

CITY AND COUNTY OF SAN FRANCISCO

COMMUNITY CHOICE AGGREGATION PROGRAM DESCRIPTION

AND

REVENUE BOND ACTION PLAN

AND

DRAFT IMPLEMENTATION PLAN



**Filed for Adoption by Ordinance
June 6, 2007**

Amendment of the Whole of Draft CCA Implementation Plan Accepted by the San Francisco Local Agency Formation Commission (LAFCO) and Transmitted to the Board of Supervisors "With Recommendation," San Francisco, May 13, 2005 (See LAFCO Resolution 050916)

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1. EXECUTIVE SUMMARY

Pursuant to California State Assembly Bill 117, the City and County of San Francisco (CCSF or City) has elected to become a Community Choice Aggregator (CCA) to provide electric power and a broad range of related benefits to the citizens and businesses located within its jurisdiction. CCSF adopts this Community Choice Aggregation Implementation Plan (IP) in order to aggregate the electric power loads of its citizens and businesses in accordance with state and municipal law, including the City's voter-approved H Bond Program (Charter Section 9.107.8, 2001)¹ and Community Choice Aggregation Ordinance 86-04 (2004, Ammiano).²

San Francisco's Community Choice (CCA) and H Bond Program is an ambitious effort to provide the citizens and businesses of San Francisco with a number of significant improvements in their electric power service; not least of which are possibilities for reduced energy costs, development of significantly higher renewable energy sources, reduced exposure to future fuel cost volatility, and improved environmental quality.

This Plan requires the following elements to solicit competitive electricity suppliers, such as Electric Service Providers (ESPs), registered by the California Public Utilities Commission, to become the City of San Francisco's CCA provider:

- CCA Request for Proposals (RFP) will set as a bidding requirement that each qualifying energy supplier must include a rollout ("360 MW rollout") of 31 MW of solar photovoltaic cells and 72 MW of distributed generation, such as fuel cells, throughout the City and County; a 150 MW wind turbine farm; and 107 MW of efficiency and conservation measures throughout the City— as required components of its proposed portfolios and accompanying rate schedules;
- H Bonds will be issued by the City and County to finance the 360 Megawatt rollout in accordance with the Federal Tax Code and charter authority given to the Board of Supervisors by voters in approving Proposition H in 2001;
- The CCA supplier must bid electric generation rates that will "meet or beat" current PG&E generation rates for each rate class; these electric generation rates charged to CCA customers are intended to account not only for the costs of the CCA supplier's power contracts, but also the administrative costs and profit of the supplier, the repayment of Revenue Bond or other funding of the 360 MW roll-out, and all other City CCA related costs e.g. staffing and expense costs. Thereafter the CCA supplier should commit to a structured long-term rate intended to meet or beat PG&E's electric rates, with a performance adjustment rewarding/penalizing the new provider for compliance or non-compliance with its promised 360 MW rollout schedule, with the reward and penalty to be determined in a CCA Request for Proposals, as outlined in this IP;

¹ See below, in Appendix G.

² See below, in Attachment IV.

- The Board of Supervisors and Mayor will establish rates by awarding a contract by ordinance to the chosen new CCA supplier containing fixed or structured rates. The existing SFPUC Rate Fairness Board will hear any customer complaints and provide reports and make recommendations to the Board of Supervisors, which could adjust these rates by ordinance only in an emergency situation;
- The CCA supplier will be a single contractor, providing all required services at its own risk, and may hire subcontractors to perform components of its portfolio;
- The CCA supplier Contract/H Bond repayment term is not set a priori by the plan—prospective suppliers shall propose contract durations in response to the Request for Information— but is likely limited to 15 or 20 years, such that each SF CCA bidders must calculate paybacks on H Bonds within its proposed multi-year rate structure.
- The San Francisco CCA Program is committed to universal access; therefore all the electric customers within the City of San Francisco will have an opportunity to become a CCA customer except existing municipal customers or customers locked into contracts with Direct Access suppliers.
- The San Francisco CCA is committed to reliably serving its generation customers. This will occur in two ways. First the emphasis on in-city generation as a major element of this plan may provide opportunities to decrease the impacts of black-outs at the individual customer level, and potentially the neighborhood level. Second the CCA supplier will be required under CPUC regulation to meet Resource Adequacy Requirements (RAR). However the San Francisco CCA as the legal power supply entity cannot directly react or respond to the vast majority of interruptions of electric power that occur due to distribution or transmission level problems which under state law and regulation shall remain the responsibility of PG&E;
- The San Francisco CCA is committed to providing equitable treatment of all classes of CCA customers. There will be no discrimination among customer classes in setting CCA rates. However the CCA and its supplier will seek opportunities in siting renewable generation facilities at customer sites and offering particular customers customized CCA rates for those facilities— where these opportunities are of benefit to the entire CCA program and therefore all CCA customers;
- The San Francisco CCA is committed to meeting or in some cases exceeding any State of California requirements established by the CPUC for Load Serving Entities (LSE's) for Renewable Portfolio Standards (RPS), RAR, and Greenhouse Gas Emissions. At a minimum, this Implementation Plan establishes a 51% RPS, including solar photovoltaics, distributed renewable generation, and energy efficiency measures, by 2017;
- While the CCA program will be managed by a department of the SFPUC, AB117 requires the project to be governed by the Board of Supervisors. Therefore, this Implementation Plan authorizes the Local Agency Formation Commission (LAFCO) to act as its agent in exercising the Board's inherent authority to oversee CCA as the

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programmatic policy of the City and County of San Francisco and hereby revocably delegates said authority.

- LAFCO will approve the budget for the implementation of the CCA Program for recommendation to the Board of Supervisors Budget and Finance Committee. As AB117 requires the CCA program to be governed by the Board of Supervisors and Mayor through its chosen agencies, this will provide the City's top elected officials with direct oversight of the CCA team. The San Francisco CCA shall be represented at the CPUC, CEC, or other state and Federal agencies by the City Attorney's office, assisted by LAFCO and the SFPUC.

CCA Program History

A successful implementation of the 360 Megawatt rollout will put San Francisco on the map as an international leader in green power development. A successful RFP and H Bond issuance will result in a large-scale public works project in the same league of significance as any major bridge, thoroughfare, civic facility or public transportation system. This truly is a 21st century infrastructure project designed to answer the Climate Crisis—and the Peak Oil and Gas crises.

San Francisco has made considerable efforts to prepare for the CCA Program. The California Community Choice law itself was first requested by the San Francisco Board of Supervisors in 1999, and sponsored by Senator Carole Migden (AB117, 2002) when she was a member of the Assembly. In 2001, San Francisco voters approved the use of revenue bonds (H Bonds, Charter Section 9.107.8, Ammiano) to finance the construction of renewable energy equipment and conservation facilities, by approving Proposition H.

In order to assess the CCA Program, the San Francisco Local Agency Formation Commission (LAFCO) commissioned the R.W. Beck *AB 117 Assessment Report on Community Choice Aggregation*, dated August 6, 2003. In April 2005 the San Francisco Public Utilities Commission (SFPUC) and San Francisco Environment (SFE) submitted to the Board of Supervisors a Draft Implementation Plan. In May 2005 Local Power, a nonprofit organization with expertise in Community Choice and H Bonds, submitted to the LAFCO its own *Draft CCA Implementation Plan* for the City and County. LAFCO recommended Local Power's Draft CCA Implementation Plan to the Board of Supervisors by resolution on May 13, 2005,³ and in late summer passed a second resolution with additional policy recommendations and the incorporation of a number of elements of the SFPUC/SFE's Draft CCA Implementation Plan.⁴

Most recently LAFCO commissioned the law firm of Nixon Peabody to prepare an analysis of the jurisdictional basis within CCSF for the implementation of the CCA Program, as well as analysis of the use of H Bonds in conjunction with CCA contracts, in a report dated November 10, 2005. The report,⁵ which LAFCO has transmitted to the Board of Supervisors by resolution,

³ See Attachment V.

⁴ See Attachment VI.

⁵ Attachment VII.

1) concluded that under AB 117 only the Mayor and the Board of Supervisors can elect CCA for the City, and that only the Mayor and Board of Supervisors can condition the method to be used for CCA implementation, and 2) recommended a single-purpose entity to administer the CCA program and 3) analyzed the use of revenue bonds issued pursuant to Proposition H to fund the 360 MW rollout and related elements of the CCA program.⁶

In addition to these evaluations, San Francisco has conducted an extensive internal policy review of the CCA Program, and has advanced a number of political measures to enable the implementation of the CCA Program. With the California CCA Law and H Bond authorities approved, the Board of Supervisors and Mayor unanimously adopted the CCA “Energy Independence” Ordinance (Ordinance 86-04) in May 2004. The Board of Supervisors and Mayor also created the CCA Task Force by Resolution in December 2004, which adopted two resolutions on policy recommendations to the Mayor and Board of Supervisors that are reflected in this Implementation Plan.⁷ During the Summer of 2005, 70 hours of LAFCO hearings, preparation of a Budget Analyst Report to the Budget and Finance Committee, extensive Mayor’s Office meetings, resolved a number of major open CCA Program issues, as reported to the Board of Supervisors Budget and Finance Committee by SFPUC and Paul Fenn of Local Power on December 15, 2005; and approval of a \$5M CCA Start-Up Budget in the Summer of 2006.

The genesis of this Implementation Plan is Ordinance 86-04, (Ammiano, May 11, 2004), which ordered the San Francisco Public Utilities Commission and the SF Department of the Environment to develop a draft CCA Implementation Plan for consideration and adoption by the Board of Supervisors. This Implementation Plan is the product of work done by Local Power, the SFPUC,⁸ & SFE and other CCSF staff in conjunction with Local Power.⁹

Ordinance 86-04 also set as an RFP bid requirement that the City’s CCA supplier must include a portfolio of power resources that exceeds, under contract, implementation of the goals for energy efficiency, renewable energy, peak shaving and load management provided for in the City’s adopted Electricity Resource Plan. This Implementation Plan provides that the City and County of San Francisco shall require its supplier to implement the 360 MW rollout, and to achieve a 51% Renewable Portfolio Standard by 2017, in the form of bidding requirements in CCSF’s subsequent CCA Request for Proposals (RFP) process.

⁶ See Attachment VII.

⁷ See Attachments VIII and IX. The CCA Task Force is comprised of a number of experts in CCA and energy policy; Community Choice expertise (Paul Fenn, Chair), Revenue Bond expertise (Lino del Signore), Power Procurement expertise from the SFPUC (Barbara Hale), Energy Efficiency expertise from the San Francisco Department of the Environment (Cal Broomhead), and representatives of the Business community (Gino Lazzara, Vice Chair), Labor (former Chair Ron Dicks) and the Bay View Hunters Point community (Maurice Campbell, who is also an energy expert). The Task Force has held nine public meetings to consider and prepare for the CCA Program.

⁸ Barbara Hale, Sean Casey, Michael Hyams and Laura Spanjian participated in the preparation of this document for SFPUC.

⁹ Local Power Research Director Robert Freehling and, a number of Local Power pro-bono advisors contributed to the preparation of this document, as well as former Sierra Club organizer and LAFCO member Cathleen Sullivan, Greenpeace USA organizer Samantha Rodgers, OurCity director Eric Brooks, and Sierra Club representatives Bruce Wolfe, Mike Daley, and Michael Bornstein.

The renewable power generation installed through the San Francisco CCA Program will result in the implementation of one of the highest percentage renewable power mixes for any retail seller of electricity nationwide. It will also result in the construction of the world's largest municipal green power public works project—to provide much of the renewable power in the CCA portfolio. For these reasons, the implementation of San Francisco's CCA Program will become a significant and historic development in the implementation of renewable energy technologies.

The City's mission is for San Francisco residents and businesses to enjoy the option of a cleaner, local, and economically more secure power system— without having to pay higher energy prices first— and with the intention of long-term reduction of San Francisco ratepayers' power prices.

This CCA Implementation Plan includes components other than CCA alone. Significantly, the Ordinance ordering the preparation of this Plan, passed by the City in 2004, calls for the City to issue revenue bonds ("H Bonds") based on the Proposition H revenue bond authority approved by voters in 2001, now Charter Section 9.107.8, which empowers the Board of Supervisors to authorize the issuance of bonds by ordinance. This Implementation Plan calls for San Francisco's revenue bonds to be issued to finance the City's chosen CCA supplier's 360 MW rollout during the early years of its contract with the City, such that annual power sales over the remaining years can fully repay the H Bonds, within the supplier's rate schedule over the remainder of its CCA contract period.

As state law requires the submission of an Implementation Plan containing more limited information to the California Public Utilities Commission (CPUC), this Implementation Plan includes, as an appendix (Appendix A), a shorter draft version of the Plan that will be revised and presented to the CPUC as part of the registration process required of CCAs when the RFP preparation process is complete and details concerning PG&E tariffs have been fully clarified in coming months.

2. INTRODUCTION

2.1 What is CCA?

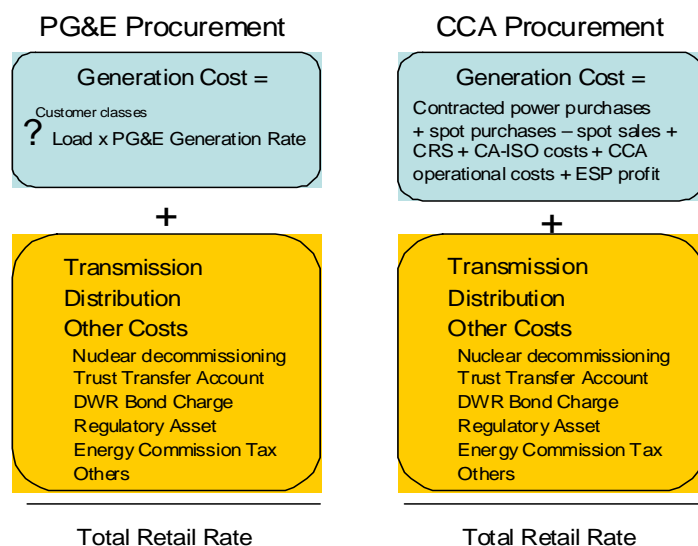
The California legislature responded to the Electric Crisis of 2001-2002 - with its soaring prices, rolling black-outs, and public concerns about energy market manipulation - by passing a number of new electric industry initiatives. Amongst these legislative initiatives was Community Choice Aggregation (Assembly Bill 117¹⁰) sponsored by then Assembly member Carole Migden and passed in September of 2002. This bill authorized communities to aggregate the electric purchasing power of its citizens and businesses so as to: “*reduce transaction costs, provide consumer protections, and leverage the negotiation of contracts*”.

A CCA will usually serve its citizens with retail electricity supply contracted from a wholesale supplier. The CCSF CCA will ensure delivery of that electricity combined with electricity generated from renewable plants both in and out of the city, via PG&E’s transmission and distribution lines, and bill its customers through PG&E’s billing system. Therefore CCA is different from municipalization because PG&E retains ownership of, and maintains responsibility for, transmission, distribution and some customer service functions for CCA customers. PG&E will continue to read CCA customer meters and bill them for their use of PG&E’s transmission and distribution system and well as non-bypassable charges such as those related to the energy crisis, PG&E’s bankruptcy, some public goods program charges and nuclear power plant decommissioning.

The division of responsibilities between the CCSF CCA and PG&E is shown below.

Figure 1: CCA v. PG&E Comparison

¹⁰ Attachment I, the CPUC’s Phase I CCA Decision, includes the text of AB117.



2.2 Why CCA?

Community Choice Aggregation (CCA) offers cities and counties in California an option to purchase electric power on behalf of their citizens. Purchasing power from independent suppliers rather than the traditional utility like PG&E is increasingly common across the U.S. Competitive retail electric suppliers are serving customers using more energy than is represented by the sum of the wholesale energy markets in California, Texas, New York or New England, and Community Choice Aggregations are operating presently in Ohio¹¹ and Massachusetts^{12, 13}. In California today, universities, schools, and businesses and aggregate their electricity purchases from Electric Service Providers (ESP) through Direct Access. The City's implementation of a CCA program is part of the trend of seeking alternatives to utility provision of electric supply.

Potential CCA customers in CCSF represent energy purchases larger than the single largest electricity customer in California. A CCSF CCA potentially represents about 5% of PG&E's energy sales and 7% of its customers. Given reasonable RFP requirements, it is highly likely that San Francisco as a single customer will be an attractive value proposition to wholesale electric suppliers. For example CCA revenues paid in rates by CCA customers could be as much as \$290 million annually. The City's ability to issue H Bonds to augment CCA by self-financing renewable energy and conservation facilities is "synergistic" according to a report by Nixon Peabody in 2005, referenced above. Due to the electric market context and rules in California, the City's CCA is likely to engage in multi-year commitments to a supplier and become an

¹¹ The Northeast Ohio Public Energy Council ([NOPEC](#)) is currently the largest example of municipal aggregation in the United States. NOPEC has recently announced a further three-year agreement with a wholesale supplier.

¹² The [Cape Light Compact](#) has since 2002 provided electricity and energy efficiency services to participating residents and businesses in the Cape Cod and Martha's Vineyard area.

¹³ A comparison of the San Francisco CCA and the Ohio and Massachusetts CCAs is found in Appendix 11.6

owner of new renewable power plants. CCSF could be a market leader in CCA, one of the early CCA formations,¹⁴ operating in a still evolving energy market.

In recognition of the opportunity CCA presents for local control of electricity supply, increased energy efficiency, renewable energy development, consumer protection, and a measure of electric rate stability, Mayor Newsom signed City and County of San Francisco (CCSF) Ordinance 0086-04 on May 27, 2004 establishing the direction for a CCA program in San Francisco and requiring the SFPUC and SFE to provide a Draft Implementation Plan for CCA. This CCA Ordinance called for a City CCA to help ensure the “*provision of clean, reasonably priced, and reliable electricity*” and ordered this Implementation Plan and a subsequent Request for Proposals to require the new supplier’s rates to include the cost of designing, building, operating and maintaining at least 31 MW of solar photovoltaics, 72 MW of distributed generation and 107 MW of conservation and efficiency facilities within the City and County, as well as a 150 MW wind farm to serve the community’s portfolio – using the City’s H Bond Authority to provide low-interest financing.

2.3 Overview of the Implementation Plan

On May 11, 2004, the San Francisco Board of Supervisors unanimously adopted an “Ordinance establishing a Community Choice Aggregation Program in accordance with California Public Utilities Code Sections 218.3, 331.1, 366, 366.2, 381.1, 394, and 394.25, allowing San Francisco to aggregate the electrical load of electricity consumers within San Francisco and to accelerate the introduction of renewable energy, conservation and energy efficiency into San Francisco’s portfolio of energy resources.” Mayor Gavin Newsom signed the ordinance on May 27, 2004.¹⁵

In accordance with AB117, the San Francisco Board of Supervisors considered this Community Choice Aggregation Implementation Plan and appendices in a duly noticed public hearing and has adopted it by ordinance. This Implementation Plan, as adopted by ordinance, authorizes the Local Agency Formation Commission (LAFCO) to implement the San Francisco Community Choice Aggregation Program in conjunction with the SFPUC and reporting to the Budget and Finance Committee of the Board of Supervisors.

As required under State Law AB 117, CCSF must submit an Implementation Plan addressing the specific subjects identified in AB 117 to the California Public Utilities Commission (CPUC).

The City may elect to submit this Implementation Plan to the CPUC prior to the issuance of an RFP for a supplier. However, in D.05-12-041 the CPUC articulated that the submittal of implementation plans by prospective CCAs shall not trigger automatic changes to utility power purchasing. The submittal of an Implementation Plan may have the effect of changing the utility’s load forecasts, but the CPUC has agreed with the utilities that it should not

¹⁴ Other California cities/counties considering CCA implementation include the Kings River Conservation District (this incorporates a JPA of 13 Central Valley cities), Chula Vista, Berkeley, Oakland, Marin and Pleasanton.

¹⁵ See Attachment IV, Ordinance 86-04 (2004, Ammiano).

automatically do so. Therefore the submission of an implementation plan does not by law bind a city or county to provide CCA service and the CPUC has stated that it should not automatically change a utility's procurement responsibilities or approach.

The draft document prepared for submission to the CPUC, entitled "SF CCA Implementation Plan CPUC Compliance Filing" is included as Appendix A. The LAFCO shall determine the appropriate time for submission of this document to the CPUC. If the City submits this CCA Implementation Plan to the CPUC prior to acquiring a supplier, it should update its Implementation Plan with the CPUC after it has signed a contract with a supplier. If the Implementation Plan is submitted to the CPUC prior to securing a contract with a supplier, the City runs the risk of withdrawing the Implementation Plan either due to insufficient response to its RFP or for major revisions as a result of new information received through negotiations with its supplier. Alternatively, the City may wait until after it has closed its solicitation or has signed or is close to signing a contract with a supplier to formally submit its Implementation Plan to the CPUC.

AB 117 also requires a Community Choice Aggregator to prepare a statement of intent with the Implementation Plan. A Statement of Intent has been drafted in the form of a resolution for adoption in conjunction with this Implementation Plan. As described further herein, the draft SF CCA Implementation Plan CPUC Compliance Filing has been adopted in a duly noticed public hearing, and may be submitted to the CPUC as drafted. If substantial, material changes to either or both of these documents are required, as a result of further developments relating to the PG&E tariffs, the Request for Information (RFI), or Request for Proposal (RFP) processes the LAFCO, after consulting the SFPUC shall prepare amendments to the CPUC Compliance Filing document for adoption by resolution of the Board of Supervisors in a duly noticed public hearing, prior to submission to the CPUC.

The authority and effect of each document shall be as follows: In cases where there might be inadvertent conflict or grounds for misinterpretation of various documents this Community Choice Aggregation Implementation Plan, adopted in December, 2006 shall take precedence over the Community Choice Aggregation Implementation Plan - California Public Utilities Commission Filing (Appendix A) or separately filed Statement of Intent Board of Supervisors resolution in all matters relating to the implementation and ongoing management of the SF CCA Program.

This Implementation Plan addresses all of the items required by AB117 in order to provide the CPUC with the basis on which to present its findings regarding a cost recovery mechanism to prevent shifting of costs between CCA customers and PG&E's bundled service customers.

This document establishes a 51% RPS by 2017 as a bidding requirement for potential CCA suppliers, under an initial long-term contract, and any subsequent contracts with a competitively selected CCA supplier.

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The information that is required by Public Utilities Code Section 366.2(c)(3) to be included in the CCA Implementation Plan is listed below. This Plan, and the CPUC CCA IP Compliance Document, addresses each of these items:

- Organizational structure of the program, its operations, and its funding
- Ratesetting and other costs to participants
- Disclosure provisions and due process in setting rates and allocating costs among participants
- Methods for entering and terminating agreements with other entities
- Rights and responsibilities of program participants, including consumer protection, credit issues, and shut off procedures
- Program termination
- Description of third parties that will be supplying electricity under the program, including, but not limited to, information about financial, technical, and operational capabilities.
- A Compliance Matrix identifying the locations in which these subjects are addressed is provided as Appendix E. In addition to the CPUC CCA IP, pursuant to Public Utilities Code Section 366.2(c)(4), the Statement of Intent will also be submitted to the CPUC with the Implementation Plan explaining the City's commitment to the following:
 - Universal access
 - Reliability
 - Equitable treatment of all classes of customers
 - Any other requirements established by state law or by the CPUC concerning aggregated service.

This document addresses all of the above requirements and provides additional information about the CCA program not required in the CPUC filing so that San Francisco residents, businesses, and government departments have an in-depth understanding of the City's intentions and goals. Accordingly, the CPUC CCA IP and statement of intent subsequently submitted to the CPUC are governed by this Plan.

In order to finance the 360 MW rollout and exceed the renewable portfolio requirement binding PG&E, (20 % by 2010, an 8% increase from the 12% RPS level PG&E had in 2006) San Francisco will employ its H Bond Authority to finance renewable power generation facilities built, operated, maintained, and integrated into the CCA power portfolio by the City's chosen supplier. The cost of these facilities will be recovered within the chosen supplier's rates, with the benefits associated with these facilities to be distributed among all CCA ratepayers, on a *pro rata* basis. In addition, CCSF will offer residents and businesses H Bond financing for home and business installations of solar photovoltaic cells, energy efficiency technologies, distributed

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generation, and conservation systems, reducing or eliminating customer down-payments to own green electric technology, and paying back the H Bonds over the term of the supplier's CCA contract. As stated above, in order to develop large-scale renewable energy, conservation and efficiency projects, the City will contract with a supplier for the design, construction, operation, maintenance, and insurance of a 360 MW infrastructure that will be Community-owned with some components ultimately under title of private parties and some under title of CCSF. Analysis of the federal tax implications of the use of H Bonds to augment CCA was undertaken by Nixon Peabody at the request of LAFCO. The November 11, 2005 report is referenced repeatedly in Section 4.4.3. A copy of Nixon Peabody's LAFCO Report may be found below as Attachment VII.

The 51% RPS shall bind the supplier, such that each year's purchasing requirement shall be adjusted to reflect any delays in construction, such that the supplier could be required to make purchases that keep the CCA's RPS level on schedule even if it falls behind its build schedule for the 360 MW rollout. The construction schedule will be set to attain a 51% RPS and to attain this schedule, the Board of Supervisors and Mayor will retain the option to establish a second H Bond issuance from 2009 to 2012 to build enough additional new facilities to accomplish an RPS of 40% by 2012, and 51% by 2017; this additional H Bond issuance may also involve contract extensions with the supplier that must be approved by ordinance. San Francisco's RPS is defined as including energy efficiency and conservation measures, as well as renewable distributed generation such as solar photovoltaics and conventional RPS resources such as transmission-connected wind farms.

San Francisco's RPS schedule will thus involve a combination of building and buying. San Francisco's supplier will likely purchase wind capacity and energy from merchant generators and perhaps even Renewable Energy Credits (RECs) from third parties in order to achieve CCSF's 51% RPS.

CCSF's emphasis on building rather than buying green power is intended to deliver ratepayer savings not only in immediate term rate stability and a lower long-term commodity price of power, but also lowered costs of service associated with an improved load profile from load shaving, and reduced power consumption citywide, whose benefits may be enjoyed by consumers in the form of lower long-term rates.

Moreover, the Board and Mayor will not approve any contract with a supplier that would result in a rate increase when customers transfer to the new service, but shall incorporate a "meet or beat" requirement for the CCA RFP followed by a structured rate schedule intended to be competitive with PG&E rates. The Board of Supervisors will not attempt to change the rate structure approved in the ordinance awarding CCSF's contract to its chosen supplier, except as an emergency measure.

This Implementation Plan advocates a "build not buy" approach for the renewable generation resources used to serve the San Francisco CCA. This approach provides the potential benefit of reducing rates over time both through a lower cost of capital available to municipalities through tax-exempt (in this case H Bonds) financing and from the absence of fuel costs provided by

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many renewable generation technologies. While many facilities are expected to continue to generate electricity for thirty (30) to fifty (50) years with limited operating and maintenance costs, revenue bonds issuances will pay back within 15 to 20 years, meaning a low-cost, no-fuel component in the community's long-term electricity portfolio, for years after the bonds have been paid off.

San Francisco will prepare itself for commencement of basic CCA service within one year of the adoption of this Implementation Plan, provided that a supplier can provide the superior service requested at equivalent or lower electric rates for all participating residents and businesses.

This Implementation Plan provides the City with a detailed description of the CCA program, its organizational structure, its budget and staffing, and further refines Ordinance 86-04's framework for San Francisco's CCA RFP. This Implementation Plan proposes that the City's chosen supplier not merely sell commodity electricity "virtually" as a trader, but build, operate, maintain, and integrate into the CCA power supply City financed renewable generation infrastructure. This model is based on Ordinance 86-04.

The City and County will also be coordinating with Pacific Gas and Electric ("PG&E") and CPUC staff throughout the City and County's Community Choice Aggregation program development and implementation. PG&E will be presented with a full copy of this Implementation Plan as a courtesy, as well as the CPUC Implementation Plan Compliance document (Appendix A) when it is submitted to with the CPUC.

During the 90-day period prior to CPUC certification of receipt of the CPUC Implementation plan Compliance document, CPUC staff may request information about or clarification of the details of the City's CCA plans. The City and County will cooperate with CPUC staff in clarifying any outstanding issues so the CPUC can provide certification within 90 days.

The City continues to be interested in acquisition of PG&E's distribution system. In the event that voters approve an initiative creating a financing authority at a future date to pay for such an acquisition, the City would have to transition from CCA service to wholesale service as a municipal utility or other public power entity.

The City is pursuing public power service at both Treasure Island and at the Hunters Point site formerly occupied by the U.S. Navy. This CCA plan is separate from those undertakings.

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2.4 Implementation Phases

The implementation of the CCSF CCA will proceed in five phases:

- A Start-up phase which is now underway and which has culminated with this CCA Implementation Plan adopted by the BOS, and the establishment of a budget and an organizational structure to implement the CCA program;
- A Program Development phase to further develop the CCA program, undertake outreach to key City stakeholders regarding the CCA Plan, and ensure that (i) a successful Request for Information and Request for Proposals are issued, and (ii) that the CPUC process for receiving the CCA Implementation Plan and responding to any CPUC and PG&E questions is dealt with expeditiously, where the program is developed at a detailed level, and the actual processes for implementation are defined;
- A Procurement phase where the power supplier for the CCA is selected. through the RFP competitive solicitation and a contract is signed with the CCA supplier and approved by the BOS, and the process of obtaining Revenue Bond issuance for CCA is established;
- An Implementation phase where existing PG&E customers within San Francisco also become CCA customers, a mass media campaign is undertaken regarding CCA information for customers, the CCA opt-out process is completed, financial and accounting mechanisms are developed to ensure revenue bond fund are protected, revenue bonds are issued, the supplier begins the design and construction all of the renewable power generation facilities required under the contract, and CCA power flows to City residents and businesses,
- An Operations and Maintenance phase where the CCA resource targets are initially met, a mechanism to standardize opt-out processing for new customers is developed, the CCA supplier completes the targeted installation of the energy efficiency, solar and renewable power generation required under contract with the CCA, H Bond pay-back is underway, and the City and supplier will examine options to further enhance renewable or energy efficiency aspects of the CCA program to attain the 2017, 51% RPS target.

