cooperation with Marin Clean Energy's Energy Commission would be responsible for developing proposed rates and options for the Board to consider before the finalization of the actual rates, subject to the notice requirements and process described in Chapter 5 ("Ratesetting and Program Terms and Conditions"). The final approved rates must, at a minimum, meet the annual revenue requirement developed by the Executive Director, including any reserves or coverage requirements set forth in bond covenants. The Board will have the flexibility to consider rate adjustments within certain ranges, provided that the overall revenue requirement is achieved; this provides an opportunity for economic development rates or other rate incentives.

Financial Management/Accounting

The Executive Director will be responsible for managing the financial affairs of MCE, including the development of an annual budget and revenue requirement; managing and maintaining cash flow requirements; potential bridge loans and other financial tools; and a large volume of billing settlements. The Executive Director will use contractors and/or staff in support of these activities, as appropriate.

The Finance function arranges financing for capital projects, prepares financial reports, and ensures sufficient cash flow for the program. This function also plays an important role in risk management by monitoring the credit of suppliers so that credit risk is properly understood and mitigated by the Program. In the event that changes in a supplier's financial condition and/or credit rating are identified, the Program will be able to take appropriate action, as would

be provided for in the electric supply agreement. The Finance function establishes credit policies that the program must follow.

It is planned that the retail settlements (customer billing) would be contracted out to an organization with the necessary infrastructure and capability to handle approximately 111,000 accounts during Phase 3 implementation in January 2011. This function is described under Customer Services, below.

Customer Services

In addition to general program communications and marketing, a significant focus on customer service, particularly representation for key accounts, will be necessary. This will include both a call center designed to field customer inquiries and routine interaction with customer accounts. The Executive Director will be responsible for the Customer Services function.

The Customer Account Services function performs retail settlements-related duties and manages customer account data. It processes customer service requests and administers customer enrollments and departures from the program, maintaining a current database of customers enrolled in the program. This function coordinates the issuance of monthly bills through the distribution utility's billing process and tracks customer payments. Activities include the electronic exchange of usage, billing, and payments data with the distribution utility and MCE, tracking of customer payments and accounts receivable, issuance of late payment and/or service termination notices, and administration of customer deposits in accordance with MCE credit policies.

The Customer Account Services function also manages billing related communications with customers, customer call centers, and routine customer notices. MCE would initially contract with a third party, which has demonstrated the necessary experience and administers appropriate computer systems (customer information system), to perform the customer account and billing services functions.

MCE would conduct the general program marketing and key customer account management functions. These responsibilities include the assignment of account representatives to key accounts, which will ensure high levels of customer service to these businesses, and implementation of a marketing strategy to promote customer satisfaction with the CCA program. Ongoing communications, marketing messages, and information regarding the CCA Program to all customers will be critical for the overall success of the CCA Program.

Legal and Regulatory Representation

The CCA Program will require ongoing regulatory representation to file resource plans, resource adequacy, compliance with California RPS, and overall representation on issues that will impact MCE and its Members. MCE will maintain an active role at the CPUC, CEC, and, as necessary, FERC and the California legislature. Day-to-day analysis and reporting of pertinent legal and regulatory issues will be completed by the Executive Director's Policy Analyst.

MCE would retain legal services, as necessary, to administer MCE, review contracts, and provide overall legal support to the activities of MCE.

Roles and Functions

Marin Clean Energy Board would perform the functions inherent in its policy-making, management and planning roles. MCE would also be the public face of the program and have a direct role in marketing, communications and customer service. As previously noted, other highly specialized functions, such as energy supply and account management, would be contracted out to third parties with sufficient experience, technical and financial capabilities. The functions that would initially be performed by MCE’s Board of Directors, the Executive Director and third parties are specified below:

Organization	Roles/Functions/Activities
MCE Board of Directors	<i>Executive/Policy/Legal</i>
Executive Director	<i>Finance</i>
	<i>Legal and Regulatory</i> <ul style="list-style-type: none"> - <i>Legal support</i> - <i>Participation in regulatory proceedings</i> - <i>Regulatory reporting</i>
	<i>Marketing/Communications</i>
	<i>Rates & Support</i> <ul style="list-style-type: none"> - <i>Rate policy</i> - <i>Rate design</i> - <i>Cost-of-service planning</i>
	<i>Resource Planning</i> <ul style="list-style-type: none"> - <i>Load research</i> - <i>Load forecasting</i> - <i>Supply-side/Demand side portfolio planning</i>
	<i>Contract Management – RFP/RFQ</i>
	<i>Customer Service</i> <ul style="list-style-type: none"> - <i>Account representatives</i> - <i>Energy efficiency program management</i>
Energy Supplier	<i>Supply Operations</i> <ul style="list-style-type: none"> - <i>Procurement</i> - <i>Scheduling coordination</i> - <i>Settlements (ISO/Wholesale)</i> - <i>Short-term load forecasting</i>
Customer Account Services Provider/Data Manager	<i>Account Management (Customer Information System)</i> <ul style="list-style-type: none"> - <i>Customer switching</i> - <i>New customer processing</i> - <i>Data exchange (EDI)</i> - <i>Payment processing (AR/AP)</i> - <i>Billing and retail settlements</i> - <i>Call center</i>

MCE would enter into two key contracts with third parties to provide the day-to-day operational functions necessary to procure electricity and manage customer account data. The

first of these contracts is with the Program's energy supplier to perform the Supply Operations. The second key contract is with a data management provider to perform the Account Management functions. MCE would select the contractors for these key roles through a competitive solicitation. Information on the recommended solicitation process to select qualified potential service providers is contained in Chapter 6.

Staffing

Staffing requirements for the above MCE functions are approximately twenty and one-half full time equivalent positions, once the customer phase-in is complete and the program is fully operational. These staffing requirements are in addition to the services provided by the third party energy suppliers and the data manager. The Executive Director would have discretion whether to internally staff these required functions or to contract for these services.

The following table illustrates the expectations for start-up, near-term (two to five years), and long-term anticipated staffing roles.

Expectations for Staffing Roles

Function	Start-Up	Near-Term (2 to 5 Years)	Long-Term
Program Governance	MCE Board	MCE Board	MCE Board
Program Management	MCE ED	MCE ED	MCE ED
Outreach	MCE ED	MCE ED	MCE ED
Customer Service	MCE ED	MCE ED	MCE ED
Key Account Management	MCE ED	MCE ED	MCE ED
Regulatory	Third Party (MCE ED and Regulatory Analyst support)	MCE ED (Regulatory Analyst support)	MCE ED (Regulatory Analyst support)
Legal	MCE ED	MCE ED	MCE ED
Finance	MCE ED	MCE ED	MCE ED
Rates: Approve Develop	MCE Board MCE ED (third Party support)	MCE Board MCE ED (third Party support)	MCE Board MCE ED
Resource Planning	Third Party (MCE ED support)	MCE ED (third party support)	MCE ED
Energy Efficiency	Third Party	Third Party (MCE ED and Program Energy Efficiency Staff support)	MCE ED (Program Energy Efficiency Staff)
Resource Development	MCE ED (third party support)	MCE ED (third party support)	MCE ED
Portfolio Operations	Third Party	Third Party (MCE ED support)	MCE ED
Scheduling Coordinator	Third Party	Third Party	Third Party (potentially MCE ED)
Data Management	Third Party	Third Party	Third Party (potentially MCE ED)

Staff would be added incrementally to match workloads involved in forming the new organization, managing contracts, and initiating customer outreach/marketing during the pre-operations period. During the pre-startup period, minimal staffing requirements would include an Executive Director, an Assistant to the Executive Director, a Policy Analyst and a Sales and Marketing Manager (4 full time equivalent positions). MCE anticipates hiring the Executive Director, Assistant to the Executive Director, Policy Analyst and Marketing Manager as its direct staff but may choose to fill all other necessary positions with staff and/or contractors at the discretion of the Executive Director and MCE's Board. Following these initial staffing efforts, additional staff and/or contractors would be added during the Phase 1 customer enrollment period and following commencement of service to Phase 1 customers. The organization should be nearly fully staffed by the time the Phase 2 customers are enrolled. Phase 2 contains the key commercial and industrial customer segments, the largest of which would have assigned customer account representatives.

The following table provides an estimate of the appropriate staff additions (internal staff or equivalent contracted functions) that MCE would require for 2009–2010 to implement and operate the CCA Program. Actual staff will be dependent upon several factors, including the ability to recruit and hire qualified staff and personnel policies ultimately established by the Executive Director and the Board of Directors.

Internal Staffing Estimates

Staffing Plan (FTEs)	Pre-Startup						Enrollment 1 - Pilot Phase	Cutover 1	Phase 1 Operations		Notification and Enrollment Period		Cutover 2
	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09			Dec-09	Jan-10	Feb-10	Mar-10	
Management													
Executive Director	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Policy Analyst	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Administrative Assistant	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Finance and Rates													
Manager	-	-	-	-	-	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Rates Analyst	-	-	-	-	-	-	-	-	-	-	1.0	1.0	1.0
Accounting/Billing Analyst	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0	1.0	1.0
Sales And Marketing													
Manager	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Account Representatives	-	-	-	-	-	-	-	-	-	3.0	4.0	4.0	4.0
Communications Specialist	-	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0	1.0
Administrative Assistant	-	-	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0
Energy Efficiency													
Manager	-	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0	1.0
Project Manager	-	-	-	-	-	-	-	-	3.0	3.0	3.0	3.0	3.0
Regulatory													
Manager	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0	1.0	1.0
Regulatory Analyst	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0	1.0	1.0
Information Technology													
IT Specialist	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0	1.0	1.0
Human Resources													
HR Specialist	-	-	-	-	-	-	-	-	0.5	0.5	0.5	0.5	0.5
Subtotal Staffing	4.0	4.0	4.0	4.0	4.0	4.0	5.0	9.0	14.5	18.5	20.5	20.5	20.5

The following table shows the staffing plan for Marin Clean Energy at initial full-scale operational levels (Phase 3). Customer service for the mass market residential and small commercial customers will be provided by the Program's third party customer account services provider.