This Implementation Plan describes the San Francisco CCA Program, and sets forth the necessary implementing steps, such as the issuance of revenue bonds and other Design-Operate-Build-Maintain elements for the 360 MW rollout. This Plan also makes certain broad staffing, budgetary, and strategic decisions regarding the implementation of CCA. But to cover the broad range of implementation activities, some assumptions are made required regarding certain program elements. As the program elements are interdependent, subsequent refinement or changes to these assumptions may require restructuring of some of the methods and approaches described herein. In particular, the overall program schedule provided in this draft may well require further refinement based on decisions made during the subsequent Program Development phase. However a key premise of this Plan is that the City will incur no large-scale CCA expenditures until a CCA contract with a respondent to the RFP is imminent.

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2.5 Potential Benefits and Risks of a CCA Program

2.5.1 Lower Risk for San Francisco Residents and Businesses

Customers who elect to continue to allow PG&E to supply their electricity face large rate risks that are directly related to the company's management of its energy supply sources. This trend has a long history, and all evidence shows that it will continue into the future. Since 1980, whereas most U.S. and California utility rates have doubled, PG&E's rates have tripled— from an average of 4.76 cents per kilowatt-hour, to 13.8 cents per kilowatt hour in 2006.

PG&E Risk: Already \$1.6 Billion in Rate Increases. PG&E's 2006 rates increased 5.6% (\$568 million) from the previous year, and they are requesting "An increase in rates for electric service in 2007 by \$699 million, or 7.0 percent, over the currently authorized level of \$10.02 billion." They have also lined up "Further increases of \$153 million in 2008 and \$209 million in 2009 for electric service...."

PG&E Risk: Already \$1 Billion New Nuclear Plant Costs. A single Nuclear Power Plant provides nearly a quarter of PG&E's electricity supply. According to PG&E, "the utility plans to invest approximately \$1 billion in DCP [Diablo Canyon Power Plant] through the end of this decade to assure continued safe and efficient operation during the second half of its life." The California Public Utilities Commission has already granted permission for over \$800 million to be passed on to consumers in the form of rate increases.

PG&E Risk: Up to \$1.5 Billion in Carbon Liability Risk. Nearly half of PG&E's power comes from fossil fuels; 3 percent from coal, and 43% from Natural Gas. California targets call for a 25% reduction in Carbon emissions by 2020 that will be subject to carbon cap and trade market prices. Over the past year these have ranged between \$10 to \$35 per metric tonne of CO₂ in Europe, where carbon is currently regulated. At this range of carbon prices, if PG&E does not reduce its emissions, its ratepayers could be stuck with between \$500 million and \$1.5 billion dollars in carbon costs between 2010 and 2030.¹⁶


Energy Independence Means Rate Stability and Energy Security. The CCA Program is designed to offer San Franciscans a lower-risk electricity service and build a physically more secure energy system for the local community. By replacing a significant portion of San Francisco's power use from remote, fossil fuel and nuclear power to local renewable resources, San Franciscans will enjoy more stable power prices, and less exposure to increasingly volatile

¹⁶ Sources: California Energy Commission, 2006 Utility Rates and Electricity Sales Data from California Energy Commission; Bureau of Labor Statistics; PG&E, including PG&E Power Content Label, Jan. 2006 Bill Insert & PG&E Website; Point Carbon, and Environmental Economics.

natural gas-fired power plants, while also minimizing contracting, liability and financial risks to the City and County.

Structured Rates. Rate risk to CCA customers will be mitigated by requiring suppliers to offer a structured rate. The CCA supplier's structured rates must meet or beat PG&E's rates during the initial opt-out period of the contract for all classes of customers taking service through the program, and must commit to future rates through fixed or indexed prices, and cannot petition the City for a rate increase. PG&E's most recent rate schedule is as follows¹⁷:

WEBCAST



Electric and Gas
Energy Update

**RATES
2006**

Bundled Service Details*

BUNDLED RESULTS		Total	Revenue	Total	
<u>Class/Schedule</u>	<u>(MWh)</u>	<u>Bdld Sales</u>	<u>At Present</u>	<u>Proposed</u>	<u>Percent</u>
			<u>Rates</u>	<u>Rates</u>	<u>Change</u>
TOTAL RES	29,963,064		\$0.129	\$0.143	10.8%
TOTAL SMALL	8,497,642		\$0.146	\$0.150	2.9%
TOTAL MEDIUM	13,436,871		\$0.137	\$0.141	3.5%
TOTAL E-19	8,166,802		\$0.124	\$0.129	4.1%
STREETLIGHTS	391,704		\$0.148	\$0.157	6.3%
TOTAL STANDBY	264,200		\$0.132	\$0.125	-5.6%
TOTAL AGR	3,875,599		\$0.117	\$0.122	3.8%
TOTAL E-20	9,597,951		\$0.102	\$0.106	3.5%
Bundled Total	74,193,833		\$0.128	\$0.136	6.5%

* Illustrative rates from AET Advice Letter

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Apart from rate risk protection for customers, this Implementation Plan calls for the SF CCA Program to minimize other energy supplier performance risks through two bonding requirements contained in this Implementation Plan. First, the City's supplier is required to post a bond or demonstrate insurance to pay for any costs that might be incurred in returning customers to PG&E service in the event that the supplier cannot perform according to its contract or goes bankrupt, including the difference between spot and regulated rates for customers for a six month period, and any fees PG&E charges for involuntary return of customers. Thus, ratepayers will not be charged for any transaction costs in such a worst-case scenario. Second, this Implementation Plan requires the supplier to obtain a performance bond, letter of credit or other acceptable financial assurance instrument to cover any of its performance failures (including its subcontractors' failures) in the 360 Megawatt construction process, as is done in most major public works projects. This "double bonding" approach protects both CCSF and its ratepayers against worst-case scenarios in addition to protecting against cost-based rate increases.

¹⁷ CCA customers will receive distribution, transmission, and meter-reading services from PG&E, which are included in PG&E's listed rates. The PG&E Bundled Services Rate chart below reflects charges for these services as well as PG&E generation charge.

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2.5.2 CCA Offers the City an Opportunity for Local Control of the Community's Power Plant and Resource Portfolio and Structured Electric Power Generation Rates

As a supplier of electricity to the residents and businesses of San Francisco, the City will take on a more prominent role in energy resource planning. By setting the criteria for resource purchasing and installation by its competitive supplier, CCSF can dramatically accelerate development of renewable energy development above PG&E or market targets while also offering competitive rates. As electricity generation is among the largest causes of greenhouse gas emissions in San Francisco, the 51% RPS by 2017 will greatly help the City attain its greenhouse gas emission targets.

By setting the framework for establishing electric generation rates for its citizens, the CCA will principally aim to fulfill the goals of providing both competitively priced and much cleaner power than PG&E's portfolio of mostly natural gas-fired and nuclear power plants.

In addition to competitive rates, the CCA program will offer participating residents and businesses more *stable, predictable* rates than PG&E offers. In contrast to PG&E, which may change its rates once or even twice a year at the CPUC, the CCA supplier will commit to fixed or structured rates over the multi-year term of its contract with CCSF.

Finally, the CCA supplier will provide more than green electricity supply – it will offer ancillary services such as customer purchase of solar photovoltaics on residential and business rooftops, distributed generation, energy efficiency and conservation technology installations such as Combined Heat and Power, and other innovative clean technology applications required by Ordinance 86-04 and this Implementation Plan. These elements will become even more refined in the Program Basis Report and Request for Proposals (RFP) documents that CCSF will produce in coming months as part of its program implementation process.

2.5.3 Energy Security

Energy Security has many forms. A ubiquitous, distributed solar infrastructure throughout the city could potentially deliver significant opportunities for improved reliability and blackout protection services to customers who are prepared to pay a premium for this service. More in-city distributed generation may also offer the potential, depending upon interconnection arrangements, to provide some degree of electric service during grid failures and other emergencies, improving public safety in a natural disaster, rolling blackout or other grid failures.

Second, installing 360 MW of new clean energy technologies will dramatically reduce San Franciscans' dependence upon PG&E's nuclear power, natural gas and coal-fired generation, and provide a hedge against increasingly volatile gas-fired power costs. PG&E's power portfolio currently consists of 42% natural gas generation, making its customers particularly exposed to increasingly high, and even increasingly volatile, natural gas prices. While PG&E retains the

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right to request further rate increases from its remaining customers when costs rise from increased natural gas load, San Francisco's CCA program will circumscribe ratepayer exposure to PG&E's procurement activities. A 51% green portfolio for San Francisco by 2017 contrasts PG&E's 20% target for the same year, representing a very different risk profile for ratepayers.

The CCA program's new in-city renewable generation will increase reliability by broadening the City's resource portfolio mix. The efficiency and conservation measures will reduce demand, which has the collateral benefit of further enhancing the reliability of the City's power supply and reducing the environmental impacts from overdependence on conventional generation resources. As electricity causes 25% of the greenhouse gases emitted by the San Francisco community, the 360 Megawatt network will achieve an unprecedented greenhouse gas reduction for the City.

2.5.4 Market-Based, Strategic-Based, and Regulatory-Based Risk and Opportunities

The CCA program places market-based risks primarily on the CCA supplier. Predicting PG&E's generation rates, the major competitor to CCA, is a complex forecasting exercise. Rather than regulating its supplier's rates on a cost-of-service basis like PG&E, CCSF will seek a supplier willing to bear the greater burden of market risks. PG&E no longer provides an open-book review of their resource mix and power contract terms – indeed due to CPUC concerns about use of market power and negative impacts on PG&E ratepayers a substantial amount of information regarding PG&E's contracts is now held confidential by the CPUC. This makes the CCA supplier's forecasting of PG&E's average generation rates a complex process subject to a number of uncertainties. However it is clear that PG&E retains a considerable market advantage in generation rate-setting due to the relatively low current cost of its hydro and nuclear facilities. On the other hand, PG&E's hydro resources create a considerable source of fluctuation in PG&E's generation rates that may match and amplify generation rate volatility created by natural gas prices. The City's investment in renewable energy will reduce both its supplier's and San Francisco ratepayers' exposure to these volatile sources in the long term.

Allocation of PG&E's generation costs among customer groups is also a dynamic process subject to CPUC regulation. After a post Energy Crisis move to impose massive rate increases on commercial customers, more recent PG&E generation rate-setting by the CPUC has slightly reduced large and medium commercial rates while increasing residential and small business rates.

In addition to PG&E's rates changing as often as twice a year under CPUC regulation, PG&E is also embarking on new contracting initiatives for thousands of megawatts (MW) of power, including significant investments in natural gas-fired power plants, involving a Liquefied Natural Gas receiving terminal that its holding company, PGE Corp., is proposing to build in Coos Bay Oregon, in addition to new pipelines to transport the gas to its proposed new fleet of Northern California gas-fired power plants. These new contracts and investments will impact that utility's costs and ultimately its rates. The CCA supplier will be required to meet or beat PG&E's generation rates at the time of opt-out, and commit to a fixed or indexed structured schedule of

rates thereafter according to its own forecast of PG&E retail rates and wholesale power market prices.

CCA Customer mix can impact rate setting since there will be substantial uncertainty regarding CCA opt-out levels. The more confidence that CCSF can offer its supplier about its future electricity needs, the less risk the supplier and ultimately the CCA customers will bear. However, a mismatch of expectations about electricity use with reality could cause the CCA supplier to end up with power it cannot sell for the price it paid, or power it has to buy to meet demand at a price above its rates.

In addition to uncertainty around competitive and strategic market factors, the other major ongoing uncertainty is regulatory risk. The recently released CPUC decisions regarding PG&E's procurement contracts, and Local Resource Adequacy has reduced supplier uncertainty and resulting cost impacts. However, the CPUC has also yet to rule definitively on the RPS standards that will apply to both PG&E and CCAs as well— this kind of regulatory uncertainty must also be borne by CCSF's CCA supplier.

Another crucial factor in the CCA plans will be the timing of bond issuance to support CCA investments in renewable energy facilities. Obtaining a credit rating for the H Bond issuance must take into account the results of mass customer opt-out, and the CCA's contract with its supplier.

One important risk mitigation factor in bond issuance undertaken by this Implementation Plan will be the RFP's requirement that the CCA supplier obtain a performance bond, letter of credit or other acceptable financial assurance instrument to cover any of its performance failures (including its subcontractors failures) in the roll-out of the CCA's 360 Megawatt renewable and energy efficiency portfolio – as well as Ordinance 86-04's requirement that the supplier also post a bond to cover any procurement costs related to returning customers to PG&E involuntarily in a worst-case scenario.

2.5.5 Request for Proposals, Contract Execution and Implementation, and On-Going CCA Operation Risk

The RFP for CCA might well be the single largest City RFP ever issued e.g. a long-term contract for CCA energy supply services for a fifteen year period could well be worth about \$3 Billion. It is vital that the City manage both the RFP and contractual process with care, diligence, and success.

Implementation of CCA will entail the processing of about 360,000 accounts in two sequences over a 4-month period. This processing will place these customer accounts into two categories – those who have opted-out of CCA and those who have opted-in by choosing not to opt-out. There are a number of operational problems that can occur during this start-up of CCA implementation. The principle operational problems can occur in the proper processing of customers into the correct categories. The risk is that glitches in opt-out processing will result in

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customers being incorrectly assigned with resulting customer confusion, complaints, and sizable transactions costs to remedy these problems. Processing of opt-out notices will also be an on-going matter for the CCA since about 25% of the residential/small business customers in the City turn-over on an annual basis, and AB117 appears to require that new customers be offered an opt-out opportunity.

The major risk mitigation factor operating at this juncture will be a cooperative effort between PG&E, the CCA supplier, and the City CCA staff to ensure that the CCA Communications Program is effective, that flow of data between all parties is being properly tracked and managed, and that problems once detected are promptly resolved. Of course, AB117 and CPUC regulations both require full cooperation from PG&E, and all parties (PG&E, Supplier, or the City) should be motivated to cooperate in this task since any processing problems can and will create costs for all parties.

A CCA operational uncertainty going forward is the risk of late payment or non-payment by customers of CCA generation charges. Late payment by CCA customers could amount to over \$2 million a month. Currently PG&E does not levy late fees, hence a sharing of late fees between PG&E and a CCA is not an option. It is likely that a supplier would charge an incrementally higher price for wholesale supply to offset any continuing late payment circumstances. Of even more importance is that under CPUC CCA rules non-payment of the CCA generation portion of the bill by a customer does not warrant disconnection of that customer's service by PG&E. In fact, under current rules it is conceivable that a customer could pay just that portion of their bill that is considered "disconnectible" – currently defined as a subset of PG&E's charges, and not face service interruption. An important recourse of the CCA, in such a situation, is to return that customer to full PG&E "bundled" electrical service. The CCA supplier will of course, closely track late payment and the City will offer its full assistance in ensuring the transfer of chronically non-paying, under-paying or late paying customers back to full PG&E bundled service.

2.5.6 CCA Program Commitments and Termination Risk

While it should be anticipated that the CCA Program would be a stable part of City government there are counter-party risks particularly in the energy markets. Untimely termination of the contract by the City's supplier could result in a transfer of customers back to PG&E and increased costs for these formerly CCA customers. In recognition of this risk the CCA is required, as part of its CPUC registration process, to post a bond to safeguard customers. In accordance with Ordinance 86-04, this risk will be addressed in the RFP by requiring the City's supplier to, in turn, post a bond or demonstrate insurance to pay for any costs that might be incurred in returning customers to PG&E service in the event that the supplier cannot perform according to its contract or goes bankrupt, including the difference between spot and regulated rates for customers for a six month period, and any fees PG&E charges for involuntary return of customers. Thus, CCA ratepayers will not be charged for any transaction costs in such a worst-case scenario. In the event that the City chooses to commit to take customers prior to finalizing its contract with a CCA supplier (e.g. if the CPUC's procurement decisions regarding PG&E call

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for urgency), the City may have to assume the slight risk of posting such a bond, with the CPUC prior to finalization of the CCA contract with its chosen supplier.

2.6 The Process of San Francisco's Aggregation

Exhibit II-1 outlines the Community Choice Aggregation Implementation Steps required either by the California Public Utilities Code or by the CCA and other decisions of the CPUC, as follows.

Exhibit II-1 CCA Implementation Steps Under PUC 336.2

ITEM/CODE SECTION	ENTITY
Adopt rules authorizing community aggregation: 366.2(i)(3); procedures for IOUs to provide CCAs with info: (c) (9); terms and conditions for IOU services to CCAs and customers: (c)(9)	CPUC
Request and obtain utility load info: (c)(9)	CCA/IOU
If desired, set up Joint Powers Authority	CCAs
Develop Implementation Plan (c)(3)	CCA
Adopt Implementation Plan through public process (after public notice)	CCA
Submit CPUC Implementation Plan Compliance document to CPUC (c)(3) and register with CPUC: (c)(14)	CCA
Request additional information on Implementation Plan	CPUC
Respond to CPUC data requests	CCA
Notify local utility of Implementation Plan filing, within 10 days of the filing (c)(6)	CPUC
Certify receipt of Implementation Plan within 90 days (c)(7)	CPUC
Determine cost recovery charges CCA customers must pay (c)(7)	CPUC
Establish post-enrollment period reentry fees paid to IOUs: (c)(11)	CPUC
Designate earliest possible date for implementation of CCA Implementation Plan (c)(7)	CPUC
Select CCA Provider(s) through competitive procurement process	CCA

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ITEM/CODE SECTION	ENTITY
Establish terms and rates for all transaction-based costs of notices, billing, metering, collections, customer communications or other services, to be recovered from aggregator or its customers: (c)(17)	CPUC
If pursued, order for IOUs to send out any notices regarding the CCA Implementation Plan; establish fees paid for notices: (c)(13)(B)	CCA requests (probably in IP); CPUC
Determine IOU meter costs (install, maintain, calibrate, read, supply data): (c)(18)	CPUC
Register with CPUC: (c)(14)	CCA
Send out 2 pre-enrollment notices to customers of CCA: (c)(13) (A)	CCA via IOU (utility bill) pursuant to CPUC order or direct mailings
Notify IOU the community aggregation program will begin within 30 days: (c)(15)	CCA
Transfer accounts to CCA: (c)(16)	IOU
Recover transfer costs, as determined by CPUC, from CCA: (c)(17)	IOU
Begin CCA automatic enrollment	CCA
“No penalty” period for opting out ends, within 60 days or 2 billing cycles of the date of enrollment (c)(11)	
Send out 2 post-enrollment notices to customers: (c)(13)(A)	CCA via IOU (utility bill) and/or direct mailings
Submit report to Legislature certifying implementation of cost-recovery mechanisms: (i)(1) and (i)(2)	CPUC

Notes: CCA = Community Choice Aggregator
IP = Implementation Plan
IOU = Investor Owned Utility
CPUC = California Public Utilities Commission
All Code references are to Sec. 366.2

2.6.1 San Francisco’s CCA Process History

San Francisco has made considerable efforts to prepare for the CCA Program. The California Community Choice law itself was first requested by the San Francisco Board of Supervisors in 1999, and sponsored by Senator Migden when she was in the Assembly. In 2001, San Francisco

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voters approved the use of revenue bonds to finance the construction of renewable energy equipment and facilities, by approving Proposition H.

In order to assess the CCA Program, SF LAFCO commissioned the R.W. Beck AB 117 Assessment Report on Community Choice Aggregation, dated August 6, 2003, The SFPUC Commissioned the Rocky Mountain Institute study and the City subsequently adopted the SFPUC and SFE Electricity Resource Plan in 2002; most recently SF LAFCO, chaired by Supervisor Ross Mirkarimi, commissioned the law firm of Nixon Peabody to prepare an analysis of certain legal, organizational and finance matters relating to the CCA Program, (November, 10, 2005). The report, which LAFCO has referred to the Board of Supervisors, 1) concluded that under AB 117 only the Mayor and the Board of Supervisors can elect CCA for the City, and that only the Mayor and Board of Supervisors can condition the method to be used for CCA implementation, and 2) recommended a single-purpose Board of Control to administer the CCA program and 3) analyzed the use of revenue bonds issued pursuant to Proposition H to fund elements of the CCA program.

In addition to these external evaluations, San Francisco has conducted an extensive internal policy review of the CCA Program, and has advanced a number of political measures to enable the implementation of the CCA Program. With the California CCA Law and H Bond authorities approved, the Board of Supervisors and Mayor unanimously adopted the CCA “Energy Independence” Ordinance in May 2004. Local Power and the San Francisco Public Utilities Commission each prepared Draft Implementation Plans for the CCA Program. LAFCO recommended Local Power’s plan to the Board of Supervisors by resolution early in the summer, and in late summer passed a second resolution with additional policy recommendations and the incorporation of a number of elements of the San Francisco Public Utilities Commission Draft Implementation Plan. Official actions over seven years include the following:

The Board of Supervisors and Mayor created the CCA Task Force by Resolution in December 2004. The CCA Task Force is comprised of a number of experts in CCA and energy policy. The Task Force has held nine public meetings to consider and prepare for the CCA Program, concluding with a summit inviting all CPUC-registered Electric Service Providers. After a year and a half of work, the CCA Task Force adopted two resolutions for the Mayor and Board of Supervisors relative to the CCA program, including H Bonds, governance, and implementation structure.¹⁸

During the summer of 2005, Local Power and SFPUC participated in 70 hours of LAFCO hearings, leading to the preparation of a Budget Analyst Report to the Budget and Finance Committee, followed by extensive Mayor’s Office meetings, a number of major open CCA

¹⁸ *Community Choice expertise (Paul Fenn, Chair), Revenue Bond expertise (Lino del Signore), Power Procurement expertise from the SFPUC (Barbara Hale), Energy Efficiency expertise from the San Francisco Department of the Environment (Cal Broomhead), and representatives of Business (Gino Lazzara, Vice Chair), Labor (former Chair Ron Dicks) and the Bay View Hunters Point community (Maurice Campbell, who is also an energy expert).. The CCA Task Force’s approved minutes and related documents are posted online at sfpuc.gov.*

Program issues were resolved, as reported to the Board of Supervisors Budget and Finance Committee by SFPUC and Paul Fenn on December 15, 2005.

In September 1999, the Board of Supervisors unanimously adopted a Resolution by Supervisor Ammiano asking the California legislature to pass a Community Choice Aggregation law.

In November 2001 voters approved an amendment, placed on the ballot by the Board of Supervisors ("H Bond Authority" Ammiano) to the San Francisco Charter San Francisco Charter Section 9.107.8), creating an unlimited, generic revenue bond authority for the Board of Supervisors to issue to finance or refinance the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation.

In January 2002 the San Francisco Public Utilities Commission held a World Solar Industry Workshop at which Local Power made a presentation on the H Bond Authority, followed by significant incremental solar photovoltaic installations at City properties such as the Moscone Center. Subsequently, the Board of Supervisors adopted an Ordinance creating the Generation Solar program, which offers residents and businesses assistance with purchasing and installing solar photovoltaic systems.

In March 2002, San Francisco also adopted Resolution 158-02 directing the City to commit to a greenhouse gas pollution reduction of 20% below 1990 levels by the year 2012.

In December, 2002, San Francisco adopted an Electricity Resource Plan calling for the development of 107 Megawatts (MW) of load reduction through electricity load management and efficiency measures, 31 MW of in-City solar energy, 72 MW of small-scale distributed generation such as fuel cells in San Francisco and 150 Megawatts of new wind energy imports by 2012, as well as new natural gas powered generation needed to close over 420 megawatts of power generating facilities at Hunters Point and Potrero power stations.

In September 2003, the Local Agency Formation Commission ("LAFCO") accepted a report from R.W. Beck indicating that Community Choice Aggregation may be a feasible method of benefiting consumers and developing renewable energy resources, conservation programs and energy efficiency.

On May 21, 2004 the San Francisco Board of Supervisors unanimously adopted (Ordinance 86-04, Ammiano, signed by Mayor Newsom on May 27, 2004), and it went into effect on June 27, 2004. The Ordinance is the governing document ordering preparation of and outlining the structure of this Implementation Plan, and also ordering City agencies to present a draft Request for Proposals (RFP) for amendment and adoption by the Board of Supervisors. Ordinance 86-04 also ordered City and County departments to request all appropriate billing and load data from PG&E.

On December 8, 2004, the Board of Supervisors unanimously approved a resolution (Ammiano, Resolution 757-04), creating a Community Choice Aggregation Citizen's Advisory Task Force

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"to advise the City on 1) the goals and preparation of a CCA Implementation Plan, 2) the use of Proposition H Bonds to accelerate the use of renewable energy, conservation and energy efficiency in the CCA program, and 3) the requirements in the CCA bid solicitation process, and 4) the evaluation of bids. Furthermore, Resolution 757-04 affirmed that Ordinance 86-04 "called for the development of 107 Megawatts of load reduction through electricity load management and efficiency measures, 31 Megawatts of in-City solar energy, 72 Megawatts of small-scale distributed generation such as fuel cells in San Francisco and 150 megawatts of new wind energy capacity by 2012, as called for by the Electricity Resource Plan adopted by San Francisco in December 2002."

On February 5, 2005, the Board of Supervisors approved a Resolution (Mirkarimi, Resolution 131-05) urging the SFPUC to explore, based on findings of the Local Agency Formation Commission ("LAFCO") reports, implementation of Community Choice Aggregation and environmentally sustainable Public Power on Treasure Island.

March 11, 2005 the San Francisco Local Agency Formation Commission (LAFCO), chaired by Supervisor Ross Mirkarimi, formally requested a Draft Implementation Plan from Paul Fenn of Local Power, who is the Board of Supervisors' first appointment to the Citizen's Advisory Task Force on Community Choice Aggregation (CCA Task Force), and was subsequently appointed Chair by Task Force members.

On March 11, 2005 the SFPUC, with SF Department of the Environment submitted a first draft version of its Implementation Plan pursuant to Ordinance 86-04 to the LAFCO.

On March 29, 2005 the Board of Supervisors approved a Resolution (Mirkarimi, Resolution TBD) approving a "Protest Letter to the California Public Utilities Commission and the Procurement Review Committee Regarding Approval of Proposed Pacific Gas & Electric Power Purchase Agreements and Energy Efficiency Programs."

On April 28, 2005 the SFPUC and the SF Department of the Environment submitted its final draft Implementation Plan to the Clerk of the Board of Supervisors as directed by Ordinance 86-04.

On May 13, 2005, LAFCO accepted and transmitted Paul Fenn's Community Choice Aggregation Implementation Plan to the Board of Supervisors "With Recommendation."

On May 24, 2005 LAFCO adopted a resolution (File No. 050916) endorsing Paul Fenn's CCA Implementation Plan, as amended.

On August 8, 2005 LAFCO approved a "Resolution on Policy and Program Recommendations for Community Choice Aggregation Implementation Plan" containing additional recommendations relative to the CCA Implementation Plan, and referred it to the Board of Supervisors.

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On November 10, 2005 LAFCO accepted Nixon Peabody's Report on the use of H Bonds with CCA, addressing Jurisdiction and Governance issues, and recommending an implementing entity structure.

On December 15, 2005, SFPUC staff and Paul Fenn submitted a "CCA Stakeholders Points of Agreement Summary and Work plan for Outstanding Issues" to the Board of Supervisors.

On February 15, 2006 LAFCO transmitted Nixon Peabody's Report to the Board of Supervisors and Mayor.

On May 3, 2006, the Mayor and Board of Supervisors approved and adopted a \$5 Million Start-Up Budget for the City's CCA Program.

2.6.1.2 Current Process: Implementation Plan Actions and Requests 2007

Having prepared the ground for a successful CCA implementation, the Board of Supervisors now implements a process to switch San Franciscans over to CCA electricity service. Accordingly, the Board provides for the following processes of its CCA program, as described here, and in further detail in Section V. Program Implementation.

This Implementation Plan shall go into effect immediately, upon its adoption by ordinance. Adoption of this Plan authorizes and tasks the Local Agency Formation Commission (LAFCO) and the SFPUC to work in conjunction as described in more detail herein to manage the implementation of the CCA Program. The LAFCO will also work with city departments to identify staff that will be assigned to participate in the CCA Program. The Board of Supervisors Budget and Finance Committee will oversee the LAFCO and authorize its funding.

LAFCO shall have the authority to develop and recommend the CCA Request for Information (RFI), and the CCA Request for Proposals, (RFP), as provided in this IP. LAFCO will consult with the SFPUC regarding the development of these documents, and request the SFPUC to provide a written task approach, document outline, completion schedule, and proposed budget for the completion of each of these tasks within three weeks of the initial consultation with LAFCO. In the event that the approach proposed by the SFPUC for either of the above tasks is not accepted by LAFCO at its sole discretion, at a hearing duly noticed for said purpose, LAFCO may recommend to the Board of Supervisors a LAFCO drafted RFI, or RFP. Whether prepared by the SFPUC, or under contract through LAFCO, LAFCO is authorized to review said draft RFI and RFP and make such recommendations to the Board of Supervisors as it shall deem appropriate. The CCA RFI shall, by resolution, be authorized for release by the Board of Supervisors upon recommendation of the Local Agency Formation Commission (LAFCO).

Upon authorization from LAFCO, the SFPUC will begin work immediately, to review, edit and complete a draft RFI prepared by the CCA Stakeholder Group and the City and County's Community Choice Aggregation Task Force.

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Within two weeks of the date the RFI is completed, LAFCO, in coordination with the SFPUC, shall cause it to be published in every major Bay Area newspaper, the largest circulation newspaper of every California county, as well as in major national and international energy industry and alternative energy industry and public works industry trade publications. The RFI shall require respondents to submit responses to the RFI within 45 days of the date of publication.

The SFPUC and LAFCO shall prepare and submit a report and recommendations on the RFI responses (along with copies of the responses themselves) to both the SFPUC Commissioners and the Budget and finance Committee within 15 days after the closure of the RFI process. The report shall identify the information gathered through the RFI Process that should be considered in the further development of the CCA Program and in particular the design of CCA supplier solicitation documents (RFQ, RFP, etc.).

Upon completion of the report on the RFI responses, LAFCO shall have the authority to prepare and recommend the CCA Program Basis Report, as described in the IP. LAFCO will consult with the SFPUC regarding the development of the Program Basis Report, and request the SFPUC to provide a written task approach, document outline, completion schedule, and proposed budget for the completion of the Program Basis Report within three weeks of the initial consultation with LAFCO.

In the event that the approach proposed by the SFPUC for the development of the Program Basis Report is not accepted by LAFCO at its sole discretion, at a hearing duly noticed for said purpose, LAFCO may recommend to the Board of Supervisors a LAFCO drafted Program Basis Report. In the event that the SFPUC is authorized to prepare the Program Basis Report within a timeframe determined by resolution of LAFCO, and the SFPUC fails to submit a draft Program Basis Report to LAFCO for consideration within the required timeframe, LAFCO, at a hearing duly noticed for said purpose, may recommend to the Board of Supervisors acceptance of a LAFCO drafted Program Basis Report.

The Program Basis Report shall provide the basis for a draft CCA Request for Qualifications and Request for Proposals (RFP).

The following timeframes are expected for the development of the Program Basis Report, Draft Request for Qualifications and draft Request for Proposals:

Item	Deadline
Program Basis Report	Depending upon the level of detail and assessment required in the RFP, this report could vary from 60 to 180 days from LAFCO authorization to proceed
Draft Request for Qualifications	60 days from completion of the Program Basis Report

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Draft Request for Proposals	90 days from completion of the Program Basis Report
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The LAFCO shall be required to provide a justification to the Budget and Finance Committee for proposed durations greater than those identified above.

Within 15 days of completion of the Program Basis Report, LAFCO shall initiate work on the subsequent Request for Qualifications (RFQ) and Request for Proposals (RFP) to solicit potential CCA suppliers as described in Section 4(A)-(G) of Ordinance 86-04, shall, by ordinance, be authorized for release by the Board of Supervisors upon recommendation of LAFCO. The RFP should also contain specific reference to the recently enacted AB 32 (The Global Warming Solutions Act) in order that respondents may leverage financial incentives provided therein. Upon receipt of responses to the RFP, LAFCO, in consultation with the SFPUC, and upon consideration of SFPUC's recommendations, shall review all such responses and recommend to the Board of Supervisors a new supplier contract.

In the event that the SFPUC is authorized to prepare the RFQ and RFP within a timeframe determined by resolution of LAFCO in its sole discretion (but in no case shall such period be less than sixty (60) days), and the SFPUC fails to submit a draft RFQ or RFP to LAFCO for consideration within the required timeframe, LAFCO, at a hearing duly noticed for said purpose, may, *sua sponte*, recommend to the Board of Supervisors issuance of a LAFCO drafted RFQ and/or RFP. In the event that the SFPUC fails to complete a timely review of RFP responses and recommend a contractor based thereon, LAFCO may, by resolution, declare its intent to recommend a contractor to the Board of Supervisors on a timeline and in a manner defined by said resolution.

Within 15 days of receipt of the draft Request for Proposals (RFP) publication from LAFCO, the Budget and Finance Committee Chair shall convene a quorum of members to evaluate a draft RFQ and RFP, and an Open Season strategy, and shall approve or request further work on the draft RFQ and RFP prior to recommending it to the Board of Supervisors.

The Board of Supervisors shall hold hearings on a resolution amending and/or approving the RFQ and RFP for publication at its next regularly scheduled Budget and Finance Committee meeting, which shall make any amendments on an expedited basis and refer the document to the Board of Supervisors to authorize, by resolution, the LAFCO to publish the RFQ and RFP immediately in the manner required by this Plan.

The LAFCO shall amend and/or submit CCSF's CPUC IP Compliance Document (Appendix A) to the CPUC at the appropriate time.. This action will be followed by the CPUC's statutorily defined 90-day certification process pursuant to Public Utilities Code Section 366.2 (c)(7) and any additional information requested by the CPUC in order for it to present its findings regarding any cost recovery that must be paid by participating San Franciscans to prevent a shifting of costs as provided for in subdivisions 366.2 (c) (d), (e), and (f).

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CPUC rulemaking proceedings may affect the schedule of CCA implementation in various ways. One specific concern is the timing of CCA implementation in relation to PG&E's new resource procurement schedule. The CPUC has established a policy, consistent with provisions of AB 117, requiring CCA customers to keep non-CCA utility customers financially "indifferent" to the departure of CCA load from the utility's power procurement requirements. PG&E determines its long-term resource needs including forecasts of CCA load departure in its Long-Term Procurement Plan filed in the CPUC Long-Term Procurement Proceeding (R. 06-02-013). PG&E has previously filed Long Term Procurement plans anticipating that a certain percentage of its load will depart to CCA service. We anticipate it will continue to reflect such expectations in its load forecasts. As CCSF continues its implementation of CCA, it should maintain a presence in these CPUC Long Term Procurement Proceedings to ensure that load loss to CCA continues to be part of the PG&E's load forecasts.

Retail end-use customers receiving power procurement services from a CCA are required to reimburse the incumbent electric utility (PG&E in San Francisco's case) that previously served the CCA customers for: (1) the utility's "unrecovered past undercollections" for electricity purchases, including financing costs, attributable to the customer that the CPUC has lawfully determined are recoverable in rates; and (2) any additional costs the utility has incurred on behalf of the departing customer that were recoverable in CPUC approved rates equal to the "estimated net unavoidable electricity purchase contract costs", as determined by the CPUC, for the period up to the commencement of CCA electric procurement services. In other words, the costs that PG&E incurs on behalf of CCSF's CCA customers prior to establishment of the CCA program shall not be "shifted" to non-CCA PG&E electric customers. CCA customers will have to compensate the utility for the utility's "stranded costs", or the costs they cannot recover by reselling power procured on behalf of CCA customers. These costs make up the Cost Responsibility Surcharge that CCA customers will have to pay as an additional line item on their bill. The CPUC has recently issued D. 06-07-030 creating a new method for calculating these costs for Direct Access customers, which may extended to CCA customers.

In order to effectively coordinate resource-planning efforts and reduce unnecessary costs for both CCAs and utilities, the CPUC has developed a voluntary "Open Season" tariff that allows CCAs to make binding and advance commitments to provide service. In D.05-12-041 the CPUC determined that unless a CCA participates in a voluntary Open Season and submits a "Binding Notice of Intent" to the CPUC and the appropriate utility to initiate a CCA program, the CCA is required to reimburse the utility for the net unavoidable stranded costs the utility incurred as a result of the CCA's load departure up until the commencement of CCA service. If CCSF participates in the Open Season process, and follows through with its commitment to commence service on the date provided in its Binding Notice of Intent, it will receive a "vintage" of CRS associated with the year its submitted its Notice of Intent and not associated with the year it actually commenced service. The benefit of having an earlier vintage on the CRS may be to reduce the total CRS obligation of CCSF's CCA customers by providing the utility with advance warning of CCA service commencement.

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Outside of the Open Season, it may be possible for the CCA to negotiate an alternate “Binding Commitment” to a commencement date for CCA service, however this would be outside the Commission approved “Open Season” tariff and PG&E may include additional requirements.

The Open –Season commitment option can be evaluated when a CCA supply contract negotiation is underway.

The LAFCO shall submit a binding commitment document for the CPUC to the Board of Supervisors for approval by the Board of Supervisors to coincide with the award of the Contract.

CPUC Proceedings

In order for the CPUC to facilitate the City’s negotiation with potential CCA suppliers pursuant to 366(a) of the Public Utilities Code, the City and County of San Francisco requests the CPUC to provide, within 90 days of the receipt of this adopted Implementation Plan, the cost-recovery mechanism that must be paid by participating San Franciscans, pursuant to Section 366.2 (c)(7) of the Public Utilities Code.

The City declares its expectation that the CPUC shall notify PG&E, as outlined in Subsection 6, ten days from the Board’s submission of its CPUC Compliance Document (Appendix A) to the CPUC.

Accordingly, pursuant to Subsection 7, the City and County declares its expectation that the CPUC will request information from the LAFCO, certify receipt of this Implementation Plan, and report to the LAFCO its findings regarding any cost recovery that must be paid by customers within 90 days of receiving the Implementation Plan, pursuant to Section 366(a) of the Public Utilities Code and Public Utilities Code Section 366.2(c)(7).

San Francisco declares its intent to register with the CPUC as it prepares its RFP during the 90-day waiting period, and understand that the CPUC may require additional information to ensure compliance with basic consumer protection rules and other procedural matters, in accordance with Public Utilities Code Section 366.2(c)(14).

The City and County anticipates commencement of its customer opt-out notification process as early as ninety (90) days from the date on which the CPUC IP Compliance Document is submitted to the CPUC.

2.6.2 SF CCA Request for Proposals

The suppliers shall be requested to propose a rollout schedule for the 360 MW of new facilities subject to a performance ratesetting mechanism contained within the monthly H Bond Repayments from PG&E electric bill revenues transferred to the CCA. Accordingly, the City will conduct a single competitive bidding process for San Francisco residents’ and businesses’ bundled energy service, conforming to the requirements of this Implementation Plan, by publishing the RFP ordered by Ordinance 86-04 and further outlined in this Implementation

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Plan, in all major Bay Area Newspapers, and also in any state, national and international energy industry trade publications to secure the attention of energy industry sectors for each component of the services and minimum resource portfolio required by the ordinance and this Implementation Plan.

Prospective CCA suppliers shall have ninety days to respond to the publication of the RFP, and the City shall elect to approve, or not approve, an award of contract to a single CCA Supplier by ordinance.

After the CPUC takes its actions as described above, to facilitate a successful elimination of participating customer loads from PG&E's current electric procurement plan in R.04-04-003, and to minimize the shifting of costs between utilities or their customers and San Francisco ratepayers, consistent with the CPUC's Community Choice Aggregation decision on December 16, 2004, then San Francisco intends to pass an ordinance awarding contract to the City's chosen supplier, and furthermore the City and County declares that this ordinance shall secure the City and County's chosen supplier's binding commitment to serve that load as a Load Serving Entity (LSE) in accordance with Conclusions of Law #1 and #4 in and Order # 2 in the CPUC's electric utility procurement framework decision, D.04-01-050, , (pp.192-3 and p.199)

As Public Utilities Code 366.2(c)(16) requires PG&E to transfer all applicable accounts to the new supplier within a 30-day period from the date of the close of their normally scheduled monthly metering and billing process, a binding commitment by the City of San Francisco shall notify the CPUC and PG&E of the intended date of customer transfer so that this term may be firmly established. A binding commitment made some months ahead of customer transfer, will be necessary to ensure that the commitment date is kept, avoiding any potential cost incurrence for the City and its CCA supplier).

San Francisco declares its intent to transfer customers who do not opt-out of the City's chosen new service 60 days from the date of the City's opt-out notifications being mailed to customers or emailed to customers who are on email-only service.

Within sixty days of the date of termination of the opt-out period, the three-year rollout of the City's minimum 360 Megawatt solar, wind, conservation and efficiency facilities by the City and County's chosen suppliers shall commence, according to the annual rollout schedule outlined in its contract with the City and County in order to comply with the requirements of this Plan.

However, if at the termination of the penalty free 120 day opt-out period required by AB117, ten percent or more of the eligible aggregate load has opted out, the 360 MW build requirement shall be proportionately downscaled across each portfolio component of the 360 MW by the actual opt-out amount, rounded to the nearest megawatt. For example, if 10% of the load opts-out, the revised three-year build requirement would be 324 MW of capacity (compared to 360 MW) distributed across the portfolio components as follows:

- 96 MW Energy Efficiency and Conservation in San Francisco

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- 93 MW Distributed Generation in San Francisco including minimum 28 MW of Photovoltaics
- 135 MW wind

This potential downscaling shall be a one-time event at the termination of the penalty-free opt-out period only. If subsequent opt-outs occur after the 120 day period expires, they may change the CCA's total power resource needs, but they shall not change the resource development requirement. The Renewables (RPS) requirements on the other hand shall be calculated as a percentage of actual kilowatt-hour sales, and therefore scales automatically with customer electricity consumption.

2.7 The Consequences of San Francisco's Aggregation

If the RFP is successful, San Francisco will make a binding commitment to commence services, and the CCA program will likely result in the departure of the majority of electricity ratepayers living or doing business in San Francisco and currently receiving electric power service from Pacific Gas and Electric. In addition a successful RFP might attract some of the largest commercial customers in the City who are currently receiving Direct Access service. Moreover, the CCA program will seek participation by all eligible customers. The City will not attempt to implement a phase-in of customers on a neighborhood-by-neighborhood basis nor on a customer class-basis, but shall offer its service to any and all PG&E commodity customers who do not elect to continue to be served by Pacific Gas and Electric.

Departing PG&E customer load. The City and County has provided adequate notice for PG&E to avoid over-procurement on behalf of San Francisco ratepayers beyond December, 2007. San Francisco's Community Choice program will not impact any multi-year power contracts by Pacific Gas and Electric, which asserts that in its medium case, PG&E assumed that three percent of its current customers with load under 500 kW will begin to migrate to Community Choice Aggregation in 2006, and the rate of loss to this market will increase by one percent annually, reaching 10 percent in 2013, as recorded and referenced by the CPUC in its December 16, 2004 procurement authorization (Decision 04-12-048, p.26). Under the Total Portfolio approach adopted in D.05-12-041 the CRS calculation will reflect any expected load loss PG&E anticipated in its long-term procurement plan. As this decision authorizes contracts now being negotiated and signed by PG&E in its first effort at multi-year power purchase agreements since AB1890 went into effect, PG&E's power contracts and advice letters to the CPUC and the Procurement Review Committee (PRC). PG&E and the CPUC received San Francisco's Community Choice Implementation Ordinance (Energy Independence Ordinance) on May 27, 2004 when Mayor Gavin Newsom signed it. Ordinance 86-04 ordered this Implementation Plan, and established the basic structure that this Plan must follow, both in transaction structure and in portfolio. While current CPUC policy does not recognize system benefits to the utility grid such that only a binding commitment will result in a specific change in PG&E procurement, if successful San Francisco's CCA program will result in a considerable quantity of electric energy efficiency and electric generation in-city, Within San Francisco, both the 107 MW of conservation and energy efficiency measures that will be implemented within its jurisdiction,

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72 MW of distributed generation such as fuel cells will be installed North of the Jefferson-Martin Station as well as a minimum of 31 Megawatts of solar photovoltaic cells within the City. When combined, these facilities will benefit the San Francisco Peninsula's grid (although not necessarily the wind resource), reducing not only PG&E procurement but also the need for new transmission lines to the City and additional new power plants, potentially outside City in neighboring Northern California communities.

Furthermore, this Implementation Plan establishes a Renewable Portfolio Standard for qualifying bidders of 51% RPS compliant resources by 2017. See Exhibit II -2 "San Francisco RPS." As stated above, the City's RPS definition includes energy efficiency, customer and non-customer owned photovoltaics, and distributed renewable generation. The City's CCA Provider will also be required to comply with the State of California's Renewable Portfolio Standard law pursuant to state law and CPUC policy and resource definitions .

Exhibit 2 - 2

San Francisco RPS

San Francisco Model RPS Rollout											
Contract yr. #	year	Baseline Consumption kwh	Efficiency Capacity kw	Savings kwh	pct.	CCA net consumption kwh	New Build RPS Model Kw	Cumulative CCA Renewables	Renewables Generation Kwh	RPS (hard)	
1	2006	1,818,072,000	0	0	0.0%	1,818,072,000		0	0	0%	
2	2007	3,690,686,160	36,000	63,072,000	1.7%	3,627,614,160	85,000	85,000	223,380,000	6%	
3	2008	3,746,046,452	72,000	126,144,000	3.4%	3,619,902,452	85,000	170,000	446,760,000	12%	
4	2009	3,802,237,149	107,000	187,464,000	4.9%	3,614,773,149	85,000	255,000	670,140,000	19%	
5	2010	3,859,270,706	105,395	184,652,040	4.8%	3,674,618,666		255,000	670,140,000	18%	
6	2011	3,917,159,767	103,814	181,882,259	4.6%	3,735,277,508	100,000	355,000	932,940,000	25%	
7	2012	3,975,917,164	102,257	179,154,026	4.5%	3,796,763,138	100,000	455,000	1,195,740,000	31%	
8	2013	4,035,555,921	100,723	176,466,715	4.4%	3,859,089,206	75,000	530,000	1,392,840,000	36%	
9	2014	4,096,089,260	99,212	173,819,714	4.2%	3,922,269,545	80,000	610,000	1,603,080,000	41%	
10	2015	4,157,530,599	97,724	171,212,419	4.1%	3,986,318,180	80,000	690,000	1,813,320,000	45%	
11	2016	4,219,893,558	96,258	168,644,232	4.0%	4,051,249,325	80,000	770,000	2,023,560,000	50%	
12	2017	4,283,191,961	94,814	166,114,569	3.9%	4,117,077,392		770,000	2,023,560,000	49%	
13	2018	4,347,439,840	93,392	163,622,850	3.8%	4,183,816,990		770,000	2,023,560,000	48%	
14	2019	4,412,651,438	91,991	161,168,508	3.7%	4,251,482,930		770,000	2,023,560,000	48%	
15	2020	4,478,841,210	90,611	158,750,980	3.5%	4,320,090,230		770,000	2,023,560,000	47%	
16	2021	4,546,023,828	89,252	156,369,715	3.4%	4,389,654,112		770,000	2,023,560,000	46%	
17	2022	4,614,214,185	87,913	154,024,170	3.3%	4,460,190,016		770,000	2,023,560,000	45%	
18	2023	4,683,427,398	86,595	151,713,807	3.2%	4,531,713,591		770,000	2,023,560,000	45%	
19	2024	4,753,678,809	85,296	149,438,100	3.1%	4,604,240,709		770,000	2,023,560,000	44%	
20	2025	4,824,983,991	84,016	147,196,528	3.1%	4,677,787,463		770,000	2,023,560,000	43%	
		Demand Calculations							Efficiency Portfolio		
		CCSF electric 2000	5,748,000,000	kwh		Direct Access share	20%		EE cap. fact.	20%	
		growth rate (est. avg.)	1.5%			Direct Access demand	956,880,000	kwh	EE degrade	1.5% per year	
		CCSF electric 2008 (e)	6,285,111,881	kwh		CCA Potential	3,827,520,000	kwh			
		SFPUC Load (est. avg.)	110	mw		Opt Out est.	5%		Renewables		
		SFPUC demand (est.)	963,600,000	kwh		Net CCA 2008 est.	3,636,144,000	kwh	Avg. cap fact.	30%	
		Net PG&E territory	4,784,400,000	kwh							
		SFCCA plan	pg. 32 pdf file			Note: allocations for line losses will depend on siting of renewable and conventional facilities					

This Implementation Plan now provides that among suppliers, a bidding requirement shall be added that the 360 rollout must be online according to a competitively bid rollout schedule that is sufficiently rapid to pay back H Bonds within the term of the supply contract while also enabling the supplier to operate profitably. As the aggregate electric demand of San Francisco residents, businesses and government varies between 650 MW and 900 MW at any time (and anticipated CCA loads range from 290 MW to 800 MW), the 360 MW resource development grid upgrade that the City and County builds will deliver significant environmental and public health benefits, unprecedented since perhaps the construction of the City's water and sewer system a century ago, as well as benefits to regional PG&E grid reliability.

In particular, as the principal cause of the state's Energy Crisis was over-dependence on natural gas combustion for electricity generation, the City and County's 51% RPS and 360 MW portfolio rollout requirement will reduce dependence on this volatile, increasingly expensive commodity.

CCSF will also have to meet the CPUC's Resource Adequacy Requirements (RAR) associated with serving its customers. These rules apply to all electricity suppliers (large utilities, Electricity Service Providers, and CCAs also referred to collectively as Load Serving Entities or LSEs) and require operating and planning reserves of 15-17% in excess of load. In addition, Load Serving Entities are required to demonstrate compliance for the year-ahead's summer peak demand. Also under consideration are additional resource adequacy rules for LSEs serving specific resource constrained areas. San Francisco is currently considered a resource-constrained area by the California Independent System Operator, therefore any CCSF CCA might have to demonstrate specific in-city or at least Greater Bay Area electric resources to serve CCA customers. As San Francisco's CCA program focuses resources on local renewable resources, these rules should have a positive impact on San Francisco's CCA resource planning - and ultimately also favorable, and greener, generation rates for CCA customers. The City's chosen supplier will be required to provide for the CCA's resource adequacy requirements as required by the CPUC Decision D.05-10-042.

2.7.1 Consequences for PG&E Energy Efficiency Partnership and Other Programs Under CPUC

San Francisco declares its intent to apply to become an administrator of all electric energy efficiency funds collected from CCA customers pursuant to PUC 381.1 (a), or otherwise requests that the Commission now adopt a Decision allowing CCAs to collect their own PGC funds at the same minimum levels required of the utility (e.g. PG&E), exempting the participating CCA customers from paying into the PG&E PGC Fund, The San Francisco Department or the Environment has historically partnered with PG&E in implementing energy efficiency programs in the City and is currently in negotiations to continue this partnership through 2009. However, in D.05-01-055, the CPUC stated its intention to examine the question of the CCA role in Section 381 fund disbursement.

“At the same time we recognize that ultimately CCAs are appropriately independent agencies that should have considerable deference to use Section 381 Funds” (D.03-07-034), and have reserved broader issues about CCAs role and discretion for later determination.”

The CPUC indicated that it would consider redirecting CCA customer funds from PG&E PGC fund to the CCA if it wishes to administer them directly:

“Stated another way, we may revisit the question of whether CCA customers should be relieved of their responsibility for energy efficiency PGC and procurement surcharges if the CCA elects to take over these functions. Nothing in this decision prevents us from modifying the process for allocating PGC funds to CCAs in the future”

To ensure the maximum amount of resources are committed to local energy efficiency programs combined with CCA portfolio integration capabilities regarding energy efficiency investments and local control of ratepayer funds, the LAFCO, SFPUC and City Attorney shall engage the CPUC to reopen this issue. Upon a resolution of the Board of Supervisors, all PG&E Partnership contracts shall be terminated immediately

2.7.2 Major Consequences for PG&E 2007 - Procurement Contracts & Distribution Generation Interconnection and Distribution System Upgrades

The major consequences for PG&E resulting from this plan are that San Francisco is preparing to (1) make a binding commitment to provide commodity service to San Francisco procurement customers within the next year, (2) to request data and interconnection for hundreds of major solar photovoltaic and other renewable distributed generation north of the Jefferson Martin Substation over the next three to five years, (3) install 107 Megawatts of energy efficiency and conservation measures within the City, and (4) install a 150 MW wind farm, potentially using some PG&E transmission capacity. The 360 MW renewable rollout will mean approximately 211 MW of peak load removed from this location within five years, minus growth.

First, PG&E will no longer have to plan for or procure for loads associated with participating CCA customers in San Francisco. At CCSF's request PG&E provided the departments with 12-month energy consumption data and number of customers by rate class for the year 2003. CCSF estimates the following specific consequences for procurement based entirely on the data provided by PG&E.

CCSF anticipates that PG&E will have to prepare to transfer customers to the San Francisco CCA during 2007. As the CPUC's proceeding to set PG&E's CRS for 2007 is now ongoing, the LAFCO and City Attorney shall begin negotiation relative to making a Binding Commitment to receive customers from PG&E as early as 2007.

The potential amount of load and number of customer accounts that could be served by the CCA are shown below.¹⁹ Charts 1 and 2 below show the 2003 energy consumption and customer accounts by customer class data. Although the Residential Class alone comprises nearly 91% of all the potential CCA accounts in the City, it represents only 35% of total electricity sales. By contrast, Medium Commercial, Large Commercial and Large Commercial/Industrial accounts combined represent about 1.0% of the potential CCA's accounts, versus 52% of electricity sales.

Chart 1: 2003 Numbers of Accounts by Customer Class

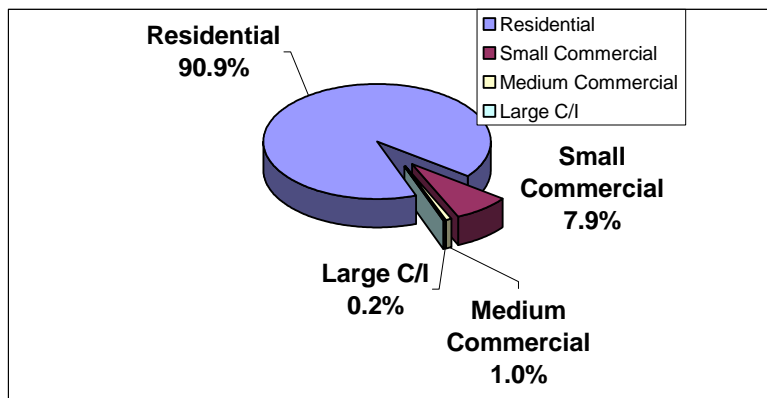
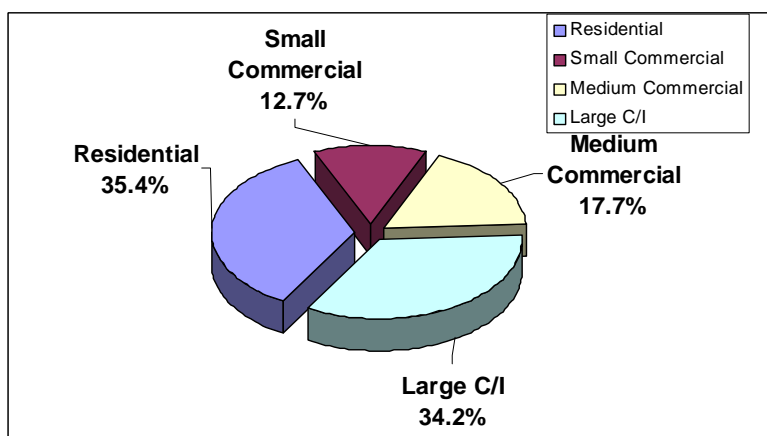


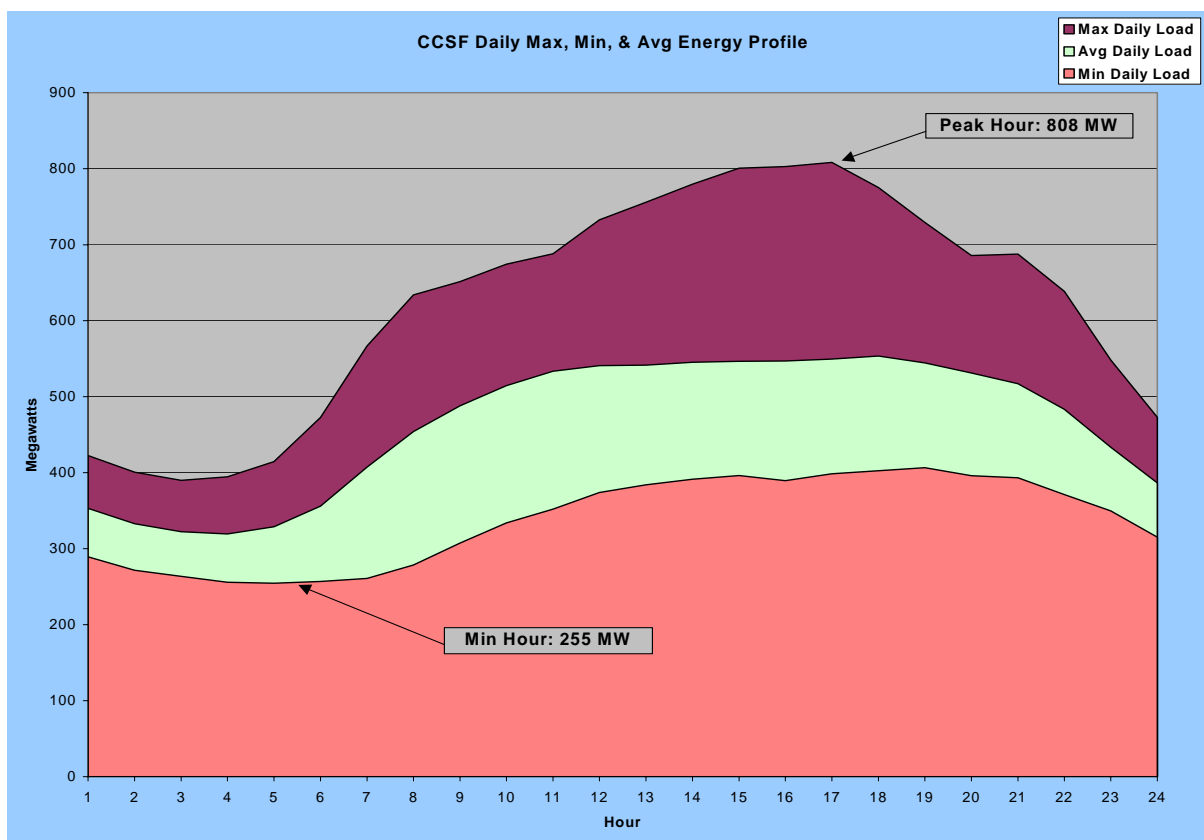
Chart 2: 2003 Energy Consumption by Customer Class



¹⁹To develop a load forecast for the CCA's potential customer base in 2006, CCSF utilized PG&E's system average growth rate of 1.65% as reported in its Long Term Procurement filing (R. 04-03-004) before the CPUC. Assuming that the number of customers will not vary significantly for CCSF a 0.5% growth rate was applied to the account numbers for all customer classes except Street Lighting and Traffic Controls, which may or may not be included in the CCA load.

Chart 3 shows CCSF's maximum, minimum, and average hourly energy usage for 2003. CCSF used PG&E's system average load profiles also known as dynamic and static load profiles as posted on their website to shape monthly energy usage data provided by rate schedule. The CCA's demand peaked at 808 MW in hour 17 (5 PM) and reaches its lowest point in hour 5 (5 AM). However, on average CCA's peak load was between 500-600 MW at 12 through 6 PM and its minimum load was just over 300 MW at 4 and 5 AM.

Chart 3: CCSF Daily Max, Min, and Avg. Energy Profile 2003



PG&E should prepare, at CCSF's cost, a special "CCA Interconnect" transaction to coordinate and schedule the CCA Supplier's installation and interconnect of the 360 MW rollout of the 211 MW peak shaving equipment under the SGIP and Million Solar Rooftops program. This program should interconnect one to three hundred large photovoltaic installations for on-site use, over-the-fence transactions, and islanding of a single building or groups of buildings where customers are prepared to pay the premiums required for islanding – or where public benefits such as Emergency Medical Response justify H Bond investment, in which case CCA customers as a whole may pay for and receive islanding services where feasible.

More detail on the timing and potential location CCSF's anticipated 360 MW rollout will be developed for the Program Basis Report, RFP, and finally within a successful contract with a bidder, in particular the potential development sites, including a 150MW wind farm which may or may not connect to PG&E transmission lines

The precise 360 rollout schedule will be established by the RFP and negotiation process, and finalized with the award of contract to a CCA supplier by ordinance, pursuant to AB117 . These may or may not be specified in CCSF's Binding Commitment to the CPUC to take customers, and as part of its demonstration of Resource Adequacy, as appropriate. Determinations on the number of facilities and criteria for site selection and approval will be made in the Program Basis Report completed by the LAFCO. Finally, PG&E should prepare a program of net metering for a limited number of sites, such as smaller sites on residential rooftops. As stated elsewhere, hosting solar photovoltaic facilities will involve a contractual agreement for lease, sale or services, including related energy efficiency services.