**Staffing Plan for Marin Clean Energy
Community Choice Aggregation Program**

Position	Staff (Full Time Equivalents)
Management	
Executive Director	1.0
Policy Analyst	1.0
Administrative Assistant	1.0
Finance and Rates	
Manager	1.0
Rates Analyst	1.0
Accounting/Billing Analyst	1.0
Sales and Marketing	
Manager	1.0
Account Representative	4.0
Communications Specialist	1.0
Administrative Assistant	1.0
Energy Efficiency	
Manager	1.0
Project Manager	3.0
Regulatory	
Manager	1.0
Regulatory Analyst	1.0
Information Technology	
IT Specialist	1.0
Human Resources	
HR Specialist	0.5
Total Staffing	20.5

Introduction

This Chapter describes MCE's proposed ten-year integrated resource plan, which would create a highly renewable, diversified portfolio of electricity supplies capable of meeting the electric demands of MCE's retail customers, plus sufficient reliability reserves. This integrated resource plan reflects a long-term, programmatic goal of 100 percent renewable energy supply. Within five years of program commencement (2014), this significant commitment to renewable resources is projected to result in MCE meeting over 80 percent of its total electric needs through renewable resources. As the program moves forward, incremental renewable supply additions will be made based on resource availability as well as economic goals of the program. MCE's aggressive commitment to renewable generation adoption will involve both direct investment in new renewable generating resources through partnerships with experienced public power developers/operators, significant purchases of renewable energy from third party suppliers and, potentially, the purchase of Renewable Energy Certificates (RECs) from the market. The resource plan also sets forth ambitious targets for improving customer side energy efficiency as well as for deployment of approximately 13 MW of new distributed solar capacity within the jurisdictional boundaries of MCE by 2019 (year ten of Program operations).

The plan described in this section would accomplish the following by 2019:

- Procure energy needed to offer two generation rate tariffs: 100 percent Green and 25 percent Light Green through a full-requirements contract with an experienced, financially stable energy supplier. Through this contract, the remaining energy requirements for the Light Green Tariff will be supplied from efficient, low emission conventional generating resources.
- Increase the renewable content of the Light Green Tariff to over 50 percent and the average renewable energy supplies of the program to over 80 percent by 2014, based on projected levels of participation in MCE's two available generation tariffs.
- Continue increasing renewable energy supplies beyond 2014 based on resource availability and economic goals of the program.
- Develop partnership(s) with experienced public power developer(s) to facilitate development of Program-owned/controlled renewable generating capacity.
- Invest in 200 MW of new renewable generating capacity to be online by 2014.
- Achieve incremental reductions in greenhouse gas emissions ranging from 302,330 to 534,369 tons per year, as much as 17 percent of the Marin Communities' total GHG emissions.

MCE would be responsible to comply with regulatory rules applicable to California load serving entities. MCE would arrange for the scheduling of sufficient electric supplies to meet the hour-by-hour demands of its customers. MCE would also need to adhere to capacity reserve requirements established by the CPUC and the CAISO designed to address uncertainty in load forecasts and potential supply disruptions caused by generator outages and/or transmission contingencies. These rules also ensure that physical generation capacity is in place

to serve the Program's customers, even if there were to be a need for the Program to cease operations and return customers to PG&E. In addition, MCE would be responsible for ensuring that its resource mix contains sufficient production from renewable energy resources needed to comply with the statewide renewable portfolio standards (20 percent renewable energy supply by 2010). The resource plan would meet or exceed all of the applicable regulatory requirements related to resource adequacy and the renewable portfolio standard.

Program Phase-In

Marin Clean Energy would phase-in its CCA Program over the course of three stages:

1. Participant (Municipal) Accounts;
2. Commercial and Industrial Accounts; and
3. All Remaining Accounts.

This approach provides MCE with the ability to start slow, address any problems or unforeseen challenges on a small manageable program before gradually building to full program integration for an expected 111,000 plus customer base. This approach also provides for MCE and its primary contractors to address all system requirements (billing, collections, payments) under a phase-in approach to minimize potential exposure to uncertainty and financial risk by introducing the Program on a small, highly manageable scale prior to expanding the Program in deliberate, incremental stages.

Phase 1 – Participant Accounts

Phase 1 of the Program would be targeted to begin on January 1, 2010; subject to the following conditions being met: CPUC approval of MCE's Implementation Plan; final approval of the Program by the Parties (via the JPA Agreement and approval of Program Agreement No. 1); completion of all necessary implementing agreements including those with suppliers, the investor-owned utilities, and potentially others; and execution of MCE's start-up staffing plan.

Phase 1 will consist solely of the direct electric accounts of the Program Participants' (Member cities and Marin County) loads. Under this approach it is expected that the opt-out rate for accounts (and load) for the Marin Communities will be zero percent. Of the participating accounts, it is assumed that all accounts will participate in MCE's 100 percent Green Tariff. This would result in approximately 600 accounts representing a load of 21 GWh annually, all of which would be served with 100 percent renewable energy supplies. Energy supply for Phase 1 would be met via agreements entered into by MCE with third-party energy service providers.

Phase 2 – Large Accounts

Phase 2 of the Program is targeted to begin approximately five months after Phase 1; however, MCE's Board of Directors would have the authority to potentially adjust this starting date depending upon the performance of the Program under Phase 1. The intent is to ensure that the Program is operating properly, including proper procurement and delivery of electricity, as well as billing and receivables from the Member Participants' own loads prior to rolling the Program out to commercial customers.

Phase 2 of the Program is focused on medium and large electric users; those accounts that typically have demands in excess of 50 kW, in addition to the customers already included in Phase 1.⁸ For modeling purposes it is assumed that 100 percent of direct access customers and 10 percent of bundled service customers will opt-out of the CCA Program entirely and that the following tariff-specific participation rates will apply to remaining customers included in Phase 2, subject to marketing efforts of the program:

- Medium Commercial: 70 percent participation in 100 percent Green; 30 percent participation in Light Green Tariff;
- Large Commercial: 5 percent participation in 100 percent Green; 95 percent participation in Light Green Tariff;
- Industrial: 5 percent participation in 100 percent Green; 95 percent participation in Light Green Tariff; and
- Agricultural: 20 percent participation in 100 percent Green; 80 percent participation in Light Green Tariff.

This provides for an estimate incremental Phase 2 customer class of approximately 1,200, with an annual load of 364 GWh.

Phase 3 – All Accounts

The final Phase (Phase 3) provides for all electric customers within the service territory of MCE's Participating Members to have the option of participating in the CCA Program. Within Phase 3, it is expected that all direct access customers and 10 percent of eligible bundled service customers will opt out of the CCA program. Of the 90 percent of Phase 3 customers that remain with the program, it is expected that 70 percent will elect to participate in the 100 percent Green Tariff. The remaining 30 percent of participating Phase 3 customers are assumed to participate in the Light Green Tariff due to cost sensitivity. This represents a significant increase in the number of customers and the overall energy requirements for the program as the incremental growth for Phase 3 is approximately 109,000 customers and 837 annual GWh.

The assumed start date for Phase 3 of the Program is eight months after the commencement of Phase 2, again subject to the final review and approval of MCE's Board of Directors.

Resource Plan Overview

The criteria used to guide development of the proposed resource plan includes the following:

- Environmental responsibility and commitment to renewable resources
- Price/Rate Stability
- Reliability and maintenance of adequate reserves
- Cost effectiveness

To meet these objectives and the applicable regulatory requirements, MCE's resource plan should include a diverse mix of generation, power purchases, renewable energy, new energy efficiency programs, demand response, and distributed generation. A diversified resource plan

⁸ Phase 2 would include the A-10, E-19 and E-20 customer classes.

minimizes risk and volatility that can occur from over-reliance on a single resource type or fuel source. The ultimate goal of Marin Clean Energy's resource plan is to maximize use of renewable resources subject to economic and operational constraints. The result is a resource plan that would source over 80 percent of the resource mix from renewable resources by 2014. The planned resource mix is initially comprised of power purchases from third party electric suppliers and, in the longer-term, also includes renewable generation assets owned and/or controlled by MCE.

MCE's renewable generation, which would be directly owned by MCE or controlled under long-term power purchase agreement with a proven public power developer, would provide a portion of MCE's electricity requirements on a cost-of-service basis. Electricity purchased under a cost-of-service arrangement should be more cost-effective than purchasing renewable energy from third party developers, which will allow the Program to pass on cost savings to its customers through competitive generation rates. As discussed in Chapter 4, the amount of generation proposed to be financed by MCE will be influenced by security requirements necessary for issuance of revenue bonds needed to finance the project. Once the Program demonstrates it can operate successfully for a number of years, additional generation investments would be expected. Additional refinement of security requirements in consultation with the Marin Communities' financial advisors, investment bankers, attorneys, and potentially with customer input may increase the assumed debt carrying capacity of the Program and enable greater investment than shown in this plan.