In particular an early assessment of potential sites for the five to fifteen other Distributed Generation facilities will be required in a blanket rollout permitting, site acquisition, and interconnect schedule so as determine and potentially minimize the interconnection costs of such sites starting in 2007 with physical interconnects needed for dozens of facilities physically connected to the PG&E grid, or another grid, per year - starting in 2008. The rate of rollout has not yet been determined but is expected to require three to five year's duration starting Fall 2007.

CCSF will also remove 107 MW of load north of the Jefferson Martin substation, starting in 2007 and concluding on the same 3-5 year approximate schedule, with the relative emphasis on either energy efficiency or conservation projects, depending in part on CCSF's ability to administer or directly collect its own energy efficiency Public Goods Surcharge funds, as well as the timing of the availability of those funds.

Specifically, at least 211 MW of renewable energy, conservation measures and load reductions will occur incrementally starting in Fall 2007 with SF CCA and SFCCA customer facilities requiring physical interconnects on a weekly basis. San Francisco will pay for the incremental cost of the preparation in order to install the 360 MW facility on a timely basis. As the CPUC has defined CCAs as captive utility customers for distribution services, the City needs PG&E's full cooperation in the coordination and planning of the CCA RPS portfolio compliance rollout in order to comply with California's RPS law and related CPUC RPS regulation. - PG&E can work with CCSF early to facilitate and work with the City on – namely interconnection of a large number –hundreds of solar installations as well as the interconnection of the 5-15 generators, in

city, whose size could vary between 5MW and 10MW and whose fuel source is assumed to be renewable.

2.7.3 Customer Reliability Increase Potential Through Solar Installations

San Francisco's 360 Megawatt rollout could offer blackout protection to CCA customers who need it for critical equipment, such as refrigeration systems at grocery stores – or HVAC and lighting in high rises.

The reliability of electric service to customers can be buttressed with a variety of approaches falling into two general categories: redundant sources and redundant paths to those sources.

The interstate transmission system has embraced both of these approaches for many years, interconnecting adjacent distributions systems to share generating sources in times of system stress with multiple interconnections. These multiple connections to multiple sources create the “network” we often refer to as the “grid.” Usually, this is a distinct architecture from the local distributions system, which is most often organized as a hierarchy of single-path, or “radial,” lines to end-users.

Electric power systems, both transmission and distribution, exist at multiple voltages, but in transmission systems almost all lines are interconnected and operated as a more-or-less integral whole. Some areas are, of course, integrated with greater capacity and complexity than others. The more densely integrated portions are identified and operated as a single jurisdiction, or “control area,” with the boundaries of control areas and interfaces between them defined along areas of weaker or more sparse interconnection.

Most of the reliability problems in an electric power system, and almost all of the power quality issues, arise from problems on the distribution system. The operation of circuit breakers, fuses, reclosers, and capacitor banks, the failure of lines, transformers, or insulators, or the improper operation of customer premises can all introduce serious power reliability and power quality issues that propagate throughout the distribution system.

A way to increase power reliability is through the use of multiple power sources, so that the average distance between sources and loads is decreased, with fewer opportunities for faults that, in the aggregate, can be expected to occur with some predictable frequency per mile of line.

With multiple power sources, the average number of faults on the electric system does not decrease, but the average number of customers affected by each such fault will tend to decrease. This is the fundamental case of “utility” distributed generation.

The extreme case of multiple power sources is to increase the number of power sources until it tends to approximate the number of loads—or, at least, the critical loads—and at the same time locate those power sources optimally so that the average distance between power sources and

loads (again, critical loads) tends to go to zero. This is the fundamental case of “on-site” distributed generation.

This on-site power can be designed in a number of configurations: stand-alone off-line power, utility-interconnected with on-site back-up, on-site power with utility back-up, utility power and on-site power operated in parallel, and load-partitioning distribution centers (similar to circuit breaker panels) in combination with any of the foregoing.

Power reliability can also be increased by installing multiple paths between power stations, whether generating plants or substations, and loads. This allows power to continue to flow from appropriate sources to critical loads even when one of those paths has been interrupted.

Utilities often establish multiple distribution lines (often called “spot” networks), sometimes from different substations, to major downtown business facilities, public safety facilities like hospitals, and government (especially military) facilities. Central business districts also often have networked distribution (often called “area networks”) with multiple primary distribution lines from multiple substations feeding multiple distribution transformers that feed multiple secondary distribution lines. In this way, there can be two or more interconnections between every combination of primary line in and secondary line out. Because of the reliability desired and the potential cost of controlling such a complex array of equipment, area networks are usually electrically protected with special, highly optimized, circuit breaker-like devices, called “network protectors,” that only allow power to flow from the primary line, through the transformers, to the secondary line, and never in the reverse direction. While this was an efficient way to protect such area networks in a period when no on-site power generation was ever encountered, these devices create very difficult environments for present-day placement of on-site power.

“Islanding,” or the separation of a portion of a utility company distribution line with two or more customer premises from the remainder of the utility electric system, where the separated line remains energized because at least one customer has active generation, has always been a source of concern among utility operators. As a “public” service, utility companies have some liability for the quality of the electric power delivered to customers’ premises. When a distribution line segment separates, but does not de-energize because one of the customers on that line segment has active generation, the utility no longer has any control over the quality of the power delivered to other customers on that separated segment. Utility linemen sent to repair such separated lines, customers inspecting their services, or members of the general public may be injured if they come in to contact with lines that they believe to be de-energized—but are not. Similarly, equipment may be damaged if served with voltages too low or too high from private generating equipment not monitored or controlled with the same precision as utility generation. Utility personnel almost universally react to the subject of “islanding” as a problem to be mitigated.

The fundamental distinction—from an engineering viewpoint—between utility system intentional islanding and simple premises on-line/off-line interconnection control, is the complexity of that automated decision-making, which is rooted in the number of interconnections to be managed simultaneously. Customer premises almost always have but a

single connection to the utility grid, so the problem is relatively trivial. Utility line segments that might be subject to islanding almost always have at least two customer premises, two interconnections to the remainder of the grid—and sometimes many more—and at least one generator, if not more. This problem tends to expand exponentially with the number of connections to manage, the number of separate loads to monitor for quality, and the number of generators to control.

Standards and equipment for "intentional islanding" are barely emerging, although they should be available in 3-5 years – well within the long-term planning framework of San Francisco's CCA program. As an "island" is, by definition, a piece of the utility distribution line (the "area electric power system", a public resource) that is separated from the rest of the utility grid, but energized by the DG, the utility usually takes the lead in prohibiting such use of their facilities in a manner that they do not control.

Portions of downtown San Francisco that have "secondary" distribution networks: a net of conductors so power flows any way it needs to on the net. There are in the downtown area two of these networks running parallel; buildings in these areas are connected to one network, and the high voltage transmission line coming up from the south into the city are connected to the other network. Multiple connections between these two grids help insure that no single failure creates a blackout in the downtown area.

Everywhere else in San Francisco, islanding of individual premises may be feasible where there is only one connection between premises and the distribution system. Therefore it may prove beneficial to the CCA in conjunction with its supplier to offer to assist CCA customers, as a premium service, the islanding opportunities.

2.7.4 Consequences for Physical In-City Load Reliability Impacts of San Francisco's Community Choice Aggregation Implementation Plan

San Francisco's need for capacity and power across the grid will be dramatically impacted by the 360 MW rollout San Francisco expects to not only exceed the RPS law, but will provide new green Megawatts and Negawatts to remove a significant portion of the community's aggregate distribution, substation and transmission load.

San Francisco will use revenue bonds and available CPUC and California Energy Commission (CEC) subsidies to finance the following required components of any qualifying supplier's CCA Portfolio.

2.7.4.1 107 MW Efficiency and Conservation Megawatt – 3 Year Build
Schedule Expected

San Francisco expects the following load reductions to be achieved within San Francisco's jurisdictional boundaries by its chosen supplier:

2008 29 MW
2009 34 MW
2010 44 MW
2010 TOTAL: 107 MW Load Removed, Option for More

This three-year schedule is an estimate. The actual roll-out schedule will appear in the City's Resource Adequacy Demonstration as a Load Serving Entity.

2.7.4.2 31 MW Solar Photovoltaic and Distributed Generation - 3 Year
Build Schedule Expected

San Francisco expects the following afternoon peak solar photovoltaic to be installed within its jurisdictional boundaries over the period:

2008 0 MW
2009 10 MW Online
2010 21 MW Online
2010 TOTAL: 31 MW Online, Option of More

This three year schedule is an estimate. The actual roll-out schedule will appear in the City's Resource Adequacy Demonstration as a Load Serving Entity.

2.7.4.3 72 Megawatts of Distributed Generation Such as Fuel Cells Expected
3 year Build Schedule

Depending on the availability of CEC and CPUC subsidies, San Francisco expects to issue revenue bonds to build five or fewer 15 MW or more renewable or hydrogen or hybrid powered distributed generation facilities (Assuming 20% Admin).

2008 15 MW
2009 40 MW
2010 17 MW
2010 Total: 72 MW Online with option for more

This three-year schedule is an estimate. The actual roll-out schedule will appear in the City's Resource Adequacy Demonstration as a Load Serving Entity.

2.7.5 Consequences for In-City or Out-of-City Physical Load Reliability Impacts
: 150 MW Wind Farm

CCSF expects the following capacity to be installed on Hetch Hetchy property or other properties in conjunction with the City's Chosen supplier or another entity, as determined by the outcome of its Request for Proposals to suppliers.:

2008 0 MW
2009 150 MW
2010 TOTAL: 150 MW Online, Option of More

This three-year schedule is an estimate. The actual roll-out schedule will appear in the City's Resource Adequacy Demonstration as a Load Serving Entity.

2.7.6 Consequences for Ratepayer Risk

2.7.6.1 Natural Gas Risk

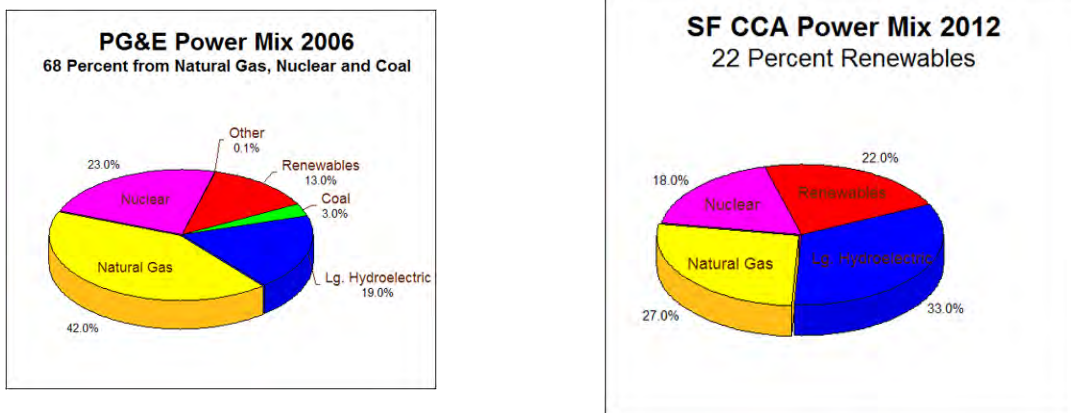
Perhaps the largest economic risk for electricity prices is the price of natural gas. The degree of this risk has been recently highlighted by dramatic increases in prices that were largely unanticipated. On top of the price increases, natural gas prices have become increasingly volatile. This volatility has a direct impact on the cost of natural gas for electric generators. In order to hedge against future price increases, gas generators purchase natural gas commodity futures. The price of these futures contracts are based upon the anticipated future cost of natural gas, plus a premium for risk. Because volatility increases perceived risk, it also directly increases the cost of natural gas futures contracts. This, in turn, raises the cost of electricity. PG&E is particularly vulnerable to this price risk, as 42 percent of its electricity supply comes from generators that use natural gas as fuel.

A major goal of San Francisco's CCA will be to reduce long-term exposure to fossil fuel supply and prices. This will be accomplished with several different tools. Building up City-owned renewable generation facilities will lock in the cost of a block of electricity that is largely independent of fuel costs. Long-term contract purchases of renewable electricity will supplement the City-owned power supply. Long-term contracts can also lock in prices that are likely to be similar to, or lower than, projected future cost of electricity generated using natural gas. A third tool will be energy efficiency and conservation, since cutting electricity consumption eliminates risk, while more efficient gas-fired generation will reduce the amount of natural gas fuel that must be purchased. This also cuts the generation cost of electricity. A further analysis of how renewable resources such as wind power are a cost effective hedge on increasingly high and volatile natural gas prices is discussed in Appendix K.

2.7.6.2 Building Renewables: Scenarios for Achieving 51% RPS by 2017

Whereas PG&E is subject to a 20% by 2017 RPS requirement under state law, CCSF adopts a 51% RPS by 2017. San Francisco's CCA plans on reducing its own, and thus California's, reliance on fossil fuels by building new renewable generation and energy efficiency infrastructure. By building up 20 percent renewables by 2010, and 51 percent renewables by 2017, the reliance on fossil fuel will fall far below the rest of the state. The following charts illustrate an example of this shift might occur, depending on the supplier's proposal. Under one scenario, the dirtiest power source, coal, could be eliminated, while natural gas and nuclear power are cut back.

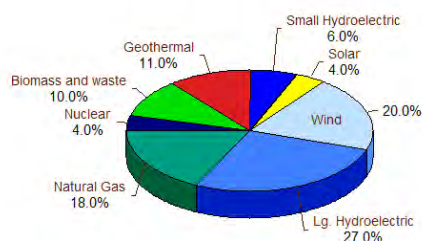
[Exhibit II-10: Scenario Visual: CCA Compared (Source: Local Power) to PG&E 2012 (Source PG&E)]



By 2017, the CCA plans to shift to at least 51 percent renewables including solar photovoltaics and energy efficiency. The following chart shows how the new portfolio might look, depending on what sort of strategy a competitive supplier proposes to have dramatically transformed energy use in San Francisco after 2017:

CCA portfolio 2020, Source: Local Power, 2006

SF CCA Power Mix 2020
51 Percent Renewables



Under this scenario, natural gas dependency has fallen in significance from PG&E's 42 percent to 18 percent, a normal role for this fuel in the US. Unlike the US, San Francisco CCA does not rely upon any coal to supply its power. The CCA has also cut back on nuclear energy to a very small share that is mostly what has been mixed into the electric grid, and is obtained incidentally through market purchases.

An assortment of renewables replaces the older, polluting fuels. Large hydroelectricity has been scaled back since 2012 to lower exposure to large variation in output. Affordable wind power is meeting 20 percent of the City's needs, a level most experts consider maximum for a stable electric grid. Geothermal, an abundant resource in California, is being tapped from the Counties north of the Bay Area or from the high Sierras. These base-load geothermal plants provide the highest reliability of any energy source, and use environmentally friendly closed-loop binary technology that eliminates toxic mineral emissions and helps preserve the resource.

Solar energy is growing larger as nuclear power shrinks, up to two percent is photovoltaics and the remainder solar thermal cogeneration. The biomass plants convert the large organic waste resource in the Central Valley into energy, while reducing air pollution from agricultural burning and methane emissions from dairy and other animal farms. This creates significant mitigation for the City's greenhouse gas emissions. Some of the bio-fuel is converted into hydrogen or ethanol for use as clean burning fuel in the City. Hydrogen is also being produced from renewable solar energy systems, and micro-organic processing plants, as an energy storage system to improve reliability of the local electrical system and complement the intermittent energy production from some renewable sources.

Critical to making the intermittent renewables work is immediately dispatchable hydroelectric power. As the winds rise and fall, and the sun passes behind a hill or a cloud, signals are immediately sent in real time to the large hydroelectric facilities to compensate for the variation in output from the renewable resources. While the hydroelectric plants stabilize the renewables, the renewables allow the precious water resources to be conserved when the wind and solar energy systems are producing. The integration of the different pieces of the electrical system have been transformed to support a renewable energy system that is in many ways more

complex, dynamic and interactive than the big base load war-horse generators that formerly turned day and night without pause or variation to provide most of the power supply.

The renewables provide the City with stable energy prices and a supply of clean energy. This benefits not only the CCA ratepayers, but also those who remained with PG&E. CCA renewable capacity frees up other renewable assets by reducing the strain on the grid and by handing back to PG&E the part of the renewable portfolio that the utility had procured or contracted for. But other, more concrete, benefits are given both to the CCA and to all ratepayers in the region.

2.7.6.3 System and Market Risk Benefits

A major part of the CCA's clean energy infrastructure will be built in the City. Much of this capacity will be coordinated to remove the City's peak load, but a significant fraction will also address the peak needs of Northern California. In particular, the photovoltaic component will produce maximally during the summer peaks when the City is not at its primary peak.

While much of California is consuming electricity for air conditioning the City is enjoying relatively mild summer temperatures. In this way the photovoltaic infrastructure may in fact provide system-wide benefits to PG&E's customers and all electric customers tied to the CA ISO operated grid that are as significant as benefits to the City itself. To be sure, the City will receive the ratepayer benefits of peak cost electricity, but the higher cost is itself largely a function of demand that exists elsewhere, and for which City ratepayers must pay even though their contribution to the summer peak is modest. It is recognized photovoltaic installations remove the most important part of the peak, that part which occurs between roughly noon and 6 p.m. The city has the advantage of numbers over individual peaking solar facilities, which usually only remove about four hours worth at high capacity. Hundreds of photovoltaic systems, however, will have a variety of orientations that will spread more its benefit over the entire peak period.

Supporting the photovoltaics will be other local efficiency, conservation and distributed renewable facilities that will fill in much of the further peak. This will be done out of self-interest of individual customers, to avoid high time of use rates, and for the self-interest of the CCA, to avoid expensive wholesale spot market purchases during peak hours. The benefits to the grid are specifically designed to include lower use of transmission facilities, avoided new peak generation capacity, and avoided upgrades to the statewide transmission system to send this power to the City.

The CCA's clean energy system will also avoid much of the regulatory and public safety risks associated with transmission and generation facilities.

In addition to the infrastructure benefits, there are also benefits in real time from reduced demand for fuel, reduced congestion of the transmission, reduced reliance on imported energy supplies, as well as avoiding the use of inefficient and polluting power sources. Electric companies pay the additional costs through grid congestion charges, NOx pollution credit payments, and higher fuel expense to run high heat rate power plants. Higher demand for fuel, particularly natural gas, also risks elevating the market price of the fuel. To insure against natural gas price spikes is expensive, as has already been shown. All these risks and costs are added to the ratepayer's bill.

By reducing demand on inefficient and polluting power plants, relieving congested transmission systems, and improving system security, benefits accrue to all ratepayers through reduced cost of these resources, particularly during times of market and grid system stress.

2.7.6.4 Externality Risks and Benefits

In addition to the risks that are ordinarily billed to energy customers, there are social and environmental impacts that are not always part of the electric bill. There is a gradual shift in public policy to impose these “external costs” onto industry, with the result that commodity and service prices, such as PG&E’s electric rates, can be impacted. The shift to accounting for these real costs and risks, in addition to traditional economic costs, is referred to as “triple bottom line accounting”. The current social, environmental and political climate is making these costs and risks more real every day, to the extent that businesses and consumers can no longer ignore them.

An example of an “externality” that is already monetized is the requirement for purchasing emission credits for Nitrous Oxides (NOx). These emissions are capped at certain levels. If the levels are exceeded, then an offsetting credit must be purchased from a facility that emits less than the standard. So long as the cap is not exceeded, there is no cost. Thus, reducing demand for electricity sources that emit a pollutant that is under a “cap and trade” system has an amplified value. Even a small reduction in demand will reduce the extra margin that pushes facilities to exceed the cap and incur cost.

During times of peak demand it is often the last few megawatts of demand that pushes the system into emergency mode, and that brings on-line the dirtiest power plants. Such plants are often so polluting that they are only allowed to operate a few hours a year. This elevates the cost to run the plant dramatically. So, in addition to the credit payment, regulatory restriction can also impose a cost. Failure to take aging power plants off line carries the risk that an increasing number of plants will operate under such constraints.

There is also a move to expand the cap and trade system to include carbon. This is already in force in nations that are signatories to the Kyoto Treaty. The “cap and trade system” imposes a cost on excess over the cap that would ultimately be charged to customers. Another risk from carbon emissions is the possibility of a carbon tax, which has been discussed for a number of years. The increased concern for and certainty about global warming increases the chance of such a measure being imposed. Reducing regional reliance on the dirtiest fossil fuel power plants, a prime target for carbon regulation, will reduce the risk of such future costs being imposed on all customers participating in San Francisco’s CCA and H Bond program, including:

1. Government regulation limiting operation or requiring repairs
2. Fines
3. Cap and trade systems
4. Carbon taxes
5. Public pressure to close or deny permitting to a facility

6. Regulatory delay or rejection of plans or facilities
7. Lawsuits for damage to the environment or public health
8. Environmental cleanup or hazardous waste disposal requirements
9. Reduced employee morale or customer satisfaction

The European Union has financed a project, undertaken under the name of ExtenE, to quantify at least the environmental cost of the use of various fuels. The result is a table of costs for each fuel that will be used to guide policy and evaluate projects under the legal framework of the EU. These costs include the effect of a range of pollutants on the environment and are the first such real inventory of external costs to achieve status under international law. Thus the stage has been set to move to the next level in assessing environmental costs.

Development of local, clean energy sources is the best way to avoid the risk to society, the environment, and the ratepayer.

2.7.7 Consequences for Independent System Operator (ISO) Reliability

- Substation Load Dropped (minus growth) after 3 years.
- This three-year schedule is an estimate at this time, as CCSF has not yet commenced negotiation with prospective suppliers. The actual roll-out schedule may serve to assist the City's Resource Adequacy Demonstration as a Load Serving Entity based on the results of negotiations with the supplier.
- San Francisco's Implementation Plan will reduce 211 Megawatts of peak load north of the PG&E Martin substation on the South Peninsula, meaning physical load will be reduced, for decades into the future, on the ISO's transmission grid, making this capacity available to South Peninsula residents, businesses and institutions, and significantly reducing the need for future transmission upgrades that all South Peninsula communities.

Hetch Hetchy would benefit disproportionately from an addition of wind capacity physically close to its hydro resource in order to reduce need for hydro throughputs and develop RPS compliant renewable energy resources along its transmission asset, as determined by the San Francisco Public Utilities Commission and Board of Supervisors, and consistent with the Raker Act.

CCSF may elect to site its 150 MW of wind capacity on or within reach of Hetch Hetchy properties, and may require transmission capacity on the existing Hetch Hetchy property, requiring access to ISO transmission capacity, and transmission through to PG&E's distribution system to CCA customers. Sites on the Peninsula, Treasure Island, or other Bay Area locations may also be selected further detail on a potential location of this portfolio component will be disclosed in the Program Basis Report, RFP, Demonstration of Resource Adequacy and Binding Commitment to the CPUC.

The City and County remains interested in acquisition of PG&E's distribution system. In the event that voters approve an initiative creating a financing authority at a future date to pay for such an acquisition, the City and County would have to undertake a transition from CCA service to wholesale service as a municipal utility or other public power entity, but will also honor all contracts and bond covenants with its chosen Supplier and other parties. All renewable energy and conservation facilities financed by tax-exempt H bonds shall revert to City ownership at the retirement of the Revenue bonds that financed the facilities. All facilities financed by taxable H Bonds shall revert to customer ownership at the retirement of the Revenue bonds that financed the facilities.

3. LEGAL AUTHORITY SUMMARY

3.1 San Francisco Community Choice Aggregation Program Authority

The legal authority for the City and County of San Francisco to implement a Community Choice Aggregation Program (CCA) is provided in the following statutes, ordinances, and CPUC decisions:

SECTION	ITEM	DATE
1.1	San Francisco voter approval of Proposition H, Charter Section 9.107.8	November 6, 2001
1.2	California Assembly Bill 117	September 24, 2002
1.3	City and County of San Francisco Ordinance No. 86-04 (Provided in Attachment 1)	May 18, 2004
1.4	Resolution 757-04 creating a Citizen's Advisory Task Force regarding the design and implementation of a Community Choice Aggregation Program in accordance with Ordinance 86-04	December 8, 2004
1.5	California Public Utilities Commission of the State of California Decision 04-12-046	December 16, 2004

3.1.1 Proposition H, San Francisco Charter Section 9.107.8

In the General Municipal Election of November 6, 2001, San Francisco voters approved Proposition H, authorizing the Board of Supervisors to provide for the issuance of Proposition H revenue bonds, without further voter approval, for the purpose of financing or refinancing the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation.

3.1.2 California Assembly Bill 117

California Assembly Bill 117 (AB 117) authorizes the creation of Community Choice Aggregation (CCA), describes essential CCA program elements, requires the state's utilities to provide certain services, and establishes methods to protect existing utility customers from liabilities that they might otherwise incur when a portion of the utility's customers transfer their energy services to a CCA.

AB 117 provides that a CCA must develop an implementation plan detailing the processes and consequences of aggregation. The implementation plan, and any subsequent changes to it, shall be considered and adopted at a duly noticed public hearing. In order to determine the cost-

recovery mechanism to be imposed on the CCA that shall be paid by the CCA customers to prevent shifting of costs, the CCA shall file the Implementation Plan with the California Public Utilities Commission, and provide any other information requested by the Commission that the Commission determines is necessary to develop the cost-recovery mechanism.

A CCA establishing electrical load aggregation is also required to prepare a statement of intent with the implementation plan.

3.1.3 San Francisco Ordinance No. 86-04

San Francisco Ordinance No. 86-04 established a Community Choice Aggregation Program in accordance with California Public Utilities Code §§ 218.3, 331.1, 366, 366.2, 381.1, and 394.25, and required that bid requirements for the City and County of San Francisco's Community Choice Aggregation Program shall to exceed the goals for energy efficiency, renewable energy, peak shaving and load management provided for in the City's Electricity Resource Plan, adopted in December of 2002.

The San Francisco Electricity Resource Plan of December 2002 called for the development by 2012 of:

Load Reduction Through Electricity Load Management And Efficiency Measures	107 MW
In-City Solar Energy	31 MW
Small Scale Distributed Generation	72 MW
New Wind Energy	150 MW

In March of 2002, San Francisco adopted Resolution 158-02 directing the city to commit to a greenhouse gas pollution reduction of 20% below 1990 levels by the year 2012.

San Francisco Ordinance No. 86-04 provides that the Board of Supervisors may adopt or amend a Draft Implementation Plan at a duly noticed public hearing by ordinance. The Ordinance sets forth a number of elements (consistent with AB 117's requirements for CCA Implementation Plans) that must be addressed in the Implementation Plan.

This Implementation Plan has been prepared in full compliance with the requirements set forth in ordinance 86-04 . A matrix of the local ordinance and state legal requirements, noting the section of the plan in which they are addressed, is provided in Appendix E. The proposed statutory compliant Implementation Plan is provided as Appendix A.

3.1.4 San Francisco Resolution 757-04 Citizen's Advisory Task Force

Resolution 757-04 of December 8, 2004 authorized the formation of a seven member Community Choice Aggregation Citizen's Advisory Task Force in accordance with Ordinance 86-04 to advise the City on 1) the goals and preparation of a CCA Implementation Plan, 2) the use of Proposition H Bonds to accelerate the use of renewable energy, conservation and energy efficiency in the CCA program, 3) the requirements of the CCA bid solicitation process, and 4) the evaluation of bids.

3.1.5 California Public Utilities Commission Decision 04-12-046

As a part of the CCA Rulemaking 03-10-003, the California Public Utilities Commission of the State of California issued Decision 04-12-046 of December 16, 2004, which adopted the following:

- Department of Water Resources' (DWR) methodology for estimating the cost recovery surcharge (CRS), which will allow the utilities to recover from CCAs the costs of DWR bonds and contracts, utility power procurement contracts and other items in a way that remaining bundled utility customers are indifferent to the CCA program
- A temporary CRS in the amount of \$.020/kWh, which will be trued up in 18 months or sooner, if final utility estimates of CRS are 30% lower or higher than \$.020/kWh, and thereafter will be trued up annually
- Principles for setting prices for utility services offered to CCAs
- Ratemaking and cost allocation principles for utility services offered to CCAs, implementation costs and the CRS
- A method to allocate amounts related to the subsidy for baseline customers
- Requirements for and conditions under which CCAs can acquire customer information from utilities needed to manage energy procurement by CCAs
- Application of AB 117 as it relates to CCA program phase-ins, boundary metering and the use of CCA-specific load profiles

3.1.6 California Public Utilities Commission D. 05-12-041 adopted further CCA program requirements as follows: (Amend D.06-02-006)

-
- The limits of CPUC Commission jurisdiction over CCAs and CCA programs.
- "Vintaging" the Cost Responsibility Surcharge (CRS) - a way to calculate the CRS for each generation of CCA in a way that recovers costs incurred on behalf of the CCA's customers but not more, also known as "vintaging." adopting a calculation for each vintage of the CRS does not permit the utilities to restrict a CCA's option to phase-in service to customer groups;

- The CCA's notification to the utility of its intent to serve customers. Here the CPUC adopted an "open season" approach that provides another way of notifying the utility of the CCA's intent to make a binding commitment to serve customers intent to purchase power for local customers and committing to relieving the utility and its remaining ratepayers of liability for future power costs. In this way the CCA can reduce its CRS, under which CCAs must make a binding commitment to be assured that the utility will stop purchasing power on behalf of its customers, that the utility may not transfer its liability for load forecasting to the CCA and that the utilities are required to work cooperatively with CCAs to minimize stranded power purchase liabilities, using a collaborative process for refining departing load forecasts;
- The regulatory process for considering CCA implementation plans and registration, which acknowledges that AB 117 does not provide CPUC with authority to approve or reject a CCA's implementation plan or to decertify a CCA but to assure that the CCA's plans and program elements are consistent with utility tariffs and consistent with Commission rules designed to protect customers, under a simple procedure for the filing of an implementation plan and a method of facilitating disputes between the utility and a CCA;
- Customer protections, including how to treat service termination, partial payments and deposits, and customer notifications;
- Implementation rules and utility services to CCAs, under policies and rules for customer enrollment, scheduling coordination, call center operations, boundary meters, and customer switching,
- Service fees for utility services to CCAs for such activities as opt-out processing, customer transfers of service, billing services, customer contacts, data processing and management, and confirmation letters to customers, and cost-based rates for services that impose costs on utilities that would not otherwise occur and which are not otherwise being recovered;
- Ratemaking for the CARE program to ensure that CCA customers should continue to receive the benefits of the CARE program and establish accounting for these subsidies;
- Transferring application of Renewable Portfolio Standard (RPS) to Rulemaking (R.) 04-04-026 on how to apply the RPS to CCAs.

4. CCA PROGRAM SCOPE AND BUDGETS

4.1 Overall Program Schedule

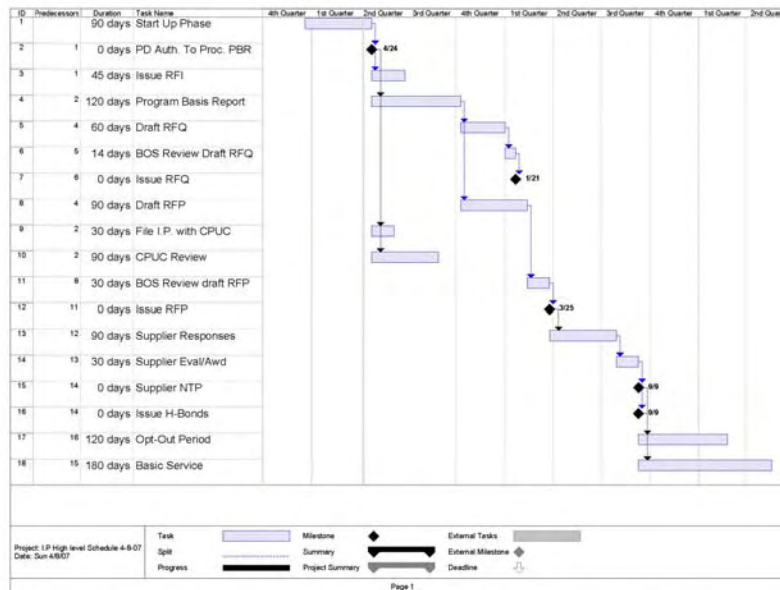
The CCA Program is defined in five major phases:

- Start-Up
- Program Development
- Procurement
- Implementation
- Operations and Maintenance

These phases are subsequently addressed in detail in Section 5 of this Implementation Plan.

Exhibit 4-1 summarizes the current projected timeline and major activities for the CCA program. The timeline begins with the approval of the CCA budget for FY 2006-2007 last summer and the adoption by the Board of Supervisors of this Implementation Plan - and includes all phases of CCA program development through the commencement of power service and completion of the penalty free opt-out period by the CCA. The length of the 360 MW rollout and Operations and Maintenance phases are open items that will depend upon decisions made during the Program Definition Phase and reported in the Program Basis Report development process covered in Chapter 5.

Exhibit 4-1 Projected CCA Program Implementation Schedule



The schedule above represents the City's best estimate for CCA implementation if continued decision-making progress is made on various aspects of program development. The timeline assumes that the City will issue a Request for Information/Request for Qualifications (RFI/RFQ) to receive additional input regarding the City's CCA plans from market participants and San Francisco stakeholders broadly. Responses from the RFI/RFQ may be incorporated into the CPUC CCA Implementation Plan Compliance document, as described above, as amendments approved by the Board of Supervisors.

The City has been engaged in low-level outreach to various potential CCA customers e.g. Building Owners and Managers Association (BOMA), to inform them of the City's plans to implement CCA. This timeline assumes that this kind of low-level, low-cost outreach will continue until the City signs a contract with a supplier to serve the CCA program and prepares commencement of a mass communications program. CCA regulatory activities are expected to continue to ensure that rules regarding various programs and requirements at the CPUC fairly address the unique circumstances of CCA.

The City may elect to submit its CPUC CCA Implementation Plan Compliance document to the CPUC prior to the issuance of an RFP for a supplier. However, in D.05-12-041 the CPUC articulated that the submittal of implementation plans by prospective CCAs shall not trigger automatic changes to utility power purchasing. The submittal of an Implementation Plan may have the effect of changing the utility's load forecasts, but the CPUC has agreed with the utilities that it should not automatically do so. Therefore the submission of an implementation plan does not by law bind a city or county to provide CCA service and the CPUC has stated that it should not automatically change a utility's procurement responsibilities or approach.²⁰

If the City submits this Compliance document to the CPUC prior to acquiring a supplier, it may be able to update the document with the CPUC after it has signed a contract with a supplier. If the Implementation Plan is submitted to the CPUC prior to securing a contract with a supplier, the City runs the risk of withdrawing the Implementation Plan either due to insufficient response to its RFP or for major revisions as a result of new information received through negotiations with its supplier. Alternatively, the City may wait until after it has closed its solicitation or signed a contract with a supplier to formally submit its Implementation Plan to the CPUC. However, the timing of the submission of this Implementation Plan to the CPUC with regard to the signing of a contract with a supplier should have no bearing on the ultimate timing of CCA service commencement.

The City's proposed schedule estimates that the City could, depending on the nature and degree of responses to its RFP, sign a contract with a supplier in late 2007. Concurrent with negotiations with a supplier, the schedule proposes that the LAFCO and SFPUC consider engagement of short-term consultant and other required services, and/or hiring of additional CCA staff, including communications staff, marketing/outreach staff, and customer service personnel. However, major hiring of new staff to handle CCA implementation and operations will not occur until the City has a final contract with a supplier. Communications

²⁰ See discussion in D.05-12-041, page 31-32.

personnel will manage an aggressive mass communications campaign intended to inform San Francisco residential and business customers of the CCA program and encourage high levels of San Francisco ratepayer participation. The City projects that CCA service commencement could occur, again as long as there are no major delays, and a RFP is issued, in mid 2008.

4.2 Coordinating CCA Implementation with PG&E Resource Planning

CPUC rulemaking proceedings may affect the schedule of CCA implementation and influence CCA program costs in various ways. One specific concern is the timing of CCA implementation in relation to PG&E's new resource procurement schedule. The CPUC has established a policy, consistent with provisions of AB 117, requiring CCA customers to keep non-CCA utility customers financially "indifferent" to the departure of CCA load from the utility's power procurement requirements. PG&E determines its long-term resource needs including forecasts of CCA load departure in its Long-Term Procurement Plan filed in the CPUC Long-Term Procurement Proceeding (get docket number). PG&E has previously filed Long Term Procurement plans anticipating that a certain percentage of its load will depart to CCA service. We anticipate it will continue to reflect such expectations in its load forecasts. In recent Long-Term Procurement Plan filings PG&E has included load forecasts that anticipate load loss to CCA. As CCSF continues with its implementation of CCA it should maintain a presence in to ensure that load loss to CCA continues to be part of the PG&E's load forecasts.

Retail end-use customers receiving power procurement services from a CCA are required to reimburse the incumbent electric utility (PG&E in San Francisco's case) that previously served the CCA customers for: (1) the utility's "unrecovered past undercollections" for electricity purchases, including financing costs, attributable to the customer that the CPUC has lawfully determined are recoverable in rates; and (2) any additional costs the utility has incurred on behalf of the departing customer that were recoverable in CPUC approved rates equal to the "estimated net unavoidable electricity purchase contract costs", as determined by the CPUC, for the period up to the commencement of CCA electric procurement services. In other words, the costs that PG&E incurs on behalf of CCSF's CCA customers prior to establishment of the CCA program shall not be "shifted" to non-CCA PG&E electric customers. CCA customers will have to compensate the utility for the utility's "stranded costs", or the costs they cannot recover by reselling power procured on behalf of CCA customers. These costs make up the Cost Responsibility Surcharge that CCA customers will have to pay as an additional line item on their bill. The CPUC CRS proceeding, R.02-01-011 is addressing the calculation of the costs that make up the CRS for Direct Access customers, and by extension CCA customers.

In order to effectively coordinate resource-planning efforts and reduce unnecessary costs for both CCAs and utilities, the CPUC developed a voluntary "Open Season" tariff that allows CCAs to make binding and advance commitments to provide service. In D.05-12-041 the CPUC determined that unless a CCA participates in a voluntary Open Season and submits a "Binding Notice of Intent" to the CPUC and the appropriate utility to initiate a CCA program, the CCA is required to reimburse the utility for the net unavoidable stranded costs the utility incurred as a result of the CCA's load departure up until the commencement of CCA service. If CCSF participates in the Open Season process, and follows through with its commitment to commence service on the date provided in its Binding Notice of Intent, it will receive a "vintage" CRS

associated with the year it submitted its Notice of Intent and not one associated with the year it actually commenced service. The benefit of having an earlier vintage on the CRS may be to reduce the total CRS obligation of CCSF's CCA customers by providing the utility with advance warning of CCA service commencement.

If the CCA is to participate in the Open Season process it must submit its Binding Notice of Intent during the "Open Season" period which commences in January and runs through March of each year to coincide with the resource adequacy process. It is important to note though that failure on the part of the CCA to commence on the date provided in the Binding Notice of Intent will make the City liable for the net incremental costs associated with the utility continuing to provide service beyond the date committed to through the Open Season process. Outside of the Open Season, it may be possible for the CCA to negotiate an alternate "Binding Commitment" to a commencement date for CCA service, however this would be outside the Commission approved "Open Season" tariff and PG&E may include additional requirements. The CRS proceeding for 2007 will be decided in 2006 and is the key forum in which to coordinate a Binding Commitment for CCSF to assume responsibility for customers, and this Plan provides that CCSF should be ready to receive transfer of customers from PG&E starting in 2007. This plan recommends that the City delay deciding on whether to engage in the Open-Season until a CCA supply contract negotiation is underway so as to determine, at that time, whether the possible gains from the Open-Season or any other kind of pre-contract binding commitment is worth the risk.

CRS rules may be impacted by CPUC R.02-01-011. The PG&E Revenue Allocation and Rate Design for 2006-2009 was approved in December 2005. The Resource Adequacy Requirements are set in CPUC D.05-10-042, and Local Area Reliability will be addressed by June, 2006.

4.3 Expenditure Profile

As illustrated below, the expected expenditures vary substantially throughout the program implementation phases. The expenditures represented in this exhibit relate to the start-up of the overall CCA program and initial program implementation. the purpose of the exhibit is simply to provide a qualitative picture of the relative expenditure, illustrated by phase. The major internal City CCA costs occur during the initial program implementation phase due to the communication program costs and opt-out processing directed at all existing PG&E and Direct Access customers in the City. However there will be ongoing CCA program costs for communications, opt-out processing for new customers, and billing costs payable to PG&E.

Exhibit 4-2

2006-2007 Budget.....	5.25 M
Available.....	2.05M
CCA Reserve	\$3.2M
2007-08	anticipated \$5.2M ²¹
2008-9 staffing.....	anticipated \$4.65M.²²

During the start-up, program development and procurement phases, the SFPUC and SFE may need to hire additional staff dedicated to the implementation of CCA. The hiring of this staff with specific expertise drives initial program expenditures. As the program moves into the supplier implementation phase, the capital expenditures on renewable technology and the supplier's own design and build resources drive total expenditures. The LAFCO will need to perform a detailed cash flow analysis in conjunction with the H Bond underwriter to appropriately match the bond revenues to the expenditure and repayment profiles. A detailed budget is provided in Appendix B.

CCA budget and staffing levels for the fiscal years 2007-2009 depend in part on a successful and timely contract negotiation with a winning bidder to the CCA RFP. The time-line for implementation is based on a smooth progression in City decision-making by City officials at the Mayors office, the BOS, and the SFPUC, as well as no surprises or delays at the CPUC or the signing of the service agreement with PG&E. Two sets of major expenditures will be incurred in these fiscal years. The first is City CCA staffing which will begin to considerably expand once a contract with a CCA supplier is reasonably assured – however once the CCA is fully operational there should be a substantial decrease in CCA consulting budgets and some decrease in staffing. The second set of major expenditures will be operational expenses that are first related to CCA Communication program costs and the first major opt-out processing of CCA customers, and secondly to the on-going billing, metering, and routine opt-out processing of CCA customers.

This plan also recommends that, as part of the RFI inquiry and subsequent RFP requirements, that the CCA supplier bids shall propose a quarterly system to compensate the City for ongoing staffing and operational costs once CCA service commences, making the program self-sustaining from a cost perspective.

4.4 Program Funding and Budget

The City and County's CCA program will be self-funded, meaning the total cost of preparing, implementing and operating the program is intended to be recovered through the rates charged to CCA customers, however some early staffing and expense costs of CCA that have already been incurred, and that will be incurred in FY 2006-07 are unlikely to be reimbursed in CCA rates.

²¹ For communications, opt-out processing, and assuming progress RFP 50% of the staffing cost will occur in 06-07 at \$2.28 million.

²² \$5.3 million minus \$750,000 upgrades to the customer call center.

The bulk of program costs will be included, and thus reflected, in the rates charged by the CCA supplier (or absorbed by the supplier as a cost of investing in the CCA business in San Francisco). This will be accomplished on an ongoing basis, through an allocation of CCA monthly revenues to cover ongoing City costs, within certain limits established in the contract between CCSF and its CCA supplier. Startup costs have already been may be drawn from the SFPUC's MECA Fund however the major Program development costs – particularly the mass communications costs and opt-out processing costs will be replenished from the CCA's retail sales revenue and some staffing costs could be replenished from H Bond reimbursement, or from a combination of both. It will be the supplier's responsibility to ensure that it is charging the proper rates required to recover the CCA's total costs including debt payments on the revenue bonds.

4.4.1 Funding the 360 MW "Roll-Out"

This Implementation Plan establishes an aggressive build-out of new solar, distributed generation, energy efficiency and conservation technologies throughout the City. This Implementation Plan outlines the City and County's intention to administer the Public Goods Charge funds for local energy efficiency programs. This Implementation Plan specifies a particular model of CCA based on the use of a generic municipal revenue bond authority, the Prop H charter authority (H Bonds) to finance a three- to five-year Phase I rollout of 360 Megawatts of solar, bulk wind, distributed generation, energy conservation and energy efficiency.

There remains significant interest within the City and County regarding acquisition of PG&E's distribution system. In the event that voters approve an initiative creating a financing authority at a future date to pay for such an acquisition, the City and County will transition from CCA service to service as a municipal utility or other public power entity, but will also honor all contracts and bond covenants with its chosen Supplier and other parties.

4.4.2 Proposition H Revenue Bonds as a Funding Source for the 360 MW Resource Portfolio Component

As provided by Ordinance 86-04, the Proposition H revenue bonds may be used to finance the design and construction of the renewable power generation infrastructure component of the CCA Program. The revenue bonds will be repaid through the rates developed by the CCA's suppliers established by contract. .

The CCSF CCA Ordinance required the examination of using H Bonds as a vehicle to augment CCA by providing for financing of renewable energy and conservation projects. Section 3(A)(9) requires qualifying bidders to recommend a contract period to provide a reasonable repayment schedule for H Bond debt. Section 4(D) requires that "(t)he RFP shall require that bids by prospective Suppliers shall include a proposed rate design, with all costs and profits associated with providing the various components of its proposed service package, including the costs of designing, building, operating and maintaining all renewable energy, conservation and energy installations, as well as any capital, insurance and other costs associated with fulfilling the

commitments made in the bid, to be reflected in a per kilowatt hour rate schedule that is comparable to PG&E's rate schedule and consistent with the resource portfolio requirements and rate setting mechanisms contained in the City's adopted Implementation Plan." H Bonds could offer lower cost debt than would be available to a commercial power plant developer, making CCSF investment in a renewable energy facility such as a wind farm cost-effective. Another attractive aspect of wind plant ownership, or long-term leasing in particular, is the lack of fuel risk, both in terms of price and physical delivery (in other words, a wind farm would continue to produce energy even if there were disruptions in the delivery of fossil or renewable fuels for different types of plants).

4.4.3 Use of H Bond Authority in Conjunction with CCA Contract Revenues²³

H Bonds are generic municipal revenue bonds, authorized by the voters of San Francisco for financing renewable energy and energy conservation facilities. San Francisco has the opportunity to issue H Bonds based on a new revenue source – monthly electric bill payments of participating residents, businesses and public agencies, or power sales revenues to San Francisco or another Community Choice Aggregator ("CCA") formed pursuant to AB117 (2002 – Migden).

In a report drafted for the SF LAFCO, the law firm of Nixon Peabody summarized the value of the Proposition H Revenue Bond authority as follows:

H Bonds provide CCAs with considerable flexibility. They can be used to finance renewable energy generating units and other revenue producing elements of CCA. They can be supported by existing assets and enterprises, or by new assets or enterprises such as renewable energy generating units, or revenues from a contract with an Electric Services Provider ("ESP"). H Bonds and CCA are extremely synergistic. Together, they (a) provide the means to develop renewable energy and energy efficiency resources and the market to utilize and pay for those resources and (b) provide CCA with a secure base of resources with which to serve its customers and, thus, avoid excessive dependence on a volatile energy market. Whether the bonds will qualify for tax-exempt status and other factors affecting their marketability are dependent on the structure of the transaction being financed. Specific structures are discussed below. Generally, in order to qualify for tax exemption, the facilities that are financed must be owned by a governmental entity or operated by San Francisco or other governmental entity - or by a nongovernmental entity on behalf of San Francisco pursuant to a contract that meets certain requirements prescribed by the Internal Revenue Service. Even if not tax-exempt, H Bonds could still be issued to finance facilities, which make solar and other technologies more affordable to local residents and businesses,

²³ This information is taken from an independent analysis conducted by Nixon Peabody for the San Francisco Local Agency Formation Commission, submitted November 10, 2005, and referred by LAFCO to the Board of Supervisors on February 15, 2006, and approved by the CCA Task Force on March 8, 2006.

albeit at a slightly higher interest cost... – but could also take advantage of significant federal tax benefits..²⁴

4.4.4 Application of H Bonds to CCA

In Ordinance 86-04, the Board of Supervisors provided that H Bonds shall be made available to the City and County's chosen supplier to augment the renewable energy portion of its contract.

H Bonds can be used in a variety of ways. From a strategic business perspective, H Bonds and CCA are extremely synergistic. Without CCA, renewable energy and energy efficiency projects financed by H Bonds would have to search for a market for the power output. Alternately, without financial resources of the sort authorized by H Bonds, a CCA program would require use of other funds to finance new green power facilities. Moreover, without its own generation assets, a CCA would be totally dependent upon resources obtained by its supplier from the wholesale energy market to serve its customers. Although the power market does not look like it did then, the energy crisis of 2000-2001 dramatically demonstrated the danger of over-dependence on short-term purchases of power from Independent Energy Producers. A CCSF investment in its own generation assets could provide more long-term rate stability and assurance for a successful CCA program.

The use and applicability of H Bonds to achieve the objectives set out in Ordinance 86-04 will need to be determined on a project by project basis. Three of the threshold questions that must be addressed are (i) what assets or programs would best assist with the implementation of CCA, (ii) what revenue source will secure repayment of the H Bonds, and (iii) whether the H Bonds are tax-exempt or taxable. These items are discussed in more detail in Appendix X.

4.4.5 CCA Program Contract Structure, Electric Revenues and H Bond Repayment

The supplier contract will be structured to manage the flow of monthly CCA revenues and schedule revenue bond tranches throughout the design and construction phase to ensure that the cash flow is 'neutral' for the City and the supplier. Invoicing and payment structures will be implemented to measure progress and ensure that the supplier is not paid in advance of the completion of any elements of their work. The contract will also provide clear prompt payment mechanisms to ensure that the supplier does not have to build unnecessary carrying costs into its rates.

The CCA supplier will be required to provide financial assurances for the design, construction and warranty periods for the renewable power generation infrastructure components and any efficiency installations. The RFP will contain the requirements for these financial assurances, which may include Performance and Payment Bonds, Letters of Credit, Corporate Guarantees, etc., or combinations thereof, as approved by the City Attorney.

²⁴ Page 2, Conclusion "c."

Consistent with Section 4(E) of Ordinance 86-04, the CCA supplier contract will also include a provision that requires the supplier to bear financial responsibility for contract failure by providing bonds or insurance to ensure that all involuntary reentry fees are paid by the supplier. The CCA supplier contract will also include a provision requiring the supplier to obtain a letter of credit to cover risks associated with the 360 MW rollout.

4.4.6 CCA Start-Up and Program Funding

This Implementation Plan authorizes the LAFCO to work in conjunction with the SFPUC to implement the CCA program. The overall CCA budget for performing work to transfer customers to a new supplier is \$12 million. The LAFCO will submit another budget request in 2006-7 for the remaining Start-Up funds. The SFPUC has allocated \$5 million dollars in its FY 2006-2007 Budget for the purposes of continuing implementation of CCA. Of this, \$3.2 million is on reserve pending further information on specific expenditures. The budget allocation includes funds to in order to complete and issue a Request for Information, a Program Basis Report, and the CCA Supplier RFQ and RFP.

In order for the CCA program to be self-funded, all operational, administrative, and capital costs associated with the program shall be recovered through the CCA's electric rates, including potentially any necessary reimbursements to the General Fund for CCA Program Start-Up costs made after the issuance of H Bonds.

The declaration of official intent shall (a) state that the City shall finance construction of a green power network consisting of 72 Megawatts of new distributed generation capacity such as fuel cells, and a minimum of 31 Megawatts of solar photovoltaic cells, as well as 107 Megawatts of conservation measures, as well as 150 Megawatts of new wind generation capacity (the "Project"); (b) state that the City intends to issue tax-exempt or taxable debt (the "Debt") to finance the costs of the Project; (c) state that the City will pay certain capital expenditures in connection with the Project prior to the issuance of the Debt; (d) state that the City may use temporary funds which are or will be available on a short-term basis to pay for capital expenditures related to the Project; (e) state that the City reasonably expects that it will reimburse itself for the use of such funds with proceeds of Debt to be issued by the City to finance the costs of the Project within 18 months after the date of the original expenditure or within 18 months after the date the Project is placed in service or abandoned, whichever is later (but in no event more than 3 years after the date of the original expenditure).

Each such declaration of official intent shall be noted prior to or within 60 days of the first expenditure on such Project (or such later time as may be permitted by the Reimbursement Regulations) with the Clerk of the Board, who is hereby authorized and directed to maintain a record of all declarations of official intent, the capital expenditures to be covered by such declaration and the allocations of Debt proceeds to reimbursement for such capital expenditures.

4.4.7 **Possible Alternative Funding Sources for the 107 MW Energy Efficiency and Conservation Targets**

San Francisco electric customers currently pay a surcharge, called the Public Goods Charge (PGC) for various public purpose programs including energy efficiency, renewable energy research and development, and low-income energy efficiency programs among other activities. The PGC is collected from retail electric and gas customers in San Francisco. The energy efficiency PGC funds are currently administered by PG&E. However, AB 117 provides that the CPUC should establish a process whereby CCAs and other entities may apply to become administrators of these funds, or require the IOU administrators to direct a proportional amount of energy efficiency resources to CCA service territories. As stated earlier, the CPUC has indicated in its Energy Efficiency proceeding that it may, at a future date, elect to allow CCAs to administer the PGC funds collected from their customers by PG&E, or to collect their own energy efficiency funds from participating ratepayers.

San Francisco intends to either apply to the CPUC to administer PGC Energy Efficiency funds collected by PG&E, or establish a separate collection of its own public goods charge funds on PG&E bills commencing upon establishment of CCA service in 2007.

Based on information received from PG&E regarding the level of electric PGC funds collected within San Francisco's jurisdiction, CCSF anticipates that approximately the following energy efficiency funds may be available for use toward its CCA energy efficiency projects:

Year	rebate funds
2008	\$ 7 Million
2009	\$ 7 Million
2010	\$ 7 Million
Total	\$15 - 21 Million

The City will only request to administration of the PGC funds collected by PG&E for CCA customers. Customers who opt out of the CCA program will continue receive energy efficiency services from PG&E.

CCSF's PGC funds will be administered by the SFPUC and the Department of the Environment, and the energy efficiency programs themselves will be implemented by the supplier as components of the CCA's 360 MW portfolio outlined in this Implementation Plan. SFPUC and Department of the Environment Staff will be responsible for administering PGC-funded energy efficiency programs implemented by the CCA supplier.

The supplier will be required to implement the full 107MW of efficiency and conservation measures. The supplier will prepare a contingency plan should the PGC Funds not be made available which will address how a shortfall in PGC funding will effect the achievement of the energy efficiency targets and program costs, and propose a fallback plan using the revenue bond financing, revenues from CCA electric sales, or alternative subsidy sources to fund energy efficiency activities.

PGC funding is likely to be applicable to only a portion of the efficiency and conservation portfolio. These funds will need to be supplemented by approximately \$85.5 million in

additional funds from CCA revenues and H Bonds to finance the 107 MW of energy efficiency and conservation activities. Although this is subject to change depending on the rollout timeframe proposed by the CCA supplier, the schedule for energy efficiency revenue bond issuance may be as follows:

- 2007-8 \$28.5 Million Revenue Bonds for Conservation and Energy Efficiency
- 2008-9 \$28.5 Million Revenue Bonds for Conservation and Energy Efficiency
- 2009-10 \$28.5 Million Revenue Bonds for Conservation and Energy Efficiency

If CCSF is able to secure through the CPUC administrative access to the PGC funds, which sum approximately to between \$5 – 7 million annually, or \$15 – 21 million over a three-year time span, the CCA supplier may have access to between \$100 – 106 million in additional funds for energy efficiency activities. However, as stated above, the exact amount and timing of revenue bond issuances dedicated to the implementation of the energy efficiency activities will depend on the response of bidders to the RFP and the City's ability to secure supplemental funding through the PGC. The CCA energy efficiency program component is expected to have for its use up to \$85.5 million in H Bonds plus up to \$21 million from the CPUC's energy efficiency funds, for a total of \$106.5 million to fund 107 megawatts of capacity. This is approximately \$1 million per megawatt, which is the industry standard accepted cost for energy efficiency capacity. Of course, the CCA will seek options that will lower the cost and improve performance for its resource needs. In particular, emphasis will be placed on peak demand reduction that will offset the need for the most expensive power purchases.

4.4.8 Conservation

The terms energy efficiency and conservation are occasionally used interchangeably. In general, however, the energy industry commonly defines conservation broadly as steps taken to reduce energy use. Conservation projects are here defined as those that 1) reduce fuel usage, cost and environmental impact in the process of generating electricity, but which may or may not make the generation of electricity itself more efficient; examples include: recycling heat for commercial or industrial purposes, or load transfer through storage of renewable energy to displace inefficient peak power, 2) reduce the need for electricity consumption by, for example, daylighting as a replacement for electric lights, insulation of electric hot water heaters or solar water heating that displaces electric water heating, peak load control, and other demand reduction technologies; 3) eliminate wasteful uses of electricity, such as a) misdirected or excessive lighting that contributes to light pollution, light trespass and glare, b) mistimed usage which can be controlled by automated sensors that turn off lights or other appliances when people are not present, and last but not least, c) power storage systems such as solar or wind electrolysis hydrogen and related applications, or flywheels. Potential designs may be integrated with other new power generation facilities in the SF CCA portfolio.

4.4.9 Energy Efficiency

Demand Response switches the timing of energy consumption from one period to another period and will incorporate power storage, as well as design /automation changes which are sometimes called energy efficiency but may also be classed conservation. More broadly, energy efficiency projects may include replacing older appliances with modern, more efficient ones. For example, in 2001 the average refrigerator in an American home consumed over 1200 kwh/year, while replacing these with new ones would have reduced usage per refrigerator to under 500 kwh per year. Many older appliances can be upgraded, often with payback of just a few years; these include, motors, lighting systems, pumps, and HVAC systems. Recent studies have also shown that parasitic loads consume up to 5% of US electricity, which existing technology can reduce by up to 2/3. To the extent that energy efficiency investments are not recoverable, the PGC funds will be applied in an equitable manner among rate classes. To the extent that investment in projects such as load switching are recoverable, they may be financed with H Bonds.

4.4.10 Load Impacts

Some conservation or efficiency measures may specifically reduce electricity *consumption*, while others will avoid *fuel usage* in the generation of electricity. The result is that predicting load removal with this tool is highly uncertain, and may fall within a large range. In addition, load removal from conservation and efficiency measures applied on the demand side will have a range of characteristics, and different possibilities for measurement. For example, lowering the electricity requirement for outdoor lighting would reduce baseload demand during the night, replacing refrigeration equipment would lower electricity usage around the clock, while solar hot water and daylighting will reduce daytime and peak demand. A cost/benefit analysis, and practical implementation factors, will reveal where funds are best applied.

4.4.11 Attainment of Required Savings Targets

The goal of the CCA energy efficiency and conservation program will be to reduce primary consumption of electricity ,while reducing pollution and greenhouse gases. This goal must be attained with a positive return for the funds expended, meaning a focus on peak shaving. Suppliers submitting bids in response to the RFP shall propose a specific strategy relative to the targeting of peak and medium profile shaving, proposing a rollout schedule under a performance ratesetting mechanism.

For conservation and energy efficiency measures that are not metered, it is essential that consistent and reputable standards of record-keeping, evaluation, measurement, and verification (EM&V) be maintained for any load reducing measures. There must be a clear record of equipment purchased, CCA program financing, itemization of overhead and other costs, and measured savings. In addition, summary public reports will be compiled by the CCA annually reviewing performance and giving significant presentation of, and insight into, the data. A system of energy audits, field testing and truly independent monitoring of the performance of conservation and efficiency program implementation shall be established, and it is recommended that products undergo testing and certification for eligibility to be used in the CCA program.

One model for this could be the CEC certification and rating of photovoltaic products. Contractors shall be made accountable for performance of conservation and energy efficiency measures, and a reasonable limit placed on overhead expenses. On-bill financing and standard-offer performance contracts, that link payment to the amount of energy saved, shall be used to the maximum extent. In contrast, Energy Efficiency and Conservation facilities whose load impacts may be metered may be treated more or less the same as photovoltaic facilities – the supplier will be automatically incentivized to ensure that it functions.

4.4.12 31 MW Solar Photovoltaic and 72 MW Distributed Generation Supplemental Funding Sources

In addition to customer investments in on-site generation and CCA debt financing of large scale PV, there are financial resources and incentives that may be able to augment the CCA's distributed generation targets. The State provides incentives on a \$ per watt basis for installed capacity of PV, small-scale wind (>30kW), and fuel cells. Current state law requires that larger PV systems be placed into a performance based incentive program, which bases payments on how much electricity the PV system generates. How this rule will apply to CCAs is yet to be determined, but in general PV systems over 100 kilowatts of ac capacity should expect to be eligible for performance incentives rather than upfront rebates. This arrangement may impact the total program cost, particularly if the payments are stretched over several years. Ways should be explored for limiting this effect, including appealing to the CPUC for limiting the time frame for payment to one year or less. In addition to using its bulk purchasing ability to achieve some economies of scale for Solar panel purchases, these incentives may be available to reduce some of the costs of reaching the CCA's Solar goals. Moreover, private investments in PV are frequently eligible for tax benefits, and such benefits should be utilized as much as possible in a well designed program.