As an alternative to direct investment, MCE may partner with an experienced public power developer and enter into a long-term (20-to-30 year) power purchase agreement that would support the development of new renewable generating capacity within Marin County or at an alternative location within the Greater Bay Area. Such an arrangement could be structured to virtually eliminate the Program's operational risk associated with capacity ownership while providing Program customers with all renewable energy generated by the facility under contract. This option may be preferable to MCE as it works to achieve increasing levels of renewable energy supply to its customers.

MCE's resource plan will integrate supply-side resources with programs that will help customers reduce their energy costs through improved energy efficiency and other demand-side measures. As part of its integrated resource plan, MCE would actively pursue, promote and ultimately administer a variety of customer energy efficiency programs that can cost-effectively displace supply-side resources. Included in this plan is a targeted deployment of over 13 MW of distributed solar by 2019.

Beginning on January 1, 2007, all owners of distributed solar capacity that applied for state-sponsored rebates were obligated to participate in their respective utility's time-of-use rate tariff. The significantly higher rates in these tariffs have discouraged distributed solar installations in the first quarter of 2007 relative to the same time period in 2006. In fact, on May 8, 2007 the Los Angeles Times reported a 78 percent reduction in solar rebate requests during this three month period, year-over-year, which has been substantially attributed to the time-of-use rate mandate. Public Utilities Code, Section 2851(a)(4) specifies that time-of-use rate structures must create "the maximum incentive for ratepayers to install solar energy systems."

On May 16, 2007, President Peevey of the CPUC issued a Proposed Decision in Rulemaking 06-03-004 staying the time-of-use rate mandate until such time that the Commission is able to develop a new time-of-use rate tariff that meets the expressed requirement of Section 2851.

Unlike customers of the investor-owned utilities who own distributed solar capacity, customers of MCE will not be constrained by PG&E's time-of-use rate structures, as MCE may design rates at the discretion of its Board of Directors. MCE would be free to maximize solar installations without a for-profit entity's concern that reducing customer net energy consumption would detract from shareholder profits. With this in mind, MCE may develop unique rate schedules that create specific incentives for owners of distributed renewable capacity, ensuring that distributed renewable capacity additions continue to occur throughout its jurisdiction. Through the creative development of rate structures that encourage the installation of distributed renewable resources and support ongoing operation of these systems, the Program can ensure high levels of distributed renewable installation as a form of energy efficiency. Over time, MCE will be able to modify these rate structures, based on customer behavior, to achieve desired levels of distributed renewable capacity.

MCE's proposed resource plan for the years 2010 through 2019 is summarized in the following table:

Marin Clean Energy Energy Balance (GWh) 2010 to 2019										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Marin Demand (GWh)										
Retail Demand	-267	-1,234	-1,240	-1,246	-1,252	-1,259	-1,265	-1,271	-1,278	-1,284
Distributed Generation	6	8	10	12	13	15	17	18	19	19
Energy Efficiency	0	4	11	15	15	15	15	15	15	16
Losses and UFE	-18	-86	-85	-85	-86	-86	-86	-87	-87	-87
Total Demand	-280	-1,308	-1,304	-1,305	-1,309	-1,314	-1,319	-1,325	-1,330	-1,337
Marin Supply (GWh)										
<u>Renewable Resources</u>										
Generation	0	0	0	0	794	794	794	794	794	794
Power Purchase Contracts	145	858	855	856	191	195	198	203	206	212
Total Renewable Resources	145	858	855	856	985	989	992	997	1,001	1,006
<u>Conventional Resources</u>										
Generation	0	0	0	0	0	0	0	0	0	0
Power Purchase Contracts	135	450	449	449	324	325	326	328	329	331
Total Conventional Resources	135	450	449	449	324	325	326	328	329	331
Total Supply	280	1,308	1,304	1,305	1,309	1,314	1,319	1,325	1,330	1,337
Energy Open Position (GWh)	0	0	0	0	0	0	0	0	0	0

Supply Requirements

The starting point for Marin Clean Energy's resource plan is a projection of participating customers and associated electric consumption. Projected electric consumption is evaluated on an hourly basis, and matched with resources best suited to serving the aggregate of hourly demands or the program's "load profile". As a basis for the customer forecast, the Marin Communities requested historic load data for each of their respective jurisdictions. This data was organized and analyzed, becoming the starting point from which an annual load forecast was developed. An annual growth rate of 0.5 percent, consistent with Marin's population growth rate, was applied to this data, resulting in a long-term annual load forecast for the

county and cities. From the annual load forecast, hourly demands were calculated based on historic usage profiles for the county and cities. The electric sales forecast and load profile will be affected by MCE's plan to introduce the program to customers in phases and the degree to which customers choose to remain with PG&E during the customer enrollment and opt-out periods. It is anticipated that MCE's contracted energy supplier will bear risks associated with deviations from the electric sales forecast during the initial operating period (through 2013). It will be the obligation of this energy supplier to appropriately reflect these risks in the full requirements energy price. MCE's phased roll-out plan and assumptions regarding customer participation rates are discussed below.

Customer Participation Rates

Customers will be automatically enrolled in MCE's electricity program unless they opt-out during the customer notification process conducted during the 60-day period prior to enrollment and continuing through the 60-day period following commencement of service. MCE anticipates an overall customer participation rate of 100 percent during Phase 1, when service is being offered to the service accounts that are affiliated with MCE's participating members (municipal accounts). It is assumed that each of these service accounts will participate in MCE's 100 percent Green Tariff. Participation rates are expected to be 90 percent of bundled service customers and 0 percent of direct access customers during Phases 2 through 3 based on experience with similar opt-out style municipal aggregation programs developed in other states; these have ranged from 5 percent in Massachusetts to 10 percent in Ohio. The participation rate is not expected to vary significantly among customer classes, in part due to the fact that MCE will offer two distinct rate tariffs that will address the needs of cost-sensitive customers within the Marin Communities as well as the needs of both residential and business customers that prefer a highly renewable energy product. These participation rates should also be supported by MCE's focused marketing efforts directed towards commercial and industrial customers who may otherwise be more inclined to remain with a known entity like PG&E. The assumed participation rates will be refined as MCE's public outreach efforts continue to develop and experience is gained by other California CCA programs.

Customer Forecast

Once customers enroll in each implementation phase, they will be switched over to service by MCE on their regularly scheduled meter read date over an approximately thirty day period. Approximately 19 service accounts per day will be switched over during the first month of service. For Phase 2, the number of accounts switched over to CCA service will double to about 40 accounts per day. However, during Phase 3, MCE's customer account systems must be capable of processing customer enrollments of over 3,600 accounts per day. The number of accounts served by MCE at the end of each phase is shown in the table below.

**Marin Clean Energy
Enrolled Retail Service Accounts
Phase-In Period (End of Month)**

	Jan-10	May-10	Jan-11
Marin Customers			
Residential	2	2	97,443
Small Commercial	341	339	11,704
Medium Commercial	32	1,062	1,067
Large Commercial	3	156	157
Industrial	-	11	11
Street Lighting & Traffic	186	186	542
Ag & Pump.	1	1	177
Total	565	1,757	111,101
 Customer Additions	 565	 1,192	 109,344

The forecast of service accounts (customers) served by MCE for each of the next ten years is shown in the following table:

**Marin Clean Energy
Retail Service Accounts (End of Year)
2010 to 2019**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Marin Customers										
Residential	2	97,443	97,930	98,420	98,912	99,406	99,903	100,403	100,905	101,409
Small Commercial	341	11,704	11,762	11,821	11,880	11,940	11,999	12,059	12,120	12,180
Medium Commercial	1,062	1,067	1,073	1,078	1,083	1,089	1,094	1,100	1,105	1,111
Large Commercial	156	157	158	159	159	160	161	162	163	164
Industrial	11	11	11	11	11	11	11	11	12	12
Street Lighting & Traffic	186	542	545	548	550	553	556	559	561	564
Ag & Pump.	1	177	178	179	180	181	182	183	183	184
Total	1,759	111,101	111,657	112,215	112,776	113,340	113,907	114,476	115,049	115,624

Sales Forecast

MCE's forecast of kWh sales reflects the roll-out and customer enrollment schedule shown above. The annual electricity needed to serve MCE's retail customers increases from approximately 280 GWh in 2010 to just over 1,300 GWh at full roll-out in 2011. Annual energy requirements are shown below.

**Marin Clean Energy
Energy Requirements
(GWH)
2010 to 2019**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Marin Demand (GWh)										
Retail Demand	267	1,234	1,240	1,246	1,252	1,259	1,265	1,271	1,278	1,284
Distributed Generation	-6	-8	-10	-12	-13	-15	-17	-18	-19	-19
Energy Efficiency	0	-4	-11	-15	-15	-15	-15	-15	-15	-16
Losses and UFE	18	86	85	85	86	86	86	87	87	87
Total Load Requirement	280	1,308	1,304	1,305	1,309	1,314	1,319	1,325	1,330	1,337

Capacity Requirements

The CPUC's resource adequacy standards applicable to MCE require a demonstration one year in advance that MCE has secured physical capacity for 90 percent of its projected peak loads for each of the five months May through September, plus a minimum 15 percent reserve margin. On a month-ahead basis, MCE must demonstrate 100 percent of the peak load plus a minimum 15 percent reserve margin.

A portion of MCE's capacity requirements must be procured locally, from the Greater Bay area as defined by the CAISO and another portion must be procured from outside the Greater Bay Area. MCE would be required to demonstrate its local capacity requirement for each month of the following calendar year. The local capacity requirement is a percentage of the total (PG&E service area) local capacity requirements adopted by the CPUC based on MCE's forecasted peak load. The formula is as follows:

$$\text{MCE Local Capacity Requirement} = \left[\frac{\text{MCE Capacity Requirement}}{\text{Total PG\&E Service Area Capacity Requirement}} \right] * \text{Total Local Capacity Requirement in PG\&E's Service Area}$$

MCE must demonstrate compliance or request a waiver from the CPUC requirement as provided for in cases where local capacity is not available. If necessary, MCE would be able to request relief from the local procurement obligation with a demonstration that it has made every commercially reasonable effort to contract for local capacity resources. A waiver request would have to demonstrate that MCE actively sought products and either received bids with prices in excess of an administratively determined local attribute price (\$40 to \$73 per kW-year) or received no bids.

The waiver applies to Commission-imposed penalties only. If deficient, MCE would be responsible for any applicable backstop procurement costs even if it received a waiver from penalties. The CAISO would procure local capacity as a backstop and would charge a fee based on its costs of procuring the capacity. For 2007, the backstop cost was approximately \$73 per kW-year.

MCE's first resource adequacy filing could take place as early as October 2009, according to the schedule established by the CEC for evaluating statewide resource adequacy based on resource plans filed by all load serving entities in the state. The forward resource adequacy requirements for 2010 through 2012 are shown in the following tables:

Marin Clean Energy
 Summer Peak Loads
 (MW)
 2010 to 2012

Marin Clean Energy
 Forward Capacity and Reserve Requirements
 (MW)
 2010 to 2012

Month	2010	2011	2012	Month	2010	2011	2012
January	3	222	220	January	4	256	253
February	4	237	236	February	4	273	271
March	3	193	191	March	4	222	219
April	3	188	186	April	4	216	213
May	66	174	172	May	76	200	197
June	68	200	198	June	79	230	228
July	64	195	193	July	74	224	222
August	66	221	219	August	75	254	251
September	73	205	203	September	84	236	234
October	69	205	203	October	79	235	233
November	67	227	225	November	77	261	259
December	61	222	220	December	70	255	253

MCE's plan would ensure sufficient reserves are procured to meet its peak load at all times. MCE's annual capacity requirements are shown in the following table:

Marin Clean Energy
 Capacity Requirements
 (MW)
 2010 to 2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Demand (MW)										
Retail Demand	72	228	229	230	231	232	234	235	236	237
Distributed Generation	(4)	(5)	(6)	(8)	(9)	(10)	(12)	(12)	(13)	(13)
Energy Efficiency	-	(1)	(2)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Losses and UFE	5	16	15	15	15	15	15	15	15	15
Total Net Peak Demand	73	237	236	235	234	234	234	235	235	236
Reserve Requirement (%)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Capacity Reserve Requirement	11	36	35	35	35	35	35	35	35	35
Capacity Requirement Including Reserve	84	273	271	270	270	269	269	270	270	272

Local capacity requirements are a function of the PG&E area resource adequacy requirements and Marin Clean Energy's projected peak demand. MCE would need to work with the CPUC's Energy Division and potentially staff at the California Energy Commission to obtain the data necessary to calculate MCE's monthly local capacity requirement. A preliminary estimate of MCE's annual local capacity requirement for the ten year planning period ranges from approximately 32 to 102 MW as shown in the following table:

Marin Clean Energy
 Local Capacity Requirements
 (MW)
 2010 to 2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
PG&E Planning Area System Peak (MW)	22,425	22,717	23,012	23,311	23,614	23,921	24,232	24,547	24,866	25,189
Total Capacity Requirement (115%)	25,789	26,124	26,464	26,808	27,156	27,509	27,867	28,229	28,596	28,968
Authority Peak (MW)	73	237	236	235	234	234	234	235	235	236
Authority Share of Planning Area	0.3%	0.9%	0.9%	0.9%	0.9%	0.9%	0.8%	0.8%	0.8%	0.8%
Local Capacity Requirement - Greater Bay Area	4,896	4,959	5,024	5,089	5,155	5,222	5,290	5,359	5,429	5,499
Local Capacity Requirement - Other PG&E	6,232	6,313	6,395	6,478	6,562	6,648	6,734	6,822	6,910	7,000
Authority Local Capacity Requirement Greater Bay	14	45	45	45	45	44	44	45	45	45
Authority Local Capacity Requirement Other PG&E	18	57	57	57	57	57	57	57	57	57

Renewable Portfolio Standards Energy Requirements

Basic RPS Requirements

As a CCA, Marin Clean Energy would be required by law and ensuing CPUC regulations to procure a minimum percentage of its retail electricity sales from qualified renewable energy resources. Under the California renewables portfolio standard (RPS) program and policies established in the state's Energy Action Plan, MCE must generally increase its percentage utilization of renewable energy by no less than one percent per year and achieve a minimum of 20 percent by 2010. For purposes of determining MCE's renewable energy requirements, the same standards for RPS compliance that are applicable to the distribution utilities are assumed to apply to MCE.

The Commission has so far ruled that CCAs must comply with five fundamental aspects of the RPS program: 1) meeting the 20 percent requirement by 2010; 2) increasing their renewable sales by at least one percent per year; 3) reporting their progress to the Commission; 4) utilizing flexible compliance mechanisms; and 5) being subject to penalties and penalty processes. Additional specifics of how CCAs, unregulated energy service providers and multi-jurisdictional utilities are to comply with the RPS and how their compliance may be different in some respects than the rules that are applicable to the distribution utilities are being addressed in the ongoing CPUC proceeding, R.06-02-012. The rules ultimately adopted for CCAs may provide greater flexibility than assumed in this plan, for instance, by allowing use of short-term contracting or unbundled renewable energy certificates for RPS compliance. Future resource plans should incorporate any changes in these assumptions that result from the Commission's rulemaking process.

RPS Compliance Rules

CPUC Decision No. 04-06-014 clarifies the methodology for calculating the annual renewable energy requirements needed to comply with the RPS. In that decision, the Commission defines two related terms to measure a load serving entity's progress toward meeting its RPS obligations. The "Annual Procurement Target" (APT) is the total amount of renewable energy needed to meet the requirement to increase renewable procurement by at least 1 percent of retail sales per year, subject to Commission rules for flexible compliance. It is the sum of the baseline, representing renewable generation needed to continue to satisfy obligations under the RPS targets of previous utilities years, and the "Incremental Procurement Target" (IPT), which is at least 1 percent of the previous utilities year's total retail electrical sales.

The CPUC's flexible compliance rules allow a load serving entity to defer up to 25 percent of the IPT without explanation, as long as the shortfall is made up within three years. Shortfalls greater than 25 percent of IPT will be permitted upon demonstration of one or more of the following: 1) insufficient response to a request-for-offers; 2) contracts in hand that will make up the deficit in future years; 3) inadequate public goods funds to cover above market renewable contract costs; and 4) seller non-performance. Flexible compliance does not currently extend the 20 percent by 2010 requirement. Noncompliance will result in penalties of 5 cents per kWh, capped at \$25 million per year.

Marin Clean Energy's Renewable Portfolio Standards Requirement

Because Marin Clean Energy will have no baseline of renewable energy procurement (i.e., no existing contracts or resources) and no prior retail electrical sales, its first year APT calculated as described above is zero. In 2011, the expected second year of the program, MCE must meet the full 20 percent renewable standard (based on 2010 retail sales). MCE's annual RPS requirements are shown in the table below.

Marin Clean Energy RPS Requirements (MWH) 2010 to 2019										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Retail Sales	261,264	1,222,384	1,219,080	1,219,581	1,223,812	1,228,073	1,232,365	1,238,339	1,242,859	1,249,170
Baseline	-	-	52,253	244,477	243,816	243,916	244,762	245,615	246,473	247,668
Incremental Procurement Target	-	52,253	192,224	(661)	100	846	852	858	1,195	904
Annual Procurement Target	-	52,253	244,477	243,816	243,916	244,762	245,615	246,473	247,668	248,572
% of Current Year Retail Sales		4%	20%	20%	20%	20%	20%	20%	20%	20%

Marin Clean Energy's Renewable Energy Goals

Marin Clean Energy would target a 56 percent renewable energy percentage during the first two phases of program operations, based on projected participation in the program's 100 percent Green and Light Green Tariffs, and would then further exceed the RPS as it builds towards more than 80 percent by 2014. Beyond 2014, MCE intends to increase its procurement of renewable energy supplies subject to economic and operational constraints. It is the long-term goal of Marin Clean Energy to procure 100 percent of its energy supplies from renewable sources. MCE would therefore significantly exceed the minimum RPS requirements as shown below; provided that the competitive wholesale market provides qualified responses to MCE's resource solicitations.