A range of examples are offered to show how these financial tools might be applied, and their potential effect on the cost of the program. Examples are also given for how to enhance the value of the photovoltaic program. These include integration with other CCA program elements, such as energy efficiency, to avoid expensive peak power energy purchases as well as other measures.

4.4.13 Subsidies

San Francisco will seek all available financial incentives and subsidies to augment CCA ratepayer investment in both the distributed and central station generation facilities that serve CCA load. Partnerships with private entities capable of taking advantage of tax credits and accelerated depreciation also offer significant opportunities for reducing the cost burden on the CCA. The CPUC oversees the Self-Generation Incentive Program, which offers rebates for on-site applications of PV, wind and other renewable and clean distributed generation technologies. The SGIP, which was established by the State Legislature, is due to sunset in 2007 unless reauthorized. In response to significant interest in providing an extension to these incentives, the CPUC established the California Solar Initiative (CSI), a 10-year \$2.5 billion continuation of Statewide rebates for PV and other solar technologies. The SGIP incentive level is currently set at \$2.50/watt for all new PV applications in 2006. Below is a table showing the currently

projected schedule for SGIP/CSI rebate decline. Notably, due to surprisingly high demand for the incentives, the rebate level has already declined to \$2.50/watt.

Under the rules of CSI, higher rebates will be available for government agencies, due to the fact that they cannot receive tax credits. The rules also require implementation of energy efficiency together with the solar energy system, which will greatly increase the value, and decrease the payback period, of the energy service package.

The following is an example of combining the various elements of support, potentially to make a solar energy system very affordable to customers. This example is taken from Appendix I:

Example 1: A large commercial customer with sufficient tax liability purchases a photovoltaic system of 100 kilowatts. On the open market such a system might cost \$8.50 per watt (ac), but CCA bulk purchase of several megawatts reduces the cost to \$7.00per watt (ac), saving the customer \$150,000 on the purchase price.

A California Solar Initiative (CSI) program rebate pays \$2.00 per watt, worth \$200,000 for a 100 kilowatt system. The CCA contributes \$2.00 per watt, or \$200,000, to the customer from money received through the sale of Solar H-Bonds as an equity position in the photovoltaic system.

The customer takes the available solar tax credits and accelerated depreciation on their share of the photovoltaic system. Under the tax regime projected after 2007 the tax credit is 10 percent of the customer's share of the installed cost of the photovoltaic system. The installed cost, as stated above, is assumed here to be \$750,000 with the CCA owning a \$200,000 share. Thus the initial customer ownership share is \$550,000, and the first year tax credit would be 10 percent of this amount or \$55,000. In addition, the customer gets a 5-year accelerated depreciation on their ownership share. At a federal tax rate of 33 percent, the write-off would be worth \$150,000.

Approximate Schematic Financial Summary for CCA/Private Partnership

Normal Purchase Cost	\$850,000
CCA Bulk Purchase Saving	- \$150,000
California Rebate	- \$200,000
CCA Share	- \$150,000
Tax Benefits	- \$200,000
Net Cost to Customer	\$150,000

The CCA share could be for ownership of valuable rights, potentially including a portion of future electric generation, renewable credits, carbon credits, emergency access, and option for later system purchase or transfer of ownership.

Exhibit 4-3:
CPUC Energy Division's Projected Schedule for Rebate Decline Adopted by D.06-01-024

Rebates would change at the earliest of reaching either:			Starting at \$2.80/watt equivalent in 2006	
"Bin" or Year	Date	Incremental MW Applications	Bin (\$/watt)	Total Incentive \$ Committed (million \$)
0	1/1/06		2.8	
1	1/1/07	50	2.5	125.0
2	1/1/08	70	2.25	157.5
3	1/1/09	100	2.0	200.0
4	1/1/10	130	1.75	227.5
5	1/1/11	170	1.5	255.0
6	1/1/12	230	1.25	287.5
7	1/1/13	300	1.0	300.0
8	1/1/14	400	0.75	300.0
9	1/1/15	500	0.5	250.0
10	1/1/16	650	0.25	162.5
Totals:		2600MW ²⁵		\$2.3 billion

Rebates are distributed by individual applications on a project by project basis and are drawn from the PG&E territory budget share. CCSF will have to compete for access to the SGIP/CSI incentives on a project-by-project basis, requiring timely applications and demonstration of steady and efficient project advancement. Although it may be anticipated that falling rebate levels may have a dampening effect on rebate demand for all but the most economical applications for photovoltaics, this is not guaranteed, and project economics should not necessarily be reliant on State subsidies.

It will be incumbent upon the CCA and the electric service supplier to assure that photovoltaic installations are eligible for as much supplemental financing as is feasible. This will require the CCA to ensure that PV and other clean distributed generation projects that seek such subsidies meet the requirements of the particular subsidy programs, including allowable unit sizes in relation to on-site demand, the use of the energy produced by the units, and any other requirements necessary to receive incentive payments.

²⁵ Note: The MW total reflected is corrected from table that was included in D.06-01-024.

CCA ownership of photovoltaic systems should be evaluated in relation to its effect on project economics, and utilized when a) the CCA can in fact get rebates, b) other options have been exhausted and the CCA needs to meet the resource requirements, c) at the end of the economic lifecycle if private parties wish to sell their share of ownership to the CCA, or d) at the end of the contract cycle if the Electric Service Provider has taken full or partial ownership. As ESP ownership of the PV systems may complicate a CCA's ability to access SGIP/CSI funds, CCSF will offer participating customers ownership options that allow access to these funds, such as lease or lease-to-own PV systems.

In addition to owning photovoltaic systems, the CCA can purchase shares of photovoltaic systems, renewable credits (RECs), rights to future energy generation or other transferable values produced by a photovoltaic system. These valuable rights can be used to obtain revenue for the repayment of bonds and secure future revenue or ratepayer savings after bonds are paid off. The CCA can also act as a leasing agent, or secure a third party to help finance a photovoltaic facility, or the CCA may own and lease photovoltaic systems to CCA customer/participants. RECs may be sold (1) on the open private market at retail rates; (2) at wholesale rates to utilities if that market is developed; and (3) contribute to the community's 51% RPS.

4.4.14 Reducing Cost and Ratepayer Burden

The 31 megawatt program focus will be on 1) installing photovoltaic systems of sufficient size that ease of implementation and economies of scale can be realized, and 2) realizing maximum value from these photovoltaic systems. A program that can optimize scale and efficiency might aim for a maximum of 250 photovoltaic systems with an average system size of at least 125 kilowatts, and ranging between 50 kw and over 1 megawatt. Actual range and size of systems will depend upon opportunities that arise for customer participation, as well as value, performance and system benefits.

Bulk purchase agreements for modules and other equipment can reduce the cost of the program for all participants. Another approach to reduce the cost of photovoltaics locally, although potentially longer-term than the 3-5 year build-out period, would be to secure local manufacturing capacity. For example, manufacturers can be offered an agreement with the City, where the CCA would purchase photovoltaic modules for its program. Such a facility can take different forms, and can range from final design and assembly to full facilities for production of solar-grade feedstock, cells, and modules. The City could also secure a partnership with manufacturers to finance a share of such a facility or facilities as would be necessary to supply the City with photovoltaic modules at the manufacturer's cost. If either bulk purchases of PV or the development of local manufacturing capacity can save a dollar per watt over wholesale rates, then the net effect on CCA costs could be substantial. At savings of \$1/watt, a 31 megawatt program would save \$31 million dollars in material costs, and potentially an equal amount in interest on a bond.

Another approach would be to use technologies that lower cost of manufacturing, such as silicon thin film, silicon on high quality super or substrate, or concentrating photovoltaic systems.

Module and mounting system designs can also reduce the time and cost for installation. Any such technological approach should be tested and proven to the satisfaction of the CCA administrative body, and to meet UL and California Energy Commission requirements before any significant investments are made. The above approaches, ownership of manufacturing and/or seeking alternative low cost modules, also can mitigate potential problems in the supply chain: limited feedstock, delay in delivery, or increases in module cost due to market conditions.

Finally, existing examples of low cost installations should be emulated. Cost of installations can be heavily affected by buyers driving the bargaining process as well as having locations and conditions where photovoltaics are easily and rapidly installed. Choosing optimal locations will be a major goal of the photovoltaic program, as will reducing the hurdles. As illustration of what is currently possible, lowest cost photovoltaic installation receiving SGIP funding have ranged from \$4.50 to \$6.50 per watt. 121 systems (over 10 percent of the total number) cost \$7 per watt or less, and 57 systems cost under \$6 per watt. Such installations cannot be defined by size, as they range from 30 kilowatts to over a megawatt, not by type of module, as many brands are represented. A number of the lowest cost installations were built by public agencies, but by no means all. The CCA and the energy supplier should keep such achievements in mind, research how they were accomplished, and seek to leverage the CCA's several advantages to emulate or improve upon them.

4.4.15 A Solar New Deal

An important strategy for reducing ratepayer burden is to leverage the financing capacity of the CCA to encourage various levels of private party participation. The core CCA 31 megawatt (dc) program will focus on the commercial sector for its range of advantages, including their need for peak power during the daylight hours and the opportunities to implement large-scale energy efficiency, and demand response measures in conjunction with the photovoltaics. Large commercial customers will offer the chance to install a smaller number of large photovoltaic systems that will simplify program administration, accelerate development, and maximize economy of scale.

The large core CCA solar program will also help offset the higher cost of smaller photovoltaic systems that are also intended to be part of the CCA program. The CCA should aim to install 3 to 6 megawatts (dc) in the form of hundreds of small photovoltaic systems over the duration of the Electric Service Provider's contract. It will be the responsibility of the CCA and its supplier to insure that smaller customers also benefit from the CCA photovoltaic program through reduced cost as well as financing and ownership structure options. These can and should include opportunities for neighborhood solar projects, cooperative ownership, low interest bond financing, and third party leases.

Private purchases of PV systems by CCA members will also be included in the network. The core program would focus on large commercial PV systems that can achieve the lowest cost per installed watt, take advantage of the CCA's bulk purchasing of PV equipment, and be co-financed by the CCA. The portion financed by a commercial enterprise will be eligible for a 30 percent tax credit through at least 2007, and if this tax credit is extended to future years it will

offer excellent opportunities for marketing the CCA photovoltaic program. (note: the portion financed by the CCA would reduce the basis for tax benefits.) A co-financing system will allow the CCA to have equity and reduce the upfront cost for both the business and the CCA. After a certain number of years a transfer option would allow the business to buy out the CCA share, or the CCA to buy out the business's share. Appendix X provides some examples of the cost benefits might be available to private purchasers of PV systems with CCA bulk purchasing of photovoltaic modules.

Value enhancements, such as premium quality power supply, an energy efficiency package, or the purchase and resale of renewable energy credits, might also help to close cost gaps between Bond financed photovoltaic electricity and retail electric rates. Any and all of these approaches can be used with the financing examples of Appendix I .

Value Enhancement A, Sale of Renewable Energy Credits (RECs): The “green” attribute for the electricity is a valuable commodity that can be bought and sold on the market. The California Public Utilities Commission (CPUC), has ruled that Renewable Energy Credits are the property of a photovoltaic system owner and thus can be disposed of as the owner chooses. The CPUC has also ruled that the RECs produced by on-site distributed renewable generation shall be treated in the same way that RECs associated with central station renewable generation are. The position of the CPUC may be interpreted to imply that RPS obligated entities and the owners of renewable distributed generation may come to an agreement regarding the disposition of the RECs produced by those facilities. Wholesale renewable energy credits sell for about 0.5 cents/kilowatt-hour, while retail rates can be 2 cents/kilowatt-hour or more. Solar RECs are often purchased at a premium and mixed with other cheaper credits (such as bulk wind RECs) to reduce the average cost. The premium solar RECs can range from 3 to 10 cents/kilowatt-hour, and can be purchased by the CCA or sold on the open market. However for the RECs to have maximum value for the CCA it would be necessary for the CPUC to approve such purchase of locally produced RECs by CCAs, or by load serving entities generally, and allow these RECs to be applied toward compliance with the CCA's legal renewable portfolio requirement. On the other hand, if the CCA cannot purchase the credit for customer-owned, distributed renewable energy facilities, then it might be preferable to sell such RECs on the retail market. In such a case it would be most desirable to develop a local RECs market where San Francisco businesses and residents could purchase these mixed local solar/commercial bulk wind RECs at affordable prices, while supporting solar projects with local energy and environmental benefits.

Value Enhancement B, Integration with Energy Efficiency: A likely requirement for receiving rebates from the California Solar Initiative will be an energy audit. This is a comparatively low cost lever to expand the benefits of a photovoltaic system, particularly if it used as a basis for energy efficiency improvements at a customer's site. It is normally possible to identify highly cost effective energy efficiency improvements. This converts the purchase of a photovoltaic system into the purchase of an energy service package that has high value for a customer.

Value Enhancement C, Enhanced Service: A photovoltaic system might serve as the basis for enhanced on-site reliability for electric service. Blackouts or diminished power quality frequently occurs at the times when photovoltaic systems produce at optimal levels, during summer

afternoons. Recent estimates by EPRI suggest that US losses from diminished power quality cost consumers about \$100 billion per year, or about half the cost of their electric bills. Even short blackouts and power variations can cost businesses millions of dollars in lost production, lost sales, lost computer data, or lowered electronic equipment life. Thus, premium protection against power variations and/or blackouts can be worth from 4 to 6 cents per kilowatt-hour *on an ongoing basis* for the service. If customers place this premium value on such protection then, depending upon the location of the photovoltaic site, it may be economically feasible to separate a local load from the grid during a blackout and continue to supply power for selected loads from a photovoltaic system. Of course 24 hour protection will require power storage or other onsite generation, as well as electric panel modifications to target specific loads within the building.

Combining these value elements could result in an attractive proposition for a commercial customer while also creating significant value for the CCA. The “Solar New Deal” can be constructed to be of mutual benefit through the following arrangements.

Customer ownership shifts the cost burden for meeting local resource needs off from the CCA, limiting its exposure to the portion that is financed by H Bonds. Customer ownership provides policy assurance for access to rebate funds Customer ownership means that the customer can take advantage of tax benefits Many customers will most value the first 10 years of the photovoltaic system, while the CCA can take benefits that are further out in time The CCA share can be repaid for its investment with a variety of possible value assets, such as long-term electricity generation and/or renewable energy credits.

The CCA Solar Program must also clearly demarcate the different roles of the CCA supplier and the Cities CCA staff to avoid customer confusion, delay in solar installations, delays in bond availability, and legal action on the part of the City or the supplier regarding performance goals. The CCA supplier will be responsible for the marketing, and installation of the solar systems (including any premium service requests), as well as subsequent integration of the output of the solar system into the total CCA portfolio. The City will be responsible for liaison with the CCA supplier to ensure that Solar H bonds are available on a timely basis to fund, wherever necessary, the solar installations, as well as to provide to the CCA supplier information and support regarding City permitting processes. It will be the joint responsibility of the CCA supplier and the City to develop the bond repayment mechanisms to ensure that the Solar H Bonds receive priority for repayment from CCA revenues. However it will be the responsibility of the CCA supplier to provide the necessary credit checks and deposit requirements of customers and other assurances for H Bond repayment.

4.4.16 Solar H Bonds

Depending on the availability of CEC and CPUC Subsidies, customer equity buy-in, and other sources of financing, San Francisco will issue Solar H Bonds, in an amount to be determined by the requirements of its chosen supplier, to cover all or part of the following High and Low Range estimated costs for its 31 MW Solar Photovoltaic Network for the period 2007-2010:

Exhibits 4-4 and 4-5:
H Bond Photovoltaic Program Installed Cost (High and Low Scenarios)
(Source: Local Power)

Model Projection for Net Cost of 31 Megawatts (dc) Photovoltaics (High)							
year	Installed		cost per watt		rebate		net cost
	dc	ac	dc	ac	rate	rate	
2008	2	1.7	\$6.50	\$7.83	\$2.25	\$5.58	\$9,265,000
2009	8	6.6	\$6.25	\$7.53	\$2.00	\$5.53	\$36,720,000
2010	10	8.3	\$6.00	\$7.23	\$1.75	\$5.48	\$45,475,000
2011	11	9.1	\$5.75	\$6.93	\$1.50	\$5.43	\$49,555,000
total	31	25.7					\$141,015,000

Model Projection for Net Cost of 31 Megawatts (dc) Photovoltaics (Low)							
year	Installed		cost per watt		rebate		net cost
	dc	ac	dc	ac	rate	rate	
2008	2	1.7	\$5.75	\$6.93	\$2.25	\$4.68	\$7,765,000
2009	8	6.6	\$5.50	\$6.63	\$2.00	\$4.63	\$30,720,000
2010	10	8.3	\$5.25	\$6.33	\$1.75	\$4.58	\$37,975,000
2011	11	9.1	\$5.00	\$6.02	\$1.50	\$4.52	\$41,305,000
total	31	25.7					\$117,765,000

Repayment of solar bonds may be obtained through a lease agreement with individual customers that secures their right to use the electricity, or a lease-purchase agreement for securing ownership of the photovoltaic system by the customer. These transactions can be structured in different ways. For example, commercial customers typically care more for near to mid- term financial benefit from a photovoltaic system, while a CCA cares more about revenue over the longer term required to repay a bond. The customer may, therefore, take delivery of their share of electricity from a joint-finance arrangement in the early years of a contractual agreement, while the CCA may defer repayment for its share until future years. This is one possible financial arrangement that may be attractive to commercial customers.

Any shortfall in revenue from the PV Solar Network relative to the annual set-aside necessary to repay the bond would need to be made up by funds from the general revenue of the CCA. An important aim of the CCA photovoltaic program is to minimize the percentage impact on the general ratepayer funds. This can involve strategies mentioned above, or other strategies that realize savings or income from other parts of the CCA program, and that can mitigate the cost impact of the photovoltaic program.

4.4.17 Solar Energy Production

Average production of electricity will be optimized by placing PV systems in locations with clear exposure to the sun and areas of the City that have better than average insolation. Data from the National Renewable Energy Laboratory (NREL) gives the following data for the City's solar average energy resource (insolation) on a fixed flat plate collector that is parallel to the ground (i.e., not tilted).

Exhibit 4-6:
Average insolation for solar collector in San Francisco with 0 degree tilt
(kwh/sq. meter per day) (Source: NREL)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2.2	3.0	4.2	5.7	6.7	7.2	7.3	6.5	5.4	3.9	2.5	2.0	4.7

Total average insolation is 4.7 kilowatt-hours per day per square meter, or 1715 kilowatt-hours per year. An average output rate of 1200 kwh per year for each kilowatt (dc) of PV capacity is a reasonable basis for estimation of performance, and would result in 37,200,000 kilowatt-hours of total generation each year. The data from the table above is given from monitoring at San Francisco International Airport. There is considerable variation in solar resource, not only from month to month, but also over a course of years. The National Renewable Energy Laboratory (NREL) gives the data from the table above as “Average”, with an expected range of plus or minus 9 percent in individual years. There is also significant variation from one location to the next within the City, which has been measured by SFPUC monitoring stations. Compiled data from these stations is given in the table below.

Exhibit 4-7:
San Francisco Solar Monitoring Stations
(Source: SFPUC)

San Francisco Solar Monitoring Stations							
Flat Surface				Nov/1/2001-Nov/27/2002			
station	location	SF District		Cumulative total kwh/meter ²	Adjusted Annual kwh/meter ²	rank	percent of lowest
sf01	washington HS	Richmond	NW	1628	1551	9	102.8%
sf02	Marina MS	Pacific Heights	N	1754	1672	7	110.7%
sf03	North Point Pump Plant	Telegraph Hill	NE	1816	1731	4	114.6%
sf04	Lincoln HS	Sunset	W	1584	1510	11	100.0%
sf05	Ida Wells HS	E. of Panhandle	CN	1799	1714	5	113.6%
sf06	Moscone Center	S. Downtown	E	1768	1685	6	111.6%
sf07	Laguna Honda Hospital	W. of Twin Peaks	CW	1603	1528	10	101.2%
sf08	Everette MS	Mission	C	1847	1760	1	116.6%
sf09	SF Gen Hospital	Polero	E	1827	1741	2	115.3%
sf10	SE Sewage Plant	Bay View	SE	1825	1739	3	115.2%
sf11	Hillcrest ES	Excelsior	S	1748	1666	8	110.4%
avg.				1745	1663		110.2%

The top area resource is over 16 percent higher than the lowest. All other things being equal, the cost to produce a kilowatt-hour from a photovoltaic system in the best area would be 14 percent cheaper than in the lowest resource area. This difference has financial significance for the CCA, and represents about \$30 million worth of delivered electricity over a 40 year period at current average retail rates. Factoring in the higher electric rates charged to customers during summer peak demand, as well as future rate escalation, will amplify this value further. However the difference in solar production potential and value across the city will likely be secondary to the

on-site load to be served and suitability of the site characteristics, such as amount of roof space, solar orientation of site, degree of shading, and integrity of the roof).

Exhibit 4-8
Effects of Location on PV System Value
 (Source: Local Power)

CCSF: The Effect of Location on Photovoltaic System Value								
Assuming current average rates and future average peak rates								
	insolation kwh/m ²	%output	PV output kwh/kw-yr	SF PV Mw	annual gen mwh	elect. rate USD/Mwh	Lifecycle Value 40 years	
	1510	75%	1133	31	35,108	\$135	\$189,580,500	
	1600	75%	1200	31	37,200	\$135	\$200,880,000	
	1760	75%	1320	31	40,920	\$135	\$220,968,000	
variation	250		188		5,813		\$31,387,500	
	1510	75%	1133	31	35,108	\$190	\$266,817,000	
	1600	75%	1200	31	37,200	\$190	\$282,720,000	
	1760	75%	1320	31	40,920	\$190	\$310,992,000	
variation	250		188		5,813		\$44,175,000	

The 31 megawatts of direct current capacity in the core program are estimated to have an alternating current rating at 83 percent, or 25.73 megawatts (ac). The actual peak generating capacity will be less than this, depending on orientation of modules, shading, dust and other accumulation on modules, lower performance under higher temperatures than standard testing conditions, and degradation over time. Installation of photovoltaic systems on large flat roofs and ground mounting in areas requiring minimal site preparation can also reduce costs and improve performance. Assurance of high performance and high value under local conditions will be essential criteria for siting and installation, and long term warranties will be a requirement from module and inverter manufacturers.

As the PV Solar Network will be paid off by the end of the bond period, operation and maintenance and inverter replacement (after 15 to 20 years) should be the primary expenses thereafter. The result will be affordable electricity for the CCA, provided at peak hours, for the life of the PV systems. While normal economic analysis uses a lifespan of 20 to 30 years for this kind of infrastructure, experts and laboratory tests suggest that a life of 40 years or longer is likely.

At the same time, every opportunity should be taken to maximize the value of the photovoltaic systems so that the long-term value matches or exceeds the cost. This can be accomplished in several ways:

- Orienting modules so they produce primarily during hours of peak demand
- Utilizing energy storage and other technologies to provide premium power service
- Assuring that the electricity is generated at the point of final delivery
- Incorporating future customer rate and power purchase cost escalation
- Incorporating the value of renewable credits

To make the Solar-Network into a real resource it will have to be centrally monitored by the supplier in real time and coordinated with other CCA resources to avoid peak spot and reduce 6X16 block purchases. Such resources may include other CCA in-City renewables, short-term electric storage and load reduction technologies. This will allow for meeting CCA load needs while realizing the full value of Photovoltaics.

4.4.18 CCSF Photovoltaic Resource Requirement

The 31 megawatt photovoltaic network is one part of the City's solar energy generation plan for meeting its adopted electricity resource goals. It should be recognized, however, that there are plans for further photovoltaic development in order to achieve a city-wide 50 megawatt goal.

This CCA Implementation Plan recognizes that the SFPUC is engaged in a plan to install 3.3 megawatts of photovoltaics on city facilities, and will be the agent for carrying out future construction of a further 10 megawatts under the financing authority established by San Francisco's Solar Proposition B. There is also the option to install more photovoltaic capacity under Phase II of the CCA renewables "roll-out". If these projects move forward as planned, then the City will easily meet its solar resource requirements. The following list summarizes the plans for development of solar resources in San Francisco:

**Exhibit 4-9
Projected and Planned PV**

Projected & Planned Photovoltaic Development within the City and County of San Francisco		
Program	Installed	
	dc	ac
CCA Core	31	25.7
CCA Small PV systems	3	2.5
SFPUC Solar	3.3	2.7
Proposition B	10	8.3
Existing and new other	2.7	2.2
Total	50	41.5

4.4.19 150 MW Wind Farm Funding Schedule

Depending on the available subsidies it is planned that the City will issue Revenue bonds for its 150 MW Wind Power Facility for the period 2007-2010:

2007-8	\$40 Million
2008-9	\$130 Million Revenue bonds
2009-10	Option of More

4.5 72 MW In-City Distributed Generation

San Francisco has several potential sources of clean or renewable energy for electricity generation inside the City including: solar, wind, wave, and bio-methane waste. Each of these resources varies in terms of their potential scale, the commercial availability of technologies to harness the resources and convert them into electricity, cost, interconnection to PG&E's distribution system, and permitting requirements. Because Distributed Generation costs can vary widely and some technologies are currently not commercially available, this plan does not make a forecast of expenditures for implementing this portion of the 360 MW "Roll-Out". Instead, CCSF will request additional information from market participants about which applications of distributed generation would be most feasible and cost effective for use in the CCA program in the forthcoming RFI. Moreover, the RFP will direct respondents to propose a combination of renewable distributed generation applications that can be feasibly deployed in a cost-effective manner within San Francisco over the 3-5 year timeframe required. At this time CCSF estimates that investment in 72 MW of distributed generation may require between \$100 and \$250 million in additional revenue bond issuances depending on the diversity and of projects implemented as well as the type of technology selected.

San Francisco has several potential sources of clean or renewable energy for electricity generation inside the City including: solar, wind, tidal, and bio-methane waste.

4.5.1 Solar Thermal

Solar energy can be converted to electricity using photovoltaics, as in the photovoltaic program, but it can also generate electricity using thermal processes that can be less expensive than photovoltaics. Solar thermal generators usually track the sun, and thus maintain output through a longer period of the day. The heat from the solar thermal generator can also be used in a cogeneration process, which significantly improves the economics. For example, a solar thermal furnace could strip hydrogen from natural gas without emitting carbon into the atmosphere. The process heat can be used to generate electricity, the hydrogen used for clean burning fuel that firms the capacity of local renewables, and a carbon black byproduct can be sold on the market or used to power advanced fuel cells.

4.5.2 Urban Wind

The City has several areas with good quality wind resources. Locations where a wind generator is place should be carefully monitored before installation preferably for a full year, to determine economical locations. The economics of wind is highly influenced by scale; installed cost for individual small to mid scale wind turbines can range from \$1.50 to \$3.50 per watt. Very small, home sized units can cost even more. Development of local manufacturing, mass production of small units, and installation of mid to large sized multiple units can definitely reduce the cost.

Performance and cost parameters for distributed wind is completely different than for central wind farms, which need to cost under \$1.30 per watt and perform better than a 30 percent

capacity factor to be competitive in today's market. Capacity factors depend on very small changes in the level of wind that is proportional to the cube of the wind speed, and it is not expected that the wind resource in the City (using current technology) would allow anywhere near the capacity factors of an optimally sited wind farm. As a guideline, for inner city wind to compete with delivered electricity cost would require a capacity factor of at least 14 percent, and a cost under \$1.60 per watt. The cost of turbines can be pooled by the CCA to avoid some of the risk of underperformance of turbines. If an individual turbine performs too poorly, the regional coverage of the CCA will prove to be an advantage over individual customers, since the equipment can be re-sited to a better location.

It is understood that there are potential issues related to siting and permitting to integrate wind into an urban environment. The City will work to resolve these issues so that wind projects can move forward in a way that is most harmonious with the urban environment. Technological, siting and design approaches can all be used to facilitate this process. These problems for urban wind have been addressed in other urban environments in Europe with success.

4.5.3 Alternative Hydroelectric Generation

The Bay area has strong tidal currents that make it an excellent prospect for the development of tidal power. Newer technologies do not require damming, and any facility would have to have no significant environmental or visual impact on the Bay. There is likely enough tidal resource to fulfill the entire 72 megawatt requirement, but the City prefers a diverse portfolio of distributed generation. Cost for "flow of the current" (non-damming) tidal, current and wave power generators cost from \$2.50 to \$4.00 per watt. These costs will come down as manufacturing is built up to scale, and will make these technologies very affordable. Operation and maintenance is usually quite minimal, and lifecycles are expected to range up to 20 years before replacement is necessary.

4.5.4 Waste Methane

Methane from municipal waste is already being tapped by the City in one its wastewater facilities. This can be expanded for other places in the City that have or produce otherwise wasted methane.

4.5.5 Energy Recycling

Energy can be recovered, in a sense recycled, from pressurized water and natural gas pipes and water falling from elevated storage facilities for the generation of electricity. These facilities have the advantage of being dispatchable, and can provide base load or peaking capacity.

4.5.6 Hydrogen and Energy Storage

Distributed generation can also use these sources of energy and convert them to energy storage systems so that they can be used when they are needed, or to regulate the irregular output of a

renewable generator. Examples of energy storage include batteries, super-capacitors, flywheels, or hydrogen.

Hydrogen can be used in fuel cells or in direct combustion. In general it is expected that direct combustion is a less expensive way to use hydrogen, and the hydrogen can be mixed with other fuels to make them cleaner burning. The cheapest, and standard, way to produce hydrogen is by the steam reformation of natural gas. This process has little environmental or resource benefit. Far superior from this standpoint is to use clean renewable energy to produce the hydrogen using solar thermal or electrolytic processes. Fuel cells cost about \$3.00 per watt in large quantities, and fuel cell installations funded by SGIP rebates in California have ranged in price from \$6.71 to \$18.00 per watt installed.

Environmental Requirements. To the maximum extent feasible, and whenever required by law, distributed energy generators, energy storage devices, energy efficiency and conservation technologies shall not use or release highly toxic metals, such as lead, cadmium, arsenic, or mercury, that may pose a hazard to the environment or human health inside the City and County of San Francisco.