Marin Clean Energy RPS Requirements and Program Renewable Energy Targets (MWH) 2010 to 2019										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Retail Sales (MWh)	261,264	1,222,384	1,219,080	1,219,581	1,223,812	1,228,073	1,232,365	1,238,339	1,242,859	1,249,170
Annual RPS Target (Minimum MWh)	-	52,253	244,477	243,816	243,916	244,762	245,615	246,473	247,668	248,572
Program Target (% of Retail Sales)	56%	70%	70%	70%	81%	81%	81%	81%	81%	81%
Program Renewable Target (MWh)	145,048	857,657	855,339	855,691	985,245	988,676	992,131	996,940	1,000,579	1,005,660
Surplus In Excess of RPS (MWh)	145,048	805,404	610,862	611,875	741,329	743,914	746,517	750,467	752,911	757,088
Annual Increase (MWh)	145,048	712,609	(2,318)	352	129,555	3,431	3,456	4,809	3,639	5,081

Resources

MCE would seek to maximize use of its own cost-based renewable generation resources in its resource plan, subject to MCE's ability to finance or otherwise obtain an entitlement to such projects. The ability to procure output from or invest capital in generation resources financed with tax-exempt debt is an important factor in MCE's ability to increase use of renewable energy while offering rates that are competitive with PG&E. Power purchases from renewable

and the cleanest non-renewable (natural gas-fired) resources would supply the remaining majority of the resource mix. MCE's electric portfolio would be managed by a third party electric supplier, at least during the initial implementation period. Through a power services agreement, MCE would obtain full requirements electric service for MCE's retail customers, including providing for all electric and ancillary services and the scheduling arrangements necessary to provide delivered electricity to the retail customers' end use meters through 2013. A subsequent power services agreement would provide for integration of MCE's renewable generation or power purchase contracts; or alternatively, MCE may gain the expertise by that time to manage the portfolio with internal staff.

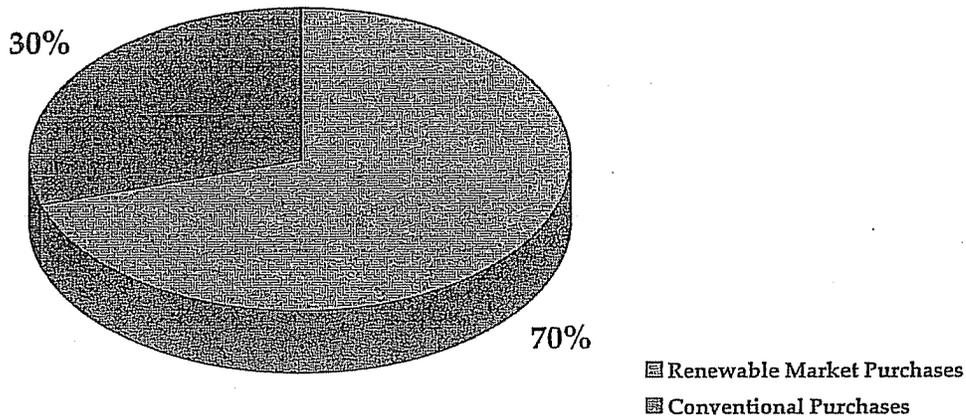
Marin Clean Energy's resource plan anticipates the development of a diverse renewable resource portfolio, which includes contributions from four commercially viable generating sources with aggregated production characteristics that are consistent with the Marin load profile:

- Wind – 30 percent (of renewable supply portfolio);
- Solar – 25 percent; and
- Biomass and/or Geothermal – 45 percent.

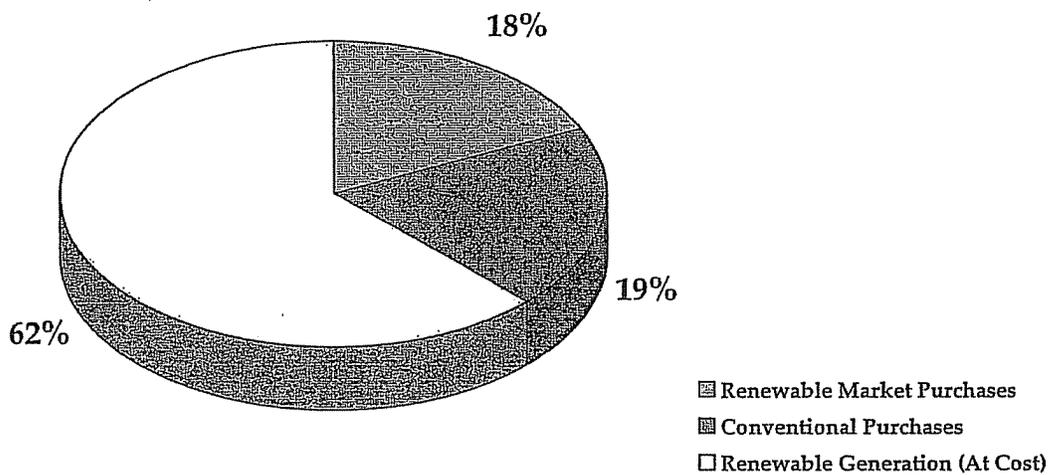
As part of its renewable resource portfolio, MCE plans to develop both a wind and biomass generation resource within the PG&E service area planned to be online by 2014. The plan calls for initial development of 200 MW of these resources to meet approximately 62 percent of MCE's annual electricity requirements. It is likely that additional investment would be made after several years of successful operating experience. Wind and biomass technologies were selected for this plan due to the maturity of the respective technologies and the fact that wind and biomass are generally the lowest cost renewable resources currently available. However, other technologies such as solar and geothermal should also be investigated as the Program moves forward. Approximately 18 percent of the total resource mix is anticipated to come from power purchases from third party renewable energy developers. Non-renewable baseload, peaking and shoulder load requirements would generally be met with power purchase contracts for the balance of this planning horizon.

The planned resource mix for 2011 and 2017 are shown in the figures on the following page. It is important to note that the portions of MCE's supply portfolio from renewable energy sources should be considered "carbon free" for the purpose of comparison to a utility supply portfolio.

Marin Clean Energy 2011 Resource Mix



Marin Clean Energy 2017 Resource Mix



Purchased Power

Power purchased from utilities, power marketers, public agencies, and/or generators will be the exclusive source of supply from 2010 to 2013 and will remain a significant source of power supply after MCE's initial renewable generation begins producing electricity, anticipated to be

2014. During the period from 2009 – 2013, MCE would obtain all of its electricity from a third party electric provider under a full requirements power supply agreement, and the supplier will be responsible for procuring a mix of power purchase contracts, including specified renewable energy targets, to provide a stable and cost-effective resource portfolio for the Program.

Initially, the Program's third party electric supplier will be responsible for managing the overall supply portfolio. Details of the electric supply portfolio and risk management practices that will be employed by the Program's electric supplier will be established as the contract is negotiated with the selected electric supplier. It is anticipated that a mix of short and long term power purchases will be used to meet the hour-by-hour demand requirements of MCE's customers, and that prices would be predominantly fixed for the contract term.

Renewable Resources

To meet its aggressive renewable energy goals, MCE would initially secure power purchase contracts for qualified renewable energy resources at an amount equal to 56 percent of retail demand, which equates to approximately 145,000 MWh in 2010, increasing to nearly 858,000 MWh (70% of total supply) by 2011. To qualify as eligible for California's RPS, a generation facility must use one or more of the following renewable resources or fuels:

- Biomass;
- Biodiesel;
- Fuel cells using renewable fuels;
- Digester gas;
- Geothermal;
- Landfill gas;
- Municipal solid waste;
- Ocean wave, ocean thermal, and tidal current;
- Photovoltaic;
- Small hydroelectric (30 MW or less);
- Solar thermal; and
- Wind.

Renewable technologies that are predominant and generally commercially available are wind, geothermal, biomass, land fill gas, and solar (thermal or photovoltaic). Studies sponsored by the CEC show that over 7,000 MW of eligible renewable resources are economically developable statewide by 2010, and a study sponsored by the CPUC indicated nearly 50,000 MW of renewable resource potential could be utilized by 2020.⁹ The vast majority of the resource potential identified by the CEC is located in Southern California, concentrated in four specific

⁹ *Strategic Value Analysis for Integrating Renewable Energy Technologies in Meeting Target Renewable Penetration; In Support of the 2005 Integrated Energy Policy Report; Davis Power Consultants, June 2005.* Costs are in 2005 dollars. Resources identified as being economically developable by the CEC were those found to have positive impacts on the transmission system, if developed and for which the levelized costs are estimated to be at or below a market price benchmark of 6.05 cents per kWh. The referenced CPUC study is *Achieving A 33 percent Renewable Energy Target; J. Hamrin, R. Dracker, J. Martin, R. Wiser, K. Porter, D. Clement, M. Bolinger; November 2005.*

areas: Tehachapi area and Riverside County wind resources (2,800 MW), utility-scale solar in the Southern California deserts (1,000 MW), and geothermal in the Imperial Valley (1,600 MW). There are an estimated 450 MW of resources in the PG&E territory economically developable by 2010, primarily represented by wind resources in Solano and Alameda Counties (400 MW) and geothermal (45 MW) near the Geysers.