4.6 Rights and Responsibilities

Rules and procedures developed for CCA are directly applicable to San Francisco's CCA Program in many cases. These details will be inserted into the CPUC CCA IP Application when the negotiation of PG&E tariffs is complete. Customer related rules and procedures that the SF CCA Program will need to address include areas such as:

- consumer protection
- notifications
- billing
- payment of bills
- establishment of credit
- maintenance of credit
- reestablishment of credit
- deposits
- billing adjustments
- billing disputes
- discontinuance of service
- relocation of service
- restoration of service
- return to IOU service

These subjects will be considered and addressed in conformance with the requirements of AB 117 as a part of the development of the Program Basis Report, as described in Section 5, Program Implementation.

By becoming a CCA, the City will also become Load Serving Entity (LSE), that is, an organization authorized or required to supply electricity under certain terms and conditions to retail customers located within a particular electrical system (e.g. California ISO). An LSE's obligation is to ensure the purchase and delivery of energy, capacity, ancillary services, transmission services and other components of full requirements supply on behalf of its retail consumers. In California, the physical operating requirements of LSEs must be met through a Scheduling Coordinator, which may or may not be the same organization as the LSE.

Under a full requirements supply contract, the City will require the ESP to take on the LSE obligation under a contract with the CCSF. Therefore the contract will resolve, in addition to the bonding requirement stated above:

- Who is responsible for any financial obligations and liabilities that are exceeded by the Bond amount required of the ESP that is anticipated to cover CCA customer costs in the event an ESP defaults or breaches its contract
- What remaining obligations, if any, that the City has to meet in regards to any California ISO, PG&E and end use customer requirements for providing electricity generation service in the event the ESP defaults or breaches its contract
- What obligations, if any, that CCSF will have to meet regarding PG&E's operational and financial (and/or service agreement) requirements in the event the ESP defaults or breaches its contract
- What obligations the supplier will assume in the event of a material change to CCA load, such as a significant change in economic conditions, such as thresholds and time limits that define material changes in contracted load
- The limits on the competitive role of the ESP within the City boundaries or more generally in relation to city CCA customers. CCSF will establish via the RFP or the contract exclusivity or non-compete provision to prohibit the CCA Program supplier from supplying customers in the CCSF boundaries with service under a Direct Access contract. Such provisions might well have to take into consideration existing DA supply contracts.

These are the types of issues will need to be addressed in an ESP contract, and potentially in specific amendments to the existing standard PG&E-CCA service agreement.

In addition to the above bonding requirement the City will develop other Credit and financial assurance provisions as described below. The CCSF will establish credit and financial assurance policies and procedures that both serve to protect the City itself, not only CCA customers, in the event a CCA Program Counter Party fails to meet its obligations. The policies and requirements imposed upon third parties by the CCSF will need to be specified in the RFP and the supply contract or in a separate credit agreement.

These policies are likely to result in specific contractual provisions and related CCSF responsibilities. The primary responsibilities can be categorized as follows:

- Credit application and creditworthiness process
- Security process
- Creditworthiness monitoring process
- Credit policy evaluation process

CCSF will need to adopt specific provisions in the supply/credit agreement that both protect it from credit exposure and encourage a large number of bidders. Balancing these often opposing objectives will require a specific strategy and set of policies. Common credit provisions are listed below, and specific routine City credit provisions will also be evaluated in light of the complexity and expected duration of the CCA program.

- Termination payment provisions (liquidated damages) – in the case of default, provide the City with compensation for the underlying value of the contract. Commonly calculated by taking the discounted present value of the positive or negative difference, it is obtained by subtracting the value of a replacement contract from the existing contract.
- Credit threshold and credit limit provisions – based on credit policies, there will be varied requirements for establishing and managing credit of an ESP under a CCA Program.
- Mark to Market credit exposure calculation – credit exposure is commonly measured through mark to market calculations that made daily or weekly based on market prices of electricity. These provisions require the ESP to post security according to the value of the contract. Credit exposure calculations commonly have margin call provisions as well, which specify the terms and conditions that a counter party obtains security from an ESP when it exceeds credit thresholds.

4.7 Description of Third Parties Supplying Electricity

In an attempt to obtain the largest pool of respondents to a CCA RFP the City will not place any up-front restrictions on who could become its CCA supplier. Of course any supplier chosen by the City will have to meet RFP imposed financial standards, credit requirements, bonding requirements, any technical requirements and business requirements e.g. obtain a Scheduling Coordinator (SC) to transact with the CAISO, and demonstrate Electronic Data Interchange (EDI) capability, as required by this Implementation Plan and Ordinance 86-04. Finally it is likely that any supplier will have register with the CPUC as an ESP in order to conduct business as a wholesale supplier in California.

At this stage the City has informally met with a number of potential CCA suppliers and the CCA Task Force has received presentations from a number of potential suppliers. A list of Electric Service Providers currently registered with the CPUC is contained in Appendix 11.8. Inclusion of this list in this CCA plan is for information purposes only and is not intended to limit RFP respondents to this particular list.

5. PROGRAM IMPLEMENTATION

As discussed in this Implementation Plan, there are a number of critical elements that must be advanced in parallel for the CCA Program to be successful. Accordingly, the adoption of this Implementation Plan by ordinance of the Board of Supervisors delegates control of the CCA program to LAFCO, in coordination with the SFPUC, with full responsibility for its implementation, including but not limited to the responsibilities outlined below.

The LAFCO and the SFPUC will be dedicated to the implementation and success of the CCA Program, and will be provided with the required resources to advance the Program. This section also explains the interaction between the CCA and PG&E, which will continue to provide metering, billing, and distribution service to the CCA's customers.

San Francisco's CCA program will have to be run like a business from day one. Its challenge is to provide a greener power service at prices that are competitive with PG&E's primarily natural gas, nuclear and large hydro portfolio. Under state law, residents and businesses must have the opportunity to opt-out of the program over a 120 day process. Under state regulation, each resident and business will be given opportunity to compare the new CCA service rates being offered with PG&E's rates, and decide on their own best judgment whether to opt-out or be included in the program.

This is a very challenging undertaking. Unlike municipal utilities, which simply charges captive customers electric rates based on operating costs, by law CCAs are subject to competitive pressure from the opt-out factor enshrined in AB117. San Francisco's CCA supplier's power must be competitively priced from day one, or a high customer opt-out rate will naturally result; as Nixon Peabody remarked in its 2005 report to LAFCO, "you must get it right from the start." Therefore, the SFPUC will provide a dedicated, single purpose team through the implementation phase of the CCA program.

San Francisco's CCA Program will be initiated by the Board of Supervisors and Mayor's:- (a) approval of this CCA Implementation Plan and subsequent additions and alternations to the CPUC CCA Implementation Plan Compliance document; and (b) authorization of a retail electricity service contract provided by a single supplier, to be offered (on an opt-out basis) to all electricity ratepayers in San Francisco who are not now served by the San Francisco Public Utilities Commission or who are deemed ineligible by the CPUC.

In embarking upon this new energy supply program, CCSF's residents and businesses would benefit from more regular, transparent, and formal direct input from both the legislative and executive branches.

The City Attorney shall be charged with enforcing contract compliance.

The City and County of San Francisco shall extend revenue bond financing for components of the 360 Megawatt resource portfolio requirement, in coordination with the City's Capital Planning Committee and the Revenue Bond Oversight Committee.

The San Francisco Public Utilities Commission may provide renewable capacity and/or energy, including its Hetch Hetchy assets and potential new RPS compliant assets, to the City's chosen supplier in a manner consistent with this Implementation Plan.

5.1 Start-up, Organisation, and Funding of the Program

As discussed in this Implementation Plan, there are a number of critical elements that must be advanced in parallel for the CCA Program to be successful. Accordingly, the adoption of this Implementation Plan by ordinance of the Board of Supervisors authorizes the LAFCO to oversee the implementation of the CCA Program in conjunction with the SFPUC as further described below: .

The LAFCO has the responsibility of reporting publicly to the Mayor, Public Utilities Commission and the Board of Supervisors regarding the SFPUC's implementation of the CCA program in conformance with the adopted Implementation Plan, including the expenditure of appropriated funds and the expenditure of revenue bond proceeds on the City's CCA resource portfolio. The LAFCO, in coordination with the SFPUC shall advise and help guide the implementation of the program in a manner that involves the residents and businesses that are CCA customers.

The Budget and Finance Committee shall approve major LAFCO and SFPUC expenditure decisions, and report to and make recommendations to the Board of Supervisors and Mayor, in accordance with their responsibilities under AB 117.

Beyond its functional responsibilities, the CCA Program will also have the duty to safeguard confidential data pertaining to current electric utility corporation customers, which PG&E is required to provide under Public Utilities Code Section 366.2 (c)(9). Throughout the course of the CCA Program, appropriate measures will be needed to ensure that confidentiality is maintained. The LAFCO and the SFPUC is hereby authorized by the City to request, receive and manage all data from the electrical utility corporation, and will apply the appropriate means and resources to manage the information such that strict levels of confidentiality are preserved.

5.1.1 Definitions

The following terms have the following meanings:

- (a) The "LAFCO" is the San Francisco Local Agency Formation Commission
- (b) The "City" is the City and County of San Francisco
- (c) The "Project" is the San Francisco Community Choice Aggregation program, which will form an aggregation of the City's electric power customers, as provided for under State Law AB 117, and awarding a single contract to an electric service provider (ESP), for the supply of the City's power, and for the design, build, operation and maintenance of the renewable power generation and conservation facilities, as well as energy efficiency measures, as required under Ordinance 86-04.

5.1.2 LAFCO Authorities and Powers

The LAFCO in conjunction with the SFPUC, is hereby authorized to implement the San Francisco Community Choice Aggregation Project, as generally described in ordinance 86-04 (May 27, 2004), as described in this Implementation Plan, and as specifically provided in sections (a) through (d) below:

(a) The LAFCO, in conjunction with the SFPUC, as provided herein, is authorized to conduct the planning, designing, implementing, and building the Project, including, but not limited to, all of the following:

- (1) Application for and acceptance of grants, fees, and allocations from any federal, state, local agencies, and private entities that may be available for the advancement or benefit of the Project
- (2) Acquiring, through agreement, lease, purchase or through eminent domain proceedings, any real property or property rights necessary for, incidental to, or convenient for, the implementation and management of the Project
- (3) Preparing the Board of Supervisors for the issuance of revenue bonds to fund the elements of the Project pursuant to San Francisco Charter Section 9.107.8
- (4) Negotiating with energy suppliers and preparing the Board of Supervisors to contract with public or private entities or individuals for services for the planning and implementation of the Project, and for the design, construction, operation and maintenance of the Project, in accordance with all applicable City of San Francisco procurement requirements, processes and guidelines
- (5) Entering into cooperative or joint development agreements with other City or other municipal government entities or private entities. These agreements may be entered into for the purpose of expanding the jurisdiction of the CCA Program, sharing costs, selling or leasing land, air, or development rights, or for any other purpose that is necessary for, incidental to, or convenient for the purposes of implementing the Project. For purposes of this paragraph, "joint development" includes, but is not limited to, an agreement with any person, firm, corporation, association, or organization for the operation of facilities or development of Projects adjacent to, or physically or functionally related to, the Project

(6) The exercise of all rights and powers conferred upon municipalities choosing to form community choice aggregations under State law AB 117, California Public Utilities Commission Decisions 04-12-046 (December 16, 2004) and 05-12-041 (December 15, 2005), except those requiring specific actions by the Board of Supervisors and/or Mayor

(7) officially representing the project to the public, the media and governmental and regulatory entities

(8) Relocation of utilities, as necessary for completion of the Project

(9) Securing any permits required for the implementation of the Project

(10) requesting, receiving and managing all data from the electrical utility corporation that PG&E is required to provide under Public Utilities Code Section 366.2 (c), as well as any other data possessed by departments or agencies of the City and County.

(b) the duties and responsibilities of the LAFCO, working in conjunction with the SFPUC include, but are not limited to, all of the following:

(1) Officially submitting the San Francisco Project Community Choice Aggregation Implementation Plan to the California Public Utilities Commission, as required under State Law AB 117,

(2) Implementing the CCA Project as described in the San Francisco Community Choice Aggregation Implementation Plan,

(3) (A) Adoption of administrative procedures, not later than 60 days after the adoption of this Ordinance for the administration of the CCA Program in accordance with any applicable laws, contracting and procurement laws, laws relating to contracting goals for minority and women business participation, and the Political Reform Act of 1974 (Title 9 (commencing with Section 81000) of the Government Code),

(B) The administrative procedures adopted under subparagraph (3)(A) shall be consistent with Sections 84308 and 87103 of the Government Code,

(C) The administrative procedures adopted under subparagraph (3)(A) shall include the establishment of all financial management procedures and processes to be used for the implementation of the CCA Project, including the establishment of bank or other accounts if necessary for the management of all Program funds,

(4) Submitting quarterly progress and budget reports to the Board of Supervisors through the Budget and Finance Committee over the course of the implementation phase,

(5) Preparation of proposed annual CCA Project Implementation Management budgets for approval by the Board of Supervisors

(6) The LAFCO and the SFPUC are responsible for implementing all measures necessary to safeguard confidential data pertaining to electric utility corporation customers.

(c) The Board of Supervisors intends to rely upon LAFCO to act as its agent in exercising the Board's inherent authority to oversee CCA as the programmatic policy of the City and County of San Francisco and hereby revocably delegates said authority. To the extent that the IP provides that LAFCO will undertake actions, tasks etc. in the furtherance of the CCA Program implementation, it is understood that this includes having such actions and tasks performed by others, as provided for herein.

- 1) LAFCO shall have the authority to conduct audits, either financial or performance, of any aspect of the CCA program undertaken by the SFPUC and report the results of any such audit to the Board of Supervisors with recommendations as to policy, staffing or budgetary changes.
- 2) LAFCO, or its representative(s), shall have full access to all data and work product obtained and/or developed by the SFPUC. LAFCO, or its representative(s) shall be bound by any and all confidentiality agreements required by local, state, or federal law pertaining to said data and work product to which the SFPUC would be bound. Should the SFPUC be required or desire to negotiate any private confidentiality agreement, LAFCO is a necessary party to such agreement and shall be included as such.
- 3) LAFCO is hereby entitled to and the SFPUC shall report on the progress of CCA implementation in such frequency and at such time as LAFCO shall, by resolution, determine, but in no case less frequently than quarterly. Such progress report shall be certified, true, accurate and complete by the Director of the SFPUC. Should the SFPUC fail to report as required herein, LAFCO may recommend to the Board of Supervisors any action that it deems may compel compliance.
- 4) LAFCO shall have the authority to expend funding authorized by the Board of Supervisors, and to secure the services of SFPUC and/or other support services, as required for the performance of LAFCO's CCA Program responsibilities, as described herein and in the IP. All services secured by LAFCO in furtherance of its CCA Program responsibilities shall be procured in accordance with LAFCO's procedures, and any other applicable regulations.
- 5) LAFCO shall have the authority to develop and recommend the CCA Request for Information (RFI), and the CCA Request for Proposals, (RFP), as provided in the IP. LAFCO will consult with the SFPUC regarding the development of these documents, and request the SFPUC to provide a written task approach, document outline, completion schedule, and proposed budget for the completion of each of these tasks within three weeks of the initial consultation with LAFCO. In the event that the approach proposed by the SFPUC for either of the above tasks is not accepted by LAFCO at its sole discretion, at a hearing duly noticed for said purpose, LAFCO may, *sua sponte*, recommend to the Board of Supervisors a LAFCO drafted RFI, or RFP. Whether prepared by the SFPUC, or under contract through LAFCO, LAFCO is authorized to review said draft RFI and RFP and make such recommendations to the Board of Supervisors as it shall deem appropriate. The CCA RFI shall, by resolution, be authorized for release by the Board of Supervisors upon recommendation of the Local Agency Formation Commission (LAFCO).

The subsequent RFP to solicit potential CCA suppliers as described in Section 4(A)-(G) of Ordinance 86-04, shall, by ordinance, be authorized for release by the

Board of Supervisors upon recommendation of LAFCO. The RFP should also contain specific reference to the recently enacted AB 32 (The Global Warming Solutions Act) in order that respondents may leverage financial incentives provided therein. Upon receipt of responses to the RFP, LAFCO, in consultation with the SFPUC, and upon consideration of SFPUC's recommendations, shall review all such responses and recommend to the Board of Supervisors a new supplier contract.

In the event that the SFPUC is authorized by LAFCO to prepare the RFI, but does not act in within the timeframe as set forth hereafter as to the issuance of the draft RFI, LAFCO, at a hearing duly noticed for said purpose, may, *sua sponte*, recommend to the Board of Supervisors issuance of a LAFCO drafted RFI. Upon closure of the RFI response period, in the event that the SFPUC is authorized to prepare the RFP within a timeframe determined by resolution of LAFCO in its sole discretion (but in no case shall such period be less than sixty (60) days), and the SFPUC fails to submit a draft RFP to LAFCO for consideration within the required timeframe, LAFCO, at a hearing duly noticed for said purpose, may, *sua sponte*, recommend to the Board of Supervisors issuance of a LAFCO drafted RFP. In the event that the SFPUC fails to complete a timely review of RFP responses and recommend a contractor based thereon, LAFCO may, by resolution, declare its intent to recommend a contractor to the Board of Supervisors on a timeline and in a manner defined by said resolution.

- 6) LAFCO shall have the authority to prepare and recommend the CCA Program Basis Report, as described in the IP. LAFCO will consult with the SFPUC regarding the development of the Program Basis Report, and request the SFPUC to provide a written task approach, document outline, completion schedule, and proposed budget for the completion of the Program Basis Report within three weeks of the initial consultation with LAFCO.

In the event that the approach proposed by the SFPUC for the development of the Program Basis Report is not accepted by LAFCO at its sole discretion, at a hearing duly noticed for said purpose, LAFCO may, *sua sponte*, recommend to the Board of Supervisors a LAFCO drafted Program Basis Report. In the event that the SFPUC is authorized to prepare the Program Basis Report within a timeframe determined by resolution of LAFCO, and the SFPUC fails to submit a draft Program Basis Report to LAFCO for consideration within the required timeframe, LAFCO, at a hearing duly noticed for said purpose, may, *sua sponte*, recommend to the Board of Supervisors acceptance of a LAFCO drafted Program Basis Report.

- 7) LAFCO shall have the authority to consult with the San Francisco Public Utilities Commission (SFPUC) regarding the preparations for the issuance of the revenue bonds authorized under Proposition H of November 6, 2001 (H Bonds), and to request the SFPUC to provide a written task approach, document outline,

completion schedule, and proposed budget for the preparations for the issuance of H Bonds, and to authorize funding for the SFPUC to complete such tasks within timeframes established by LAFCO through resolution. In the event that the approach proposed by the SFPUC for the completion of the preparations for the issuance of H Bonds is not accepted by LAFCO at its sole discretion, at a hearing duly noticed for said purpose, LAFCO may, *sua sponte*, recommend to the Board of Supervisors that LAFCO identify appropriate resources and expend funds for the completion of preparations for the issuance of H Bonds.

- 8) LAFCO shall have the authority to consult with the San Francisco Public Utilities Commission (SFPUC) regarding other tasks required for the implementation of the CCA Program, and to request the SFPUC to provide a written task approach, document outline, completion schedule, and proposed budget for such tasks, and to authorize funding for the SFPUC to complete such tasks within timeframes established by LAFCO through resolution. In the event that the approach proposed by the SFPUC for the completion of the such tasks is not accepted by LAFCO at its sole discretion, at a hearing duly noticed for said purpose, LAFCO may, *sua sponte*, recommend to the Board of Supervisors that LAFCO identify appropriate resources and expend funds for the completion of such other CCA Implementation tasks.

(d) LAFCO's and SFPUC's authority for the implementation of the CCA Program shall be terminated, as determined by the Board of Supervisors, upon completion of all activities necessary for the implementation of the Project, including any additional CCA Program implementation activities subsequently approved by ordinance, or upon termination of the CCA Program by the Board of Supervisors. Prior to the termination of LAFCO's and SFPUC's implementation authority, LAFCO shall prepare for an orderly transition of responsibility for the Project to the San Francisco Public Utilities Commission for regular operations.

5.1.3 Not used

5.2 CCA Program Budget and Funding

This ordinance approves and authorizes the use of \$5 million in funding for fiscal year 06-07 for the implementation of the CCA Program, \$3.2 million of which is placed on reserve pending information regarding progress on CCA start-up. The LAFCO may make expenditures from the amounts hereby approved and authorized for all purposes relating to the implementation of the program; including staff costs, support services costs, and administrative costs such as office space, equipment and supplies.

The LAFCO shall manage the budgets necessary for the implementation of the CCA Program, at a strict level of financial diligence, in order to ensure that the program does not exceed its authorized funding levels. LAFCO shall provide detailed quarterly financial reports to the Budget and Finance Committee.

The LAFCO shall prepare and submit annual budget authorization requests, based on actual SF CCA Program resource needs, to the Board of Supervisors for approval.

5.2.1 SFPUC Functions and Scope of Responsibilities

Ordinance 86-04 requested that this Implementation Plan identify the operations of the CCA as well as the functions that should be performed by entities other than the City, including a power supplier and/or its subcontractors.

The SFPUC's Power Enterprise currently provides electric power to electric customers of the City and County of San Francisco. The Power Enterprise currently manages a portfolio of resources that includes Hetch Hetchy hydroelectric generation, a supply contract with Calpine, and third party purchases. Consistent with the SFPUC's commitment to cleaner and greener power supplies, the Power Enterprise has begun diversifying its existing resource base to include renewables, distributed generation, demand management and energy efficiency programs.

Under CCA the Power Enterprise would provide the "public face" functions for the program. Public face functions include:

- Customer service and administration of a customer call center
- Customer opt-out processing
- Management of energy efficiency programs

5.2.2 Associated Governmental Process

The CCA Program will involve a number of other governmental entities as it is implemented. Examples of the processes involving other governmental agencies include obtaining permits to using sites owned by other governmental agencies to securing any benefits available through governmental clean power and efficiency programs. In addition to formal involvement, the CCA will be a high visibility program, and as such, it will benefit the program to build and maintain political support.

In order to effectively manage all required government involvement, the CCA Program will first work to identify all the City, State and Federal governmental agencies that will be involved by the nature of their jurisdictions. This will include all agencies that will need to provide any form of permits or other forms of approval for the CCA Program to advance, as well as agencies that have oversight roles. It will also include descriptions of all interface responsibilities that the CCA Program and the involved agency will have during the implementation and subsequent operation of the CCA Program.

It is expected that the main areas of intergovernmental involvement will relate to the establishment of a CCA, to customer protection measures, and to the environmental and other land use regulations that may be involved in the installation of the renewable power generation infrastructure.

When all of the CCA Program's intergovernmental responsibilities have been identified, a schedule of required CCA activities will be developed to support the overall timing requirements of the program. Depending on the volume, nature and skill sets required, appropriate staff resources will be assigned to address the CCA's intergovernmental responsibilities.

The previous work in San Francisco to install solar power generation equipment at the Moscone Center and the Generation Solar program have served to familiarize and prepare affected City agencies for working with renewable power technology installation. It is expected that the CCA Program will benefit from progress made through these efforts.

In addition to intergovernmental responsibilities that the CCA Program will have, it may also be able to benefit from other governmental activities. A number of governmental agencies have ongoing programs in clean energy and conservation. From acquiring specific technology assistance or equipment, to participating in emissions trading, to gaining the benefits of research, there may be significant benefits to the CCA Program available through other complementary governmental agency efforts.

The CCA Program will first categorically identify all such complementary programs, and the specific benefits they make available. Then, depending on the nature of activities required to secure these benefits, appropriate staff will be assigned to coordinate the CCA Program's efforts to participate with these complementary governmental agency programs.

5.2.3 Methods for Entering and Terminating Agreements

This section describes the process by which customers agree to take service from the CCA, and the process by which customers may terminate service, except as may be provided in utility tariffs.

Customers shall take service on an opt-out basis after an ordinance is adopted by the City awarding contract to the City's chosen supplier, with two customer notifications from the City and County of San Francisco over a 60 day period prior to transfer of participating customers onto the new service, and two more notifications over 60 days as described in this Implementation Plan:

Opt-out notifications shall present the City's new proposed service in a transparent comparison of terms and conditions of service before and after switching to the City's chosen new service on the last day of the 120-day opt out period, such that a consumer can easily compare the prices and intended resource portfolio of the CCA service and the prices (informing the customer of the possibility of a rate increase by the CPUC) and resource portfolio (percentages of RPS compliant resources for utilities under state law vs. for the CCA under its intended 51% RPS rate schedule, and a comparison of the difference between an RPS based on purchased green power transmitted from areas remote from the customer, versus a "hard" RPS based on new resources built near to the customer.

If a customer chooses to opt-out during this period by checking and returning the postage paid detachable opt-out card to the City, under law, there shall be no charge to that customer by any party, PG&E or San Francisco for electing to opt-out. As with PG&E, customers may obviously relocate from San Francisco and leave its service as a result, without any charge for leaving the CCA's purchasing contract with the supplier. After a new resident or business comes to San Francisco, they will be given the opportunity to opt-out after being enrolled in the City and County's CCA program.

Ordinance 86-04 provides that the supplier shall transfer ownership, upon termination of a CCA supplier agreement, of all tax-exempt H Bond financed renewable energy, energy efficiency or facilities to the City, and shall transfer ownership of all taxable H Bond or privately financed facilities to customers.

5.3 Program Development

The Program Development phase will consist of the development and refinement at a detailed level of the processes necessary to successfully implement the ultimate goals of the CCA Program, including the renewable power generation infrastructure, efficiency and conservation required under Ordinance 86-04, and all other program elements established by the Ordinance creating this CCA.

This process will consist largely of the identification of open questions and issues that need to be addressed and closed prior to the issuance of the RFP for the supplier, but it will also cover any open non-supplier issues that need to be addressed to advance the CCA Program. These subjects arise across a disparate range of subjects, some of which are addressed in this document. Some representative examples of open issues are:

- How will rate payer confidential data be managed?
- What roles will the CCA Program and the supplier respectively play as to site acquisition and attendant agreements for the installation of the renewable power generation infrastructure elements?
- What performance and durability requirements will apply to the renewable power generation infrastructure components to be provided by the supplier?

As a part of the Program Development Phase, there will be an effort to gain insight and knowledge from other Community Choice Aggregation Programs. This may include review of their program documentation, and may also include meetings with key staff to discuss the approaches they used for their Community Choice Aggregation Programs.

The program development phase conclusions will be compiled in a 'Program Basis Report', which, category by category, will describe how each element of the CCA Program will be addressed.

5.3.1 Rate Design, Rate Setting and Other Costs

This section explains the process by which CCA rates and other costs will be established, including public participation in that process.

Public Utilities Code Section 366.2(c) 3 (B) and (C) require San Francisco's Implementation Plan to contain rate-setting and other costs to participants. The City and County interprets this requirement to mean information regarding the basic principles and structure of its rate-setting mechanism. This is not a submission of CCA rates to the CPUC for approval.. Therefore, the City and County's ratesetting mechanism is not required to conform to a CPUC regulated approach t to setting the CCA component of rates.

Ordinance 86-04 requires that this Implementation Plan require that the supplier bids and any contract with an supplier include proposals for CCA rate design, with all costs associated

with providing the various components of the City's proposed service package, including the costs of designing, building, operating and maintaining all renewable energy, conservation and energy efficiency installations, as well as any capital, insurance and other costs associated with fulfilling the commitments made in its bid to the City (Ordinance 86-04, Section 3 (1)(III), p.5). Under this kind of CCA Supplier Direct Pricing, the contract price is the same as the price charged to end-users, including commodity, attribute, services and administration, and the RFP request will bids for retail prices according to customer classes.

Ordinance 86-04 requires that this Implementation Plan establish that the supplier should bid, and the subsequent contract with the winning bidder should include, proposals for CCA rate design, with all costs associated with providing the various components of the City's proposed service package, including the costs of designing, building, operating and maintaining all renewable energy, conservation and energy efficiency installations, as well as any capital, insurance and other costs associated with fulfilling the commitments made in its bid to the City.²⁶ Furthermore this bid shall meet or beat PG&E's generation rates charged to city business and residents at the time of the bid.

Furthermore, Ordinance 86-04 establishes a second RFP bidding requirement that the bidder "shall post a bond or demonstrate insurance sufficient to cover the cost of reentry fees in the event that customers are involuntarily returned to service provided by PG&E," and shall bid "an insured electricity rate schedule, similar to that appearing on monthly bills" (Section 4 (E), p.9). In addition to requiring structured rates with CCA supplier direct pricing, CCSF is requiring suppliers to shoulder procurement risks of their rate commitment to San Francisco residents and businesses.

The first new element of the City and County's rate-setting mechanism established by this Implementation Plan is a requirement that the supplier's required rate schedule shall also include all City staffing and expense costs that are directly related to the CCA program. This will require that staff present an assessment of the likely City CCA costs in its RFP process to enable bidders to account for such costs in their bids. Some caps on CCSF CCA costs may also be appropriate to circumscribe supplier exposure within reasonable limits. A second new element not identified in Ordinance 86-04 is the requirement that the supplier assume any and all liabilities of meeting the resource adequacy requirement for all LSEs contained in the CPUC Decision 05-10-042, 06-06-064 and subsequent decisions regarding the local component of meeting resource adequacy. A third element included for clarity is that the supplier will also have to manage, within its competitively bid schedule, any CRS true-up balances that will be calculated by the CPUC relative to the Cities CCA program. In addition to these costs the supplier must also incorporate the costs of any fees charged to the CCA by PG&E, and account for the customer responsibility surcharge (CRS) in its bids so as to establish a clear comparison to PG&E energy rates.

Under the City and County's rate-setting mechanism, the supplier shall be required to manage the risks associated with its competitively bid rate schedule, such that a mis-projection of the cash needs of the supplier, under which a mis-allocation of unanticipated

²⁶ (Ordinance 86-04, Section 3 (1)(III), p.5).

costs and overheads by the supplier, shall not be recovered from participating San Francisco ratepayers, but shall be born by the supplier's owners or another party that underwrites or enhances the credit of the supplier. In this manner, the City and County's award of contract to a supplier shall constitute its major action as a rate-setting authority within the scope of this Implementation Plan, except that any decision to increase development of renewable resources, conservation or energy efficiency technologies will require subsequent negotiation with the supplier, a potential contract extension and subsequent bond issuances by the Board of Supervisors to achieve a 51% RPS by 2017.

While it is clear that the initial rate established by a CCA supplier shall be required to meet or beat PG&E's generation rates the mechanism to change rates thereafter has not been established.