Near Term Renewable Potential

While renewable resource potential within the state is vast, the lack of existing transmission facilities necessary to interconnect the renewable resource areas – which are typically far from population centers – and the lack of sufficient transfer capability on key transmission paths to enable delivery to load centers may be a limiting factor in acquiring low cost renewable energy to meet MCE’s resource planning goals (until the transmission system is expanded). Existing transmission constraints generally limit the quantity of renewable energy that can be delivered to MCE’s customers from resources located outside of the larger host utility (PG&E, SCE, SDG&E) service territory, without causing transmission congestion charges to be incurred. Considering transmission constraints and current transmission expansion plans of the investor owned utilities, there are an estimated 14 million MWh per year of economically developable renewable resources currently available (by 2010) as shown in the following table, with about 2.6 million MWh of this annual production potential located within the PG&E service territory.

Resources Identified for Potential CCA Development by 2010, Considering Existing and Planned Network Transmission System Capacity (MWh)

Resource Type	PG&E Area	SCE Area	SDG&E Area ¹⁰
Geothermal	1,576,800	0	5,085,180
Wind	525,236	4,780,800	394,200
Biomass	525,000	1,094,562	156,366
Total	2,627,036	5,875,362	5,635,746
<i>Source: Community Choice Aggregation Demonstration Project; Renewable Resource Development Roadmap; Navigant Consulting, Inc., June 2006.</i>			

Ideally, MCE would be able to procure renewable energy locally, or at least from within the PG&E service area. Transmission capacity for energy imports from outside the host utility service area (PG&E) is available during only certain times of the year, and electricity transmitted from points outside of the region would be subject to potential charges for use of congested transmission lines. Congestion charges will become a more significant economic factor as the CAISO transitions from the current zonal congestion pricing model to a nodal model as it implements its Market Redesign and Technology Update (MRTU).¹¹ The ideal energy source would be located within the County, near the load center. The next best alternative would be for the resource to be located outside the CCA’s boundaries but within or deliverable to the PG&E service territory. A study prepared for Marin County identified nearly

¹⁰ The geothermal resources are located in Imperial Valley and will be deliverable to San Diego area loads following completion of Phase 1 of SDG&E’s proposed Sunrise Powerlink in 2010. Wind resources in Eastern San Diego County are planned to be connected via tap lines to the Sunrise Powerlink.

¹¹ Under the current zonal model, there are potential congestion costs for transferring electricity between any of the three zones within California (NP15, ZP26 and SP15). The nodal model will expand the number of congestion pricing points, creating thousands of locational pricing nodes.

850 MW of renewable resource potential within the County, capable of producing approximately 1,300 GWh per year.¹² Considering that PG&E is expected to need over 6.5 million MWh per year of additional renewable energy procurement to meet its RPS obligation by 2010, MCE will look first to local renewable resources and then to procurement of renewable energy from outside the area. MCE may also supplement its procurement of physical resources with purchases of renewable energy certificates, which allow for the purchase of the renewable attributes of electricity generated by a renewable resource without regards to physical delivery to loads.¹³

For planning purposes, MCE should anticipate procurement from the following types of large scale renewable resources in the near term, which would require little or no transmission expansion to ensure deliverability:

- Local resources (solar, wind, biogas, biomass);
- Wind resources in Solano County;
- Existing Qualifying Facilities with expiring PG&E contracts;
- Expansion and re-powering of wind resources in Alameda County;
- Geothermal in Lake and Sonoma Counties;
- Local biomass projects; and
- Renewable Energy Certificates.

Medium and Long-Term Renewable Potential

In the medium to long term, the Program will be able to utilize the transmission expansion projects that are underway by PG&E, SCE, and potentially other utilities and transmission owners/developers in the West, designed to expand access to renewable resource areas. PG&E, as well as any other utility, must offer access to its transmission system to generators and other market participants and provide transmission service comparable to the service it provides itself, according to well established open access regulations promulgated by the Federal Energy Regulatory Commission (FERC).¹⁴ The CAISO administers access to PG&E's transmission system on a nondiscriminatory basis in accordance with tariffs on file with the FERC. As of January 2008, over 38,000 MW of renewable resources have applied for transmission interconnections with the CAISO.¹⁵ According to the CAISO, about one half of all projects in the queue ultimately are developed. These projects represent proposed renewable projects that MCE could potentially use to meet its renewable energy requirements, once the necessary transmission upgrades are completed.

PG&E has plans in place to invest up to \$3.0 billion in new transmission infrastructure over the next decade, and has identified four major transmission projects specifically designed to expand access to renewable resources.¹⁶ These four projects are projected to come on-line between 2008

¹² Increasing Renewable Energy Resources in the County of Marin, Jody London Consulting, November 11, 2007.

¹³ The cost of potential congestion charges has been included in the risk analysis presented in Chapter 4.

¹⁴ The open access framework for transmission is set forth in a series of orders by the Federal Energy Regulatory Commission: FERC Orders 888, 889, 889A and 890.

¹⁵ 2008 CAISO Transmission Plan: A Long-Term Assessment of the California ISO's Controlled Grid (2008-2018), California Independent System Operator, January 2008.

¹⁶ PG&E 2006 Electric Grid Expansion Plan, December 29, 2006.

and 2010, pending CAISO approval, at a total estimated cost ranging between \$171 and \$455 million. These four renewable-focused transmission projects are identified in the following table:

PG&E Transmission Expansion Plan Summary

Project Title	Purpose and Benefit	County	Project Scope	CAISO Approval Status	Expected Capacity Increase (MW)	Cost Range (\$)	Targeted In-Service Date
Vaca Dixon – Contra Costa 230kV Reinforcement	Access Resource	Solano	Reconductor 230 kV Lines	Not Yet	Approx. 300 MW when completed w/other projects	20-50M	May 2008
Bogue Junction Reconfiguration	Access Resource	Sutter	Reconfigure 115 kV lines at Bogue Junction	Not Yet	Not Published	1-5M	May 2009
Midway – Gregg 500kV Line	Access Resource	Fresno, Kings & Kern	Increase Transmission Capacity to Access Resources	Not Yet	Approx. 1,250 MW	100-200M	2010
Vaca Dixon – Sobrante – Moraga 230kV Reinforcement	Access Resource	Solano and Contra Costa	Increase Transmission Capacity to Access Resources	Not Yet	Approx. 300 MW when completed w/other projects	50-200M	May 2010

In its Plan, PG&E notes that these projects are at “conceptual studying stages”, and, as a result, definitive conclusions should not be drawn with respect to project details or timing. However, there is no doubt that PG&E will target certain renewable transmission projects for completion to further its achievement of the state’s renewable portfolio standard, which mandates 20 percent renewable energy sales by 2010 and potentially 33 percent by 2020.

In addition to these specific projects/focus areas, PG&E is also involved in studying various other projects, such as the development of electric transmission to accommodate the transfer of 4,000 MW of wind generation from the Tehachapi Region. Based on CPUC Decision 04-06-010, the Tehachapi Collaborative Study Group was formed “to develop a comprehensive transmission development plan for the phased expansion of transmission capabilities in the Tehachapi area.” Membership in this group includes PG&E, SCE, the CEC, the CPUC, the CAISO, wind energy developers and other stakeholders. Based on its studies, PG&E identified three transmission development alternatives that would accommodate importing 2,000 MW of wind generation from the Tehachapi region to northern California (another 2,000 MW would be available for southern import). A preferred alternative has been identified (new Tesla-Gregg 500 kV line and new Gregg-Midway 500 kV line, which was previously noted) and is still in PG&E’s planning/study phases.

Other projects under consideration by PG&E include those considered by the Northwest Transmission Assessment Committee (NTAC), which would bring renewable and other generating resources to California from Canada and the Pacific Northwest, a submarine

transmission interconnection to British Columbia from northern California and the Frontier Line, which would connect California to Wyoming capacity markets (primarily wind and "clean" coal). These projects have not yet been fully developed and are still being studied by PG&E.

As noted above, MCE would have the same access as PG&E to this transmission once the projects are completed. For mid and long term planning purposes, MCE should anticipate procurement from the following types of large scale renewable resources¹⁷:

- Wind imports from the Tehachapi Area;
- Wind imports from the Pacific Northwest;
- Geothermal imports from Nevada;
- Geothermal imports from the Imperial Valley; and
- Solar CSP imports from Southern California (Riverside and San Bernardino Counties).

Although this resource plan identifies likely resource types and locations, it is not possible to predict what projects might be proposed in response to MCE's solicitations for renewable energy or that may stem from discussions with other public agencies. Renewable projects that are located virtually anywhere in the Western Interconnection can be considered as long as the electricity is deliverable to the CAISO control area, as required to meet the Commission's RPS rules and any additional guidelines ultimately adopted by MCE's Board of Directors. The costs of transmission access and the risk of transmission congestion costs would need to be considered in the bid evaluation process if the delivery point is outside of MCE's load zone, as defined by the CAISO.

Initially, the electric supplier selected for the Program will be responsible for meeting the specified renewable energy requirements under a full requirements electricity agreement. In the longer term, MCE would request proposals directly from renewable developers to meet its renewable energy requirements, and responses to the solicitations would determine the specific resource types and locations that will be utilized. Actual procurement of renewable resources can be conducted through a competitive solicitation, either directly by MCE or in conjunction with another public agency. Once formed, MCE can explore opportunities to partner with other public agencies, such as the Sacramento Municipal Utility District (SMUD) or the Northern California Power Agency (NCPA), that are currently developing renewable resources.

It bears mentioning that MCE will be in competition for renewable resources with the three investor owned utilities, which together require nearly 12 million MWh annually to meet their RPS requirements by 2010. Over the longer term, the transmission expansion plans of the utilities will provide additional resource options for MCE. Marin Clean Energy, working with third party electric suppliers, will need to be aggressive in pursuing the renewable resources that are currently available to ensure that PG&E and the other utilities do not lock up the most

¹⁷ In the long term, new technologies such as wave or tidal energy may become economically feasible as well.

economic resources for their own portfolio needs during the early years of the Program.¹⁸ In contrast to PG&E, which is motivated by regulatory compliance with the Renewable Portfolio Standards, MCE would elevate procurement and development of renewable energy as its primary mission, proactively seeking out opportunities to develop local resources and partnering with private developers and other public agencies.

Planned Renewable Generation Resources

The resource plan includes the anticipated development by MCE of wind and biomass resources located within the PG&E service territory. These resources are planned to become operational in 2014. It should be understood that the specific resource types, locations and timing will be the result of a competitive solicitation process and may differ from those presented here. Possible locations for new wind development include wind resource areas in Solano County, the Altamont wind resource area in Alameda County and potentially the Tehachapi area. The latter location is within the SCE service territory, and would become a feasible location to site generation for MCE once PG&E expands its import capabilities from that area as discussed above. Resources located in the Pacific Northwest may also be feasible if MCE can partner with an entity such as SMUD or another California publicly owned utility that has transmission rights from Oregon into California (e.g., the California Oregon Transmission Project) or if PG&E follows through with plans to expand its transmission system northward.

The generation projects anticipated in this resource plan is summarized in the following table:

Marin Clean Energy Wind/Biomass Project Summary

Generation Type	Wind
Location	Greater Bay Area (e.g. Solano County)
Year On Line	2014
Capacity	150 MW
Production	450,702 MWh Per Year
Total Initial Cost	Approx. \$350 Million
Average Production Cost	\$85 to \$105 Per MWh

Generation Type	Biomass
Location	Marin County or the California Central Valley
Year On Line	2014
Capacity	50 MW
Production	343,392 MWh Per Year
Total Initial Cost	Approx. \$125 Million
Average Production Cost	Approx. \$65 to \$80 Per MWh

Energy Efficiency

The CPUC and State energy policy, as expressed in the Energy Action Plan and reaffirmed in D 04-12-048, is to make energy efficiency the highest priority procurement resource. As such, cost-effective energy efficiency should be first in the “loading order” of resources used to meet

¹⁸ It should be noted, however, that none of the respondents to the Cities’ request for information identified availability of renewable resources as one of the challenges to meeting the Program’s stated objective of over 80 percent renewable energy by 2014.

customers' energy service needs.¹⁹ In order to promote the resource procurement policies articulated in the Energy Action Plan and by the CPUC, energy efficiency activities funded by ratepayers should focus on programs that serve as alternatives to more costly supply-side resource options.²⁰

California electric distribution utilities (investor-owned utilities and municipal utilities) are required by law to include a separate line item on customer bills containing a surcharge, termed the Public Goods Charge (PGC), to fund Public Purpose Programs or Public Good Programs. PGC funded programs include energy efficiency, renewable energy, low-income, and research and development programs. The PGC surcharge is non-bypassable, subject to payment regardless of whether the serving distribution utility provides the energy commodity. Therefore, customers purchasing energy from a private Energy Service Provider (ESP) or a CCA must pay the PGC and may participate in PGC funded programs. Additionally, AB 117 permits CCAs to apply to administer cost-effective energy efficiency programs. All electric utilities in the state include energy efficiency programs in their resource portfolios and annual budgets for California's distribution utilities are approximately \$700 million. Energy efficiency programs provide a least cost resource, are environmentally superior to supply side resources, reduce customer bills and enhance customer service.

This section addresses the treatment of energy efficiency as a component of MCE's integrated resource plan. As described below there are opportunities for significant cost effective energy efficiency programs within the region, and MCE would seek to maximize end-use customer energy efficiency by facilitating customer participation in existing utility programs as well as by forming new programs that displace MCE's need for procuring electric supply.

This energy efficiency potential forecast serves as a means to estimate the scope and types of energy efficiency programs the Program might include within its resource portfolio within the following customer segments:

- 1) Residential – Low-Income and Multi-Family;
- 2) Residential;
- 3) Commercial/Small Commercial; and
- 4) Large Commercial/Industrial.

Preliminary program planning has been prepared based on the conduct of an energy efficiency forecast that employs key assumptions and methodologies adopted by California's investor owned utilities, tailored to the County's service territory weather, demographics, and commercial and industrial customer base. The forecast identifies the size and characteristics of customer market segments, energy efficiency technology options, and projects the costs and benefits associated with forecast program achievable energy efficiency potential.

¹⁹ CPUC Rulemaking R.01-08-028, ATTACHMENT 3 ENERGY EFFICIENCY POLICY MANUAL FOR POST-2005 PROGRAMS, Page 2, Rule II.1.

²⁰ Ibid., Page 3, Rule II.3.

Baseline Energy Efficiency Potential Estimates

Conservative estimates indicate cost effective (“economic”) energy efficiency potential exists in the Program’s territory to save 181,252 MWh annually. Discounting the economic potential for customer awareness and willingness to adopt based on industry standard assumptions yields achievable energy efficiency potential of 15,100 MWh annually achievable through implementing energy efficiency programs funded at approximately \$2.8 million. Table E-1 summarizes these findings below:

Table E-1 Forecast Annualized Energy Efficiency Potential and Program Budgets

	Sector Use kWh	Technical Potential kWh	Economic Potential kWh	Achievable Program Potential kWh		Achievable Program Potential kW	Program Costs
Residential	732,840,248	217,934,292	107,356,272	7,459,777	1.0%	2,774	\$1,889,983
Commercial	576,235,343	78,085,059	59,356,212	7,380,674	1.3%	1,334	\$874,346
Industrial	107,454,070	15,924,110	14,539,192	255,323	0.2%	39	\$37,825
Composite	1,416,529,661	311,943,461	181,251,677	15,095,774	1.1%	4,147	\$2,802,154

The National Action Plan for Energy Efficiency states among its key findings “consistently funded, well-designed efficiency programs are cutting annual savings for a given program year of 0.15 to 1 percent of energy sales.”²¹ The American Council for an Energy-Efficient Economy (ACEEE) reports for states already operating substantial energy efficiency programs energy efficiency goals of one percent, as a percentage of energy sales, is a reasonable level to target.²² Forecast achievable energy efficiency equal to 1.1 percent of the CCA’s forecast energy sales as indicated in Table E-1 above appears to be a reasonable and conservative baseline for the demand-side portion of CCA’s resource plan. These savings would be in addition to the savings achieved by PG&E administered programs.

CCA Program Energy Efficiency Goals

The Program’s energy efficiency goals will reflect a strong commitment to increasing energy efficiency within the County and expanding beyond the savings achieved by PG&E’s programs. A realistic goal would be to increase annual savings through energy efficiency programs to two percent (combined MCE and PG&E programs) of annualized electric sales, as has been adopted by the State of New York. Achieving this goal would mean at least a doubling of energy savings relative to the status quo situation without the CCA program. MCE programs would focus on closing the gap between the vast economic potential of energy efficiency within the County and what is actually achieved.

The following table summarizes the estimated energy efficiency potential for each type of energy efficiency initiative:²³

²¹ National Action Plan for Energy Efficiency, July 2006, Section 6: Energy Efficiency Program Best Practices (pages 5-6)

²² Energy Efficiency Resource Standards: Experience and Recommendations, Steve Nadel, March 2006, ACEEE Report E063 (pages 28 - 30).

²³ California Energy Efficiency Potential Study Volume 1, California Measurement Advisory Council (CALMAC) Study ID: PGE0211.01, May 24, 2006, Figure 12-2: Distribution of Electric Energy Market Potential, Existing Incentive Levels through 2016.

Energy Efficiency Market Potential

Existing Residential	53.0%
Existing Commercial	18.0%
Existing Industrial	14.0%
Residential New Construction	1.0%
Commercial New Construction	6.0%
Industrial New Construction	1.0%
Emerging Technologies	7.0%

The retrofit of existing buildings represents 85 percent of the total forecast energy efficiency market potential. Studies show that the residential customer sector presents the largest untapped efficiency gains.

A near-term objective of MCE is to hire Program staff that would develop specific energy efficiency programs that would seek to obtain these energy savings. MCE may also seek requisite program funding from the CPUC to administer the energy efficiency programs. Additional details of MCE's energy efficiency plan would be developed once the CCA Program is staffed and has begun operations.

Demand Response

Demand response programs provide incentives to customers to reduce demand upon request by the load serving entity (i.e., MCE), reducing the amount of generation capacity that must be maintained as infrequently used reserves. Demand response programs can be cost effective alternatives to capacity otherwise needed to comply with the resource adequacy requirements. The programs also provide rate benefits to customers who have the flexibility to reduce or shift consumption for relatively short periods of time when generation capacity is most scarce. Like energy efficiency, demand response can be a win/win proposition, providing economic benefits to the electric supplier and customer service benefits to the customer.

In its ruling on local resource adequacy, the CPUC found that dispatchable demand response resources as well as distributed generation resources should be allowed to count for local capacity requirements. The CPUC found that it may not be possible to count dispatchable demand response resources until 2008. This plan assumes that MCE's demand response programs would partially offset its local capacity requirements beginning in 2011.

PG&E offers several demand response programs to its customers, and MCE intends to recruit those customers that have shown a willingness to participate in utility programs into MCE's demand response programs.²⁴ The goal for this resource plan is to meet 5 percent of the Program's total capacity requirements through dispatchable demand response programs that qualify to meet local resource adequacy requirements. This goal translates into approximately 14 MW of peak demand enrolled in MCE's demand response programs. Achievement of this

²⁴ These programs include the Base Interruptible Program (E-BIP), the Demand Bidding Program (E-DBP), Critical Peak Pricing (E-CPP), Optional Binding Mandatory Curtailment Plan (E-OBMC), the Scheduled Load Reduction Program (E-SLRP), and the Capacity Bidding Program (E-CBP).

goal would displace approximately 30 percent of MCE's local capacity requirement within the Greater Bay Area.

Marin Clean Energy
Demand Response Goals
(MW)
2010 to 2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Capacity Requirement (MW)	84	273	271	270	270	269	269	270	270	272
Demand Response Target	-	14	14	13	13	13	13	14	14	14
Percentage of Local Capacity Requirement	0%	30%	30%	30%	30%	30%	30%	30%	30%	30%

Marin Clean Energy would adopt a demand response program that enables it to request customer demand reductions during times when capacity is in short supply or spot market energy costs are exceptionally high. The level of customer payments should be pegged to the cost of local capacity that can be avoided as a result of the customer's willingness to curtail usage upon request. This value can range from \$50 to \$125 per kW-Year. For planning purposes, the customer incentive is assumed to be \$75 per kW-year, which is near the backstop price for local capacity resources and above the incentive levels currently offered by PG&E.²⁵

Appropriate limits on customer curtailments, both in terms of the length of individual curtailments and the total number of curtailment hours that can be called should be included in MCE's demand response program design. It will also be important to establish a reasonable measurement protocol for customer performance of its curtailment obligations. Performance measurement should include establishing a customer specific baseline of usage prior to the curtailment request from which demand reductions can be measured. MCE would likely utilize experienced third party contractors to design, implement and administer its demand response programs.

Distributed Generation

Consistent with MCE's environmental policies and the state's Energy Action Plan, clean distributed generation is a significant component of the integrated resource plan. MCE would work with state agencies and PG&E to promote deployment of photovoltaic (PV) systems within MCE's jurisdiction, with the goal of maximizing use of the available incentives that are funded through current utility distribution rates and public goods surcharges. PV systems are relatively expensive sources of electricity, even after considering the available buy-downs, tax incentives and benefits of net energy metering. Average production costs are in the 30 to 40 cents per kWh range as shown below. For reference, the highest priced "Tier 5" rate charged by PG&E is currently 37 cents per kWh.

²⁵ For example, the annual customer incentive in PG&E's Capacity Bidding Program is fixed at \$43.35 per kW-year in 2007 - 2008.

Residential Photovoltaic Costs

Size (KW)	1	2
Capacity Factor	17%	17%
Production (KWh/Year)	1,489	2,978
Installed Cost	\$ 10,000	\$ 20,000
CEC Incentive	\$ (2,600)	\$ (5,200)
Federal Tax Credit	\$ (2,000)	\$ (2,000)
Net Cost	\$ 5,400	\$ 12,800
Loan Term	30	30
Rate	8.5%	8.5%
Monthly Payment	\$41.52	\$98.42
Average Cost (\$/KWh)	\$ 0.33	\$ 0.40

Although distributed PV is not cost competitive with other sources of renewable supply available to MCE (e.g., large scale wind, biomass, and geothermal), there are significant associated environmental benefits and strong customer interest in distributed PV systems. The economics of PV should improve over time as utility rates continue to increase and the costs of the systems decline with technological improvements and added manufacturing capacity. MCE can promote distributed PV without providing direct financial assistance by being a source of unbiased consumer information and by facilitating customer purchases of PV systems through established networks of pre-qualified vendors. It may also provide direct financial incentives from revenues funded by customer rates to further support use of solar power within the Marin Communities. Finally, MCE could provide direct incentives for PV by offering a net metering rate to customers who install PV systems so that customers are able to sell excess energy to MCE. A proposed net metering rate is discussed in Chapter 5.

MCE's CCA customers would contribute funds to the California Solar Initiative (CSI) through the public goods charge collected by PG&E, and would be eligible for the incentives provided under that program for installation of PV systems. The California Solar Initiative provides \$2.2 billion of funding to target installation of 1,940 MW of solar systems within the investor owned utility service areas by 2017. All electric customers of PG&E, SCE, and SDG&E are eligible to apply for incentives. Approximately 44 percent of program funding is allocated to the PG&E service territory. Assuming solar deployment would be proportionate to funding, the program is intended to yield approximately 775 MW of solar within the PG&E service area. A minimum of 13 MW should be deployed within the jurisdictional boundaries of MCE.

California Solar Initiative Deployment

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
IOU Territory Target (MW)	176	353	529	705	882	1,058	1,235	1,411	1,587	1,764	1,940	1,940
Total Funding (\$Millions)	320	320	320	240	240	240	160	160	160	5	0	0
PG&E Funding (\$Millions)	140	140	140	105	105	105	70	70	70	2	0	0
PG&E Incentives Share	44%	44%	44%	44%	44%	44%	44%	44%	44%	40%	40%	40%
PG&E Area Deployment (MW)	77	154	231	309	386	463	540	617	694	705	776	776
Marin Share of PG&E Load	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Marin Solar Deployment (MW)	1	3	4	5	6	8	9	10	12	12	13	13

Marin Clean Energy could work to ensure that customers within its jurisdiction take full advantage of the solar incentives, with the goal of exceeding the deployment targets shown above. Additional solar programs developed by MCE could also increase use of solar in the Marin Communities.

Impact of Resource Plan on Greenhouse Gas Emissions

Reductions in greenhouse gas emissions as a result of the Program' resource plan are estimated to range from 302,330 to 534,369 tons per year by 2019, an amount approximating as much as 17 percent of total GHG emissions (from all sectors, including transportation) within the Marin Communities. The basis for the estimate is an increase to more than 80 percent (beginning in 2014) in the contribution of renewable resources to the resource mix used to serve electric customers in the Marin Communities. The baseline for comparison is the resource mix used by PG&E versus the resource mix that would be utilized by the CCA Program. This comparison is likely conservative in that it assumes PG&E would meet the 20 percent RPS target even though PG&E has remained at between 12 percent and 14 percent in the six years since the RPS legislation was enacted. The actual impact would be greater if PG&E misses the RPS target and less if PG&E exceeds the target, either voluntarily or by future mandate.

The precise impact on greenhouse gas emissions will depend upon the resources that would be displaced by the CCA's renewable resources. New resources will generally displace the least efficient, highest cost resources in the system as resources are dispatched on the basis of variable operating costs. The baseload nuclear, coal and hydro resources currently in the system resource mix will likely not be displaced because of their low operating costs. The low end of the estimate assumes that new renewables compete with new, efficient natural gas fired resources, while the higher estimate assumes displacement of the less efficient existing fleet of gas-fired resources. The CO2 conversion factors for avoided air emissions used in these estimates were obtained from figures reported by the California Energy Commission (400 tons per GWh vs. new gas-fired resources, and 707 tons per GWh vs. existing resources).²⁶

Marin Clean Energy
Greenhouse Gas Impact
2010 to 2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Marin Clean Energy Renewables (MWh)	145,048	857,657	855,339	855,691	985,245	988,676	992,131	996,940	1,000,579	1,005,660
Renewables Per RPS (MWh)	44,415	244,477	243,816	243,916	244,762	245,615	246,473	247,668	248,572	249,834
Program Renewable Impact (MWh)	100,633	613,180	611,523	611,774	740,483	743,061	745,658	749,273	752,007	755,826
CO2 Reduction - Low (tonnes per year)	40,253	245,272	244,609	244,710	296,193	297,225	298,263	299,709	300,803	302,330
CO2 Reduction - High (tonnes per year)	71,148	433,518	432,347	432,524	523,521	525,344	527,180	529,736	531,669	534,369

The estimated impacts do not count renewable resources that are simply transferred from the PG&E portfolio to the CCA portfolio, unless the transferred resources are replaced with new renewable resources. For example, if PG&E is unable to meet the 20 percent RPS standard because MCE contracted with existing Qualifying Facilities formerly under contract to PG&E, there would be no net increase in renewable energy production. However, if PG&E contracted with new renewable resources to replace the renewable energy supply "lost" to MCE as it surpassed the RPS, there would be a net increase in renewable energy and the greenhouse gas impact would appropriately be characterized as a benefit of the Program.

²⁶ California Renewable Technology Market and Benefits Assessment, November 2001.

Considering the challenges faced by PG&E in achieving the 20 percent RPS minimum by 2010 described in its renewable resource plans filed with the CPUC, it is unlikely that PG&E would voluntarily seek to exceed this level in the foreseeable future. However, some state policy makers, including the Governor, are advocating a 33 percent renewable portfolio standard by 2020, and a CPUC study that found such a goal could be achieved. The greenhouse gas reduction mandate of Assembly Bill 32 may also add momentum to a 33 percent renewable portfolio standard, although the compliance rules will not be known for several years. Under the assumption that the statewide standard is increased to 33 percent and PG&E complies, the greenhouse gas benefits of the CCA program would be reduced to a range of 237,374 to 419,558 per year.