It is anticipated that, via the contract with a CCA supplier rates will be structured to change either at fixed levels (e.g. 1% increase per year) or according to an index (e.g., to adjust in relation to rate adjustments by PG&E.). Responses to the RFI process discussed above will likely help determine the index method(s) or other structure used to change supplier rates chosen in the RFP and supplier contract. CCSF will have to strike a balance between rate stability and competitiveness. Any index that is not directly linked to PG&E's own generation rates could hypothetically result in rates that, during certain periods, are higher than PG&E own generation rates should PG&E rates unexpectedly fall. While this is unlikely, over time an indexed rate may be both more predictable and/or less volatile than changes in PG&E generation rates.

Treatment of Low-Income Customers Requires Special Consideration. A key aspect of residential rates regulated by the CPUC is the California Alternative Rates for Energy program (CARE). This program applies to residential customers of PG&E and other investor-owned utilities and provides about a 40% discount from average total residential bills for customers with incomes up to 175% of the Federal poverty line. In CCSF about 17% of residential customers are currently *participating* in CARE.⁸ This is slightly lower than the 21% of PG&E's residential customers that are participating in CARE system-wide.

Moreover, according to PG&E the CARE program has a higher penetration rate in San Francisco (82%) than it does on average throughout PG&E's system (70%). This means that there are fewer customers eligible for CARE and not participating in the program in San Francisco than in the rest of PG&E's service territory. Within CCSF these customers currently have average monthly bills of \$26.27 of which \$8.79, or 33% is constituted by the generation portion. Based on CPUC Decision 05-12-041 the City anticipates that CARE program funds will be made available to CCA CARE eligible customers such that these customers should be no worse off under the CCA program than under PG&E rates.

5.3.2 Disclosure And Due Process In Setting Rates And Allocating Costs Among Participants

Consistent with the Section 5.3.1 entitled “Rate Design, Rate Setting and Other Costs” above, this section describes how the CCA will disclose to its customers information about rates and costs, and the public participation process for rate setting and cost allocation proceedings.

The City and County will ensure that adequate notice is provided to electricity customers during the rate-setting process, which consists of the RFP process, the award of contract by ordinance and opt-out notifications. Towards this purpose, and consistent with the Sunshine Ordinance and open meeting laws, the City and County will continue to conduct public hearings at every juncture of the CCA decision-making process, and shall provide notifications to customers as required by 366.2(c)(13)(A), (B) and (C), by which the City and County shall fully inform participating customers at least twice within two calendar months, or 60 days, in advance of the date of commencing automatic enrollment. Notifications may occur concurrently with billing cycles. The City may or may not elect to insert one or more of these notifications into PG&E’s monthly electric bills, as appropriate.

Following enrollment, the City shall fully inform participating customers twice over a period equivalent to two consecutive billing cycles. Any notification shall inform customers of both of the following:

- (i) That they are to be automatically enrolled and that the customer has the right to opt out of the community choice aggregator without penalty.
- (ii) The terms and conditions of the services offered, including both a comparison of rates, resource portfolio and RPS schedule.

If a customer declines to opt-out but later wishes to return to PG&E service, it will face CPUC-imposed switching rules to return to PG&E service. These rules might include a minimum time on rates tied to wholesale electric spot prices and/or a minimum commitment to remain a PG&E customer.

5.3.2.1. Opt-Out, Direct Access Customers, and New/Returning Customers

Through its supply contract and directly with customers, the CCSF will need to manage the risk of customers leaving the CCA Program and going to Direct Access or Bundled service with PG&E. It must also address contractual obligations for customers that seek to return to CCSF service or that are new residents and businesses in the city.

5.3.2.2. Leaving the CCA Program

CCA is a program that offers customers an opportunity to choose from whom they receive their electric power service. Customers who are eligible to participate in the CCA program and elect not to participate by opting-out during any formal or legal CCA opt-out period are of course not liable for any exit-fee from the CCA and are freely able to return or stay with PG&E or DA service. The primary methods for addressing customers that leave the CCA

Program and purchase generation service from either PG&E or through Direct Access outside of the formal opt-out period are:

- Exit fee – charge some customers either a set fee or a fee based on a formula for leaving the CCA Program outside of opt out periods;
- Minimum stay – After the opt out period expires, Participating Customers must stay with the CCA Program for a minimum amount of time;
- No City restrictions or penalties – Participating Customers can leave the CCA Program at will (however this creates volumetric risk for the ESP and could potentially place upward pressure on price);
- Opt out periods – establish periodic dates when customers can opt out without penalty.

Customers that leave the CCA Program and return to PG&E outside of the formal opt-out period will also be subject to CPUC switching rules related to tariffs available for customers returning to PG&E.

5.3.2.3. Returning to the CCA Program

The primary methods for addressing customers that return to the CCA Program from either PG&E or Direct Access are:

- No change in price, service or terms – Participating Customers may purchase power at the same price and terms as existing customers. Depending upon customer size this may be a substantial risk to a CCA supplier.
- Not allowed or limited enrollment – PG&E and DA customers cannot join the CCA Program or they may join but only during certain enrollment periods.
- Re-price or new price. Customers that return receive a different price than initial solicitation price, which may be less favorable than existing Participating Customers.
- Minimum stay. Customers that return to the CCA Program could be required to remain a customer for some minimum time period.

5.3.2.4. New CCA Customers

All new retail electric service accounts in San Francisco (with the exception of new municipal accounts) will automatically be enrolled in the CCA program. However the CPUC requires that all new accounts receive an opportunity to opt-out of the CCA program. At this stage of program development it is recommended that the CCA “batch-process” new customer accounts on a quarterly or biannual basis to provide one opt-out notice to these customers.

5.3.2.5 Methods for Entering and Terminating Customer Agreements

This section describes the process by which customers agree to take service from the CCA, and the process by which customers may terminate service, except as may be provided in utility tariffs.

Customers who do not choose to opt-out of the CCSF implementation of CCA automatically shall become CCA customers. This shall occur after an ordinance is adopted by the City awarding contract to the City's chosen supplier, with two customer notifications from the City over a 60 day period prior to transfer of customers onto the new service, and two more notifications over 60 days as described in this Implementation Plan:

Opt-out notifications shall present the City's new proposed service in a transparent comparison of terms and conditions of service before and after switching to the City's chosen new service, such that a consumer can easily compare the prices and the intended resource portfolio of the CCA service with the prices and resource portfolio of PG&E. If a customer chooses to opt-out during this period by checking and returning the postage paid detachable opt-out card to the City or to PG&E, under law, there shall be no charge to that customer by any party, PG&E or San Francisco for electing to opt-out. As with PG&E, customers may obviously relocate from San Francisco and leave its service as a result, without any charge for leaving the CCA's purchasing contract with the supplier. After a new resident or business comes to San Francisco, they will be given the opportunity to opt-out after being automatically enrolled in the City's CCA program.

5.3.3 Program Basis Report

The Program Basis Report (PBR) provides an overall view of the program with the express intent of forming the basis for drafting the supplier Request For Proposal (RFP). The PBR will cover all the primary subject areas of the program including basic service, renewable infrastructure and efficiency. Its objective is to define features and design criteria for the detailed technical specifications, for governing body approval, and ultimately for implementation (there are outstanding issues on this point regarding how much background and analytical material must be provided by the City in an RFP versus how much of this effort should be left to the respondents to the RFP). The PBR will answer the key questions about the program such as:

- Which needs will be met by the supplier and which by existing organizations?
- What will customer service look like?
- How will the top technical issues be solved?
- What does the near- and long-term operating organization look like?
- What is the recommended procurement strategy?
- How will program risks be mitigated?
- How will we measure success?

The actual process of developing the PBR also has a purpose. Employing a disciplined and rigorous process to solicit input from stakeholders achieves the first level of stakeholder buy-in.

The LAFCO will complete the Program Basis Report, which will include:

- ESP Roles and Responsibilities
- ESP Procurement Strategy
- 360 MW portfolio definition – technology - siting
 - Wind
 - Solar
 - DG
 - Conservation
 - Efficiency
- Customer Service, Consumer Protection, Credit and Shut-off procedure Requirements
- Provisions for ensuring Universal Access, Reliability and Equitable Treatment of all classes of Ratepayers
- Provisions for Disclosure and Due Process in Rate Setting
- Stakeholder interface Management for Procurement, Implementation and Operations Phases
- PG&E Interface Requirements
- Commercial and Contractual parameters for the ESP Contract
- Detailed Program Cost Estimate for Implementation and Operations Phases
- Communications and Outreach Requirements
- Identification of regulations applicable to the CCA Program
- All 3rd party contributions available for the benefit of the program; such as grants, tax benefits and other financial benefits, as well as non-financial resources, such as research assistance

1. A core purpose of completing the Program Basis Report is to gather the results of critical analysis and decisions that must be completed before the RFP can be drafted. As such, the Program Basis Report will comprise the results of various research and data analysis efforts, some of which are described in further detail in items 3, 4, 5, 7, 9, 10, 11, 12, 13, 14, 15 and 16 below.

2. Identify and Remove Barriers to Program

An analysis of potential impacts to the successful implementation of the Program will be conducted, and for each, identify required mitigation measures. This analysis will address items such as: ratesetting equity issues, potential impacts of compliance with federal, state or municipal regulation, property/siting issues, safety issues, environmental issues, customer service requirements, and financial management issues, and any other issues determined to present potential barriers to the success of the Program.

3. Risk Analysis

The Risk Analysis of the Program will include the following perspectives:

- Technical
- Customer Service
- Rate Setting
- Property/Siting
- Cost Management
- Commercial/Contractual
- 3rd Party/PG&E interface

The Risk Assessment will evaluate the likelihood of occurrence, timing implications, the potential cost and other impacts associated with each Program risk, and mitigation measures that can be taken in advance to manage the risks.

4. CCA Lessons Learned

TheLAFCO will work to gain the benefit of lessons learned and best practices developed by CCA Programs in other states. This will include obtaining and reviewing key documents from the other CCA Programs, and requesting information on what worked well, and what didn't.

5. Hydro Options Analysis

The LAFCO and SF PUC Staff will review options for integration of Hetch Hetchy and other hydro power into the CCA power generation resource mix.

6. Design Low Income Ratepayer Assistance Program

The SF PUC/SFE will develop the Low Income Ratepayer Assistance Program.

7. Develop Overall Financing Plan and Detailed Project Cost Estimate

The LAFCO will work with the SFPUC to develop the overall financial plan and model for the Program. The Plan will address the following:

- CCA Program Management costs, including support services and costs associated with issuing the H-Bonds
- CCA Rate Structure
- Estimated costs for the ESP to design and install the renewable energy infrastructure, and to perform the conservation and efficiency work that will be included in the ESP Contract
- All costs that ratepayers/property owners may have to pay for the installation of renewable technology
- All costs that the CCA may have to pay property owners (public and private) to be able to install the renewable technology
- All collateral costs that the CCA may have to pay for the program, such as permit fees, legal fees, property acquisition or leasing, insurance, etc.
- All rates that the ESP may charge ratepayers
- Any 3rd party funds that may be available for the benefit of the Program under other State and Federal programs
- Any 3rd party funds that may be available to ratepayers for conservation, efficiency and renewable technology

8. PG&E and City Database Integration

PG&E is required to provide ratepayer data to the CCA Program. The data must be managed for confidentiality and security purposes, and integrated with City databases to provide the information needed to advance the CCA Program.

The PG&E database(s) may require data conversion to provide the information needed for the CCA Program. The LAFCO will develop and implement security and confidentiality measures appropriate to protect the data.

9. Develop PG&E Interface Plan

As PG&E will continue to provide distribution and billing services, the commercial and non-technical interface requirements between the CCA Program and the ESP with PG&E will be developed and any implementation activities identified. The LAFCO will work with PG&E representatives to identify all interface points, and activities necessary to implement the transition.

10. Customer Service Center (CSC) Analysis – Existing or new?

SF PUC/SFE will conduct a cost/benefit analysis of different CSC options to develop the recommended approach for the CCA CSC.

11. CSC Design – Processes and Systems

Once the CSC analysis has been completed, the SF PUC/SFE will develop the design to achieve the required CSC functions and capability.

12. Develop Communications, Marketing and Outreach Plan

The LAFCO will work with the SFPUC to develop the Communications, Marketing and Outreach Plan for the Program to develop and distribute the wide range of information that will need to be communicated to ratepayers and other stakeholders over the course of the program. The Success of the program will depend in part on how well it is marketed and communicated to its customers. The Plan will include the following:

- a general marketing campaign to publicize the program and to inform ratepayers of how the program will work, and how they will benefit from it
- a more targeted marketing campaign to work with larger commercial and industrial power consumers to educate them on the Program structure, and to work to encourage their participation
- the statutorily required communications regarding ratepayer's opt-out rights
- ongoing general publicity and media outreach to generate support for the program, and to inform ratepayers of the ongoing successes and benefits of the program to encourage their ongoing participation in the Program
- maintenance of one or more program websites where information on the Overall performance of the program - power generated through clean energy technologies, conservation and efficiency achievements are available
- one or more CCA Program multi-media promotion sites in prominent city locations to provide live and historic CCA Program information

13. Design 360 MW Portfolio

For the installation of each element of renewable power generation technology and for the conservation and efficiency measures to be implemented under the CCA Program, the LAFCO will work with SF PUC/SFE to develop the specific approach to be used. For all installations, a technical description of what will be built, and the location and time frame for the installation will be identified. Similarly, for the conservation and efficiency measures, the specific approaches that will be used to achieve the required efficiency improvements and conservation measures will be identified, and cost estimates will be developed.

Building on the determinations made as to how and where the renewable power generation technology and efficiency and conservation measures will be implemented, there will be a determination of which elements of the work are to be conducted by the CCA, and which are to be conducted by the ESP. Some Wind power infrastructure and conservation and efficiency measures will be conducted by the SF PUC and SFE. Once these technical definition, location, responsibility and schedule determinations have been made, the allocation of funds for the infrastructure elements, and ownership issues will be addressed, and detailed cost estimates will be developed.

14. Design PG&E Technical Interface

In addition to the business and organizational interface with PG&E described above in item no. 9, there may also be technical issues associated with the transition to having PG&E distribute power supplied by the ESP, and conduct the billing process. The SF PUC/SFE will work with PG&E to identify all such technical issues so that the RFP for the ESP will identify technical requirements necessary for the ESP/PG&E interface.

15. Property Acquisition/Siting/Permitting Analysis

Depending on the selection of specific approaches for meeting the 360MW requirements of Ordinance 86-04 as described under item no. 13 above, the LAFCO will conduct an analysis of required siting and property acquisition for the infrastructure installation. Maps will be developed showing relevant data for the renewable infrastructure implementation.

Once determination of the locations for the 360 MW implementation have been made, the LAFCO will work with SF PUC/SFE to conduct an analysis of all required permits, to identify those permits necessary for the CCA to obtain prior to implementing the project, and those that the ESP will need to obtain. If any complex permits, such as an E.I.S., are required, the process, timeline and resources needed for obtaining the permit will be identified.

16. Identify applicable regulations and support CPUC regulatory process

In addition to the specific parameters the CCA Program must comply with under AB 117 and Ordinance 86-04, there may be existing state, federal and local regulations applicable to the work to be conducted by the ESP, and to other elements of the CCA Program. The LAFCO will work with the SF PUC/SFE, and the City Attorney to develop a policy analysis to identify all regulations that will or may apply to the CCA Program, and the measures that will be needed for ongoing compliance.

17. Develop Rate Setting Advisory Board

The LAFCO and SF PUC/SFE will establish a Rate Setting Advisory Board to advise the Board of Supervisors on CCA rate setting.

5.3.4 Needs Analysis, Stakeholder Surveys And Interviews

To prepare the Program Basis Report LAFCO will identify the key requirements and features across all program functional areas. Territories to be covered include:

- Goals and objectives
- Technical elements
- Customer services
- Stakeholder engagement
- Commercial and contractual issues
- Public policy
- Program support including training and outreach
- Program management, schedule and phasing

This is a classic needs analysis. The implementing entity should employ two approaches to conducting the needs analysis. On the one hand, it is a straightforward process of tapping internal and external experts to leverage best practices and develop the new, creative elements. On the other hand, there is a survey and interview process conducted with a broad range of stakeholders to make sure their voices are heard and that the program addresses elements seen as key in their eyes. The constituency analysis discussed in the Outreach Section of this plan provides a good resource for determining how San Francisco residents and businesses should be engaged in the PBR process, such as the design of energy efficiency program and solar photovoltaic lay-away program, employment opportunities, and interface with community institutions.

5.3.5 Procurement Strategy

The procurement strategy will be developed by building on the information developed through the Program Basis report development process. Each factor developed through this process must be sufficiently addressed in the procurement, and the procurement process itself must provide adequate information, and allow sufficient time, for bidding suppliers to develop complete and responsive proposals.

There are a number of approaches that can be used to conduct a complex procurement, including:

- Single round low-bid
- Single round price and other factors
- Two phase low bid; initial proposals with no pricing, final priced proposals
- Two phase as above, price and other factors
- Negotiated, with Best and Final Offer (BAFO)

The pros, cons and relative timeframes of each possible method will be considered in selecting the procurement strategy, considering the development factors referenced above along with any statutory restrictions or guidelines applicable to the implementing entity.

Program Risk Analysis and Mitigation

There has been significant analysis of the risks associated with CCA program development. The CCA Procurement will be structured such that CCSF will share risk with the supplier, CCSF will bear some of the risks of the CCA Program.

Risk Areas:

- Regulatory (on-going CPUC regulation)
- Strategic (resource portfolio decisions and rate setting approaches)
- Volume/Participation (customer opt-out and weak economies of scale)
- Operational (customer loss, customer non-payment, etc)
- Market (CCA's cost of power relative to what PG&E can buy and the extent to which the CCA can insulate itself from unfavorable market conditions)
- Execution (Successful execution of contract with a supplier and effective coordination between the supplier, the SFPUC and other City departments)
- Default/Credit (Need of a contingency plan for supplier default or breach of contract)
- Program Termination

The primary risk associated with the CCA program is start-up risk. CCSF shall use general funds to get the program funded and staffed to do the many tasks described here that are supposed to occur prior to the issuance of an RFP. Under this program, CCSF will not assume any risk or enter into any binding commitment to assume responsibility for service and resource adequacy requirements for participating customers until after an RFP has been

issued to suppliers. Thus, while this Implementation Plan does not incur any liability until it has collected further information from the energy industry, there is some risk of not getting a successful set of bids from prospective suppliers, and thus not recouping the initial City investment in the program.

The San Francisco CCA Program involves complexity and a number of intergovernmental and business participants. Accordingly, the program needs to be well organized and efficient to ensure that all potential issues are identified well in advance, and addressed in a timely fashion. This effort is one of the key elements in successfully eliminating or mitigating complex program risks. Said another way, in a complex program environment, the application of early proactive efforts to issue identification and resolution should reduce the quantity of problems ultimately faced by the program.

One of the most significant success factors for the CCA Program will be how effectively and fairly risk is allocated between the CCA Program and the supplier, especially for the renewable power generation elements. The CCA Program will need to complete the risk assessment and allocation process prior to finalizing the RFP documents and the supplier contract terms agreed.

For the CCA Program, there are a range of risk areas that track the program phases. During the Program Development phase, the CCA Program will face risks relating to the process of completing the 'checklist' of necessary steps required to get the program to the point where an RFP for the supplier can be issued.

As the implementation phase proceeds, the risks will shift to include the range of risks common to large-scale infrastructure projects.

The approach to managing these risks is for the CCA Program staff to identify the risks inherent in each of its activities across the phases of the program, and then to develop effective strategies to eliminate, mitigate or allocate these risks between the CCA Program, the supplier and possibly other stakeholders if appropriate.

It is often tempting for an owner to allocate as much risk as possible to a contractor for various reasons, especially in a performance driven, turnkey or Design, Build, Operate, Maintain (DBOM) contracting arrangement. However, there are two main disadvantages to this approach; the likelihood of excessive bid price contingency and a higher likelihood of conflict and claims as the project advances.

Effective risk allocation is the process of determining which party can best manage a given risk by virtue of its strengths and resources. A review of the costs and impacts that may be associated with the risk can be an effective method to test the choice of a party to manage a given risk. If having that party manage the risk is projected to be the most effective in reducing impact, and containing costs, this confirms that the right party has been selected to manage the risk.

In order to facilitate the timely rollout of the 360 MW according to the CCA-supplier agreement, CCSF must take responsibility for removing permitting and zoning barriers to non-polluting facilities. If the City permitting process proves far slower than assumed in the contractually agreed-upon roll-out the City shall exempt the supplier for non-performance penalties associated with those deadlines for which the City failed to provide permits.

Supplier rollout delays associated with PG&E Interconnect delays shall also be exempt from non-performance penalties.

There are three steps that can be used to guide the risk allocation process. The first is to identify the nature of the expected project risks, and determine whether they are 'known' or 'unknown' risks (discussed in further detail below), the second is to assess the relative capabilities of the CCA Program and the supplier to manage or mitigate each of the risks. The third is to determine if risk should be assigned to the CCA Program, the supplier, a third party stakeholder, or shared. If shared, this step includes developing the criteria for sharing the risk.

This plan proposes that a supplier perform a majority of the wholesale electricity business functions required to operate the CCA. For example, the supplier should assume responsibility for daily power operations: scheduling power and settlement with the California ISO. That responsibility will extend to resource procurement risk management and credit management with generators, though the level of that responsibility may be affected by decisions around municipal power plant ownership. The wholesale power responsibilities of the supplier should be guided by resource planning direction provided by the CCA both in the RFP and as necessary with additional interaction with the supplier.

5.3.5.1 Risk Identification

The CCA will first complete a categorical identification of the significant risk factors that will be or are expected to be present as the project is advanced. Once the specific risks have all been identified, the nature of the risks will be determined. A key determinant is whether a risk is 'known' or 'unknown'.

5.3.5.2 Determining the Nature Of The Risks

A 'known' risk is one where the supplier would be in a good position to understand the nature and extent of the risk, and to identify the possible range of its cost impact. A 'known' risk on a lump sum infrastructure project could be a quantity risk taken by the contractor, where the exact quantity of a certain item cannot be determined until construction is in progress, but the upper and lower ranges of required quantities it is predictable. The allocation of this sort of risk to the contractor is commonly used for many lower cost elements of an infrastructure project, such as routine electrical system or plumbing components.

By contrast, an unknown risk is one where the Contractor must accept responsibility for elements of a project without having complete information. For example, requiring a

contractor to excavate a number of sites to build foundations without telling the contractor anything about the ground conditions, or allowing the contractor to perform their own site evaluation presents the contractor with an unknown risk. As should be obvious from this example, this is not an ideal approach, because the contractor will have to include ‘worst case’ costs in its bid price.

5.3.5.3 Allocating the Risks

Once the risks have been identified, the next determination is of whether the CCA Program or the supplier will be in a better primary position to manage each risk as the project proceeds. Generally, those risks that are more toward the ‘known’ end of the scale, have potentially smaller proportional cost impact relative to the bid price and will be more closely related the supplier’s scope of work are better managed by the supplier.

By contrast, the management of the ongoing cooperation required from city agencies is an area where the implementing agency, not the contractor, is in the better position. Accordingly, this is typically the implementing agency’s responsibility– so if the City has a permitting problem – then no “hit” on the supplier – correct? Some further examples of risks that are typically allocated to the contractor and the agency in a turnkey project are shown in the following table:

CONTRACTOR	AGENCY
<ul style="list-style-type: none"> ▶ Final design/functionality ▶ Quantity risk to achieve functionality ▶ Longer term quality (if DBOM) ▶ Schedule/completion Time ▶ Cost (inflation/currency) ▶ Procurement ▶ Coordination 	<ul style="list-style-type: none"> ▶ Providing access and cooperation at all project site locations on time ▶ Input/changes from Service Providers ▶ Community/political input ▶ Force Majeure events ▶ Changed site conditions ▶ Changes in regulations

5.3.5.4 Risk Sharing

Many project risks are predictable and incremental. This means that if the most likely predicted outcome for a risk element is given an arbitrary value of 100%, it is more likely that the actual experience will be a result closer to the predicted 100% than a result that varies widely from the predicted outcome. Accordingly, an owner can reduce ultimate costs by taking the responsibility for less likely, worst case scenarios.

As certain incremental risks can have significant costs, the CCA Program may benefit from a risk sharing approach for some elements of the renewable infrastructure risks to prevent excessive contingency pricing. A typical risk sharing structure for incremental risks is to include a set of tiers in the contract pricing structure. The first tier is the lump sum price; up to a certain threshold, all costs associated with this element of risk are the contractor's responsibility. Above the first threshold, there can be some shared tiers where contractor and the agency are each responsible for set percentages of the costs, and then the CCA Program would take full responsibility at the higher threshold level, which has a lower probability of being reached.

The selection of the actual thresholds and percentage amounts is critical in whether or not this approach will succeed on any given project. The first challenge is to make sure that it ends up functioning as a risk mitigation structure, and not as a bonus pool for the contractor. The key to this is to ensure that the supplier bears more of the initial risk through the tiers, with the CCA Program's responsibilities phasing in at the higher end, to 'cap' the risk. The idea is to structure a hurdle of supplier risk between the lump sum price and the tier(s) where the CCA Program pays most of the costs.

In conclusion on risk allocation, effective analysis of the potential risk factors, and strategic allocation based on the best approach to managing the risk should allow the supplier bidders to more accurately assess the amount of contingency funding to include in their pricing for the risks they will be assigned under the contract. Once the allocation has been determined, it is important for the CCA to work closely with the supplier bidders to make sure that they understand both the extent of the risks that they will be responsible for, and any limitations on this risk that will work to protect them. This communication process is beneficial, because when contractors fully understand the risks they will be responsible for, they are less likely to assert claims based on incorrect or incomplete understandings of these risks as the project proceeds. At the point of implementation, large infrastructure programs often include a pilot phase.

A limited deployment of the ultimate installation, or pilot, carries with it advantages and disadvantages, some of which are identified in Exhibit 5-2.

Exhibit 5-2
Pilot Considerations

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> ▶ Evaluate system performance and customer experience and make adjustments prior to full roll-out ▶ Limit risk of large scale failure or issues ▶ Gain incremental stakeholder support as a step toward full roll-out ▶ Create a internal performance incentives for system provider to do the right thing or risk not progressing to full roll-out ▶ Gain working knowledge of new processes required by city departments (e.g., permitting) 	<ul style="list-style-type: none"> ▶ May increase ultimate cost of the program ▶ Risk losing momentum on full program because resources and stakeholders focus only on the pilot ▶ Increases overall schedule

Because the City has already conducted related programs in various forms, including solar installation on Moscone Center and the Generation Solar program, the City has already realized many of the typical benefits of pilot programs. These programs in particular have provided valuable insight into the solar program elements including some experience with customer perspectives, contracting, permitting and financing solar installations as well as experience with the technology itself. As such, the City has little more to gain from additional pilots and should move forward with the largest initial implementation feasible. See Section “Generation Solar” below for further description of the Generation Solar program.

In any case, pilot or not, it is necessary to stage implementation in manageable phases. The nature of this program lends itself to a logical phasing at the highest level. Initial “Basic Service” without a significant renewable or efficiency component can start shortly after supplier is selected. The efficiency components can be ramped up rapidly with an ongoing component that can run in parallel with the renewable program elements. Wind, solar and distributed generation (DG) each flow to a logical timeline with DG being the quickest to design and implement, wind following next, and then followed by in-city solar which is most complex and requires the longest timeframe. Within each of these renewable elements, there will again be a logical phasing that the implementing entity will need to detail out with the selected supplier.

5.3.6 Property/Siting

In order to advance the installation of the renewable energy components, the CCA Program, whether the supplier or the City must secure access to appropriate sites, and the rights required to install the equipment. This process could take a number of forms, depending on

how certain elements of the CCA Program are structured, and also on the form of ownership for any given site.

A wide range of commercial terms could be appropriate, ranging from situations where the CCA is compensated for placing the equipment to instances where property owners grant these rights on a lease or ownership basis, or takes services from some of the power generated by the facility, to instances where the CCA Program provides some form of compensation in order to use an especially suitable site. And, regardless of the commercial terms, it is expected that more complex agreements will be necessary to secure the required rights for installations where the site is owned by a business, or a governmental entity.

Responsibility for site selection and the transactions costs of site negotiation belong to the supplier, but the LAFCO shall provide critical support to the site acquisition process, including assistance with permitting to facilitate an uninterrupted roll-out. Payment for sites would be made by the CCA supplier according to its contractual agreements with site owners and costs for acquisition recovered in rates.

The first step in property rights acquisition is a site selection process. The site selection process must be structured to ensure that the renewable power generation equipment is allocated in an equitable and unbiased manner, and does not favor one class of ratepayers over another. To the extent that facilities are tax-exempt H Bond financed, the benefits of these facilities must be shared equitably by participating ratepayers. To the extent that facilities are taxable H Bond financed, individual ratepayers may purchase the benefit of such facilities for private purposes,

The City's role in site acquisition may be very minor or non-existent in the case of taxable bonds since the supplier and the site owner will presumably develop a competitive economic sharing of the economic gains from the site. However for tax-exempt H Bond financed facilities, the site selection process will be followed by property rights negotiation, and once the rights have been secured, the management of the property rights.

5.3.6.1 Site Selection Process

The first step of the site selection process will be to identify the larger range of potentially suitable locations for the installation of renewable power generation equipment. If the CCA supplier undertakes this site assessment then the City can provide electric ratepayer data from PG&E to identify as a first cut the largest potential CCA customers who might have an interest in on-site renewable DG. This data would be transferred to property maps to identify the broader range of potential sites for the installation of the required renewable power generation equipment.

In parallel, a public information process will be conducted to advise property owners how the CCA Program works, and that property owners will be able to have renewable power generation equipment installed on their property, through a selection process. It will inform them of what the process would entail from their perspective should they choose to participate. It will also identify the agreement terms for property owners who wish to have

renewable power generation equipment installed on their property. The attached budget (Appendix B) outlines the staffing and resources required for this process.

It is expected that, from both the CCA Program perspective in terms of procedure, and from the property owner's perspective, the process would be quite different for different types of property owners. For example, both the rights agreement and installation process would be significantly different for a single family home and a building owned by a large national business. The public information process will provide detailed information describing both the installation and longer term power generation and use processes for the different types of property owners expected to participate.

Following the public information process, interested property owners will be able to participate in the site selection process. All of the sites for the generation of renewable power that can be developed as supply-side power facilities will be selected on a combination of proximity to serviceable loads, structural suitability, site cost relative to the expected power output, and the site's power generation capability, using weather, light, wind and other data as appropriate.

The sites for the generation of renewable power that are used just for a customer's on-site power needs must be based on an equitable process to ensure that the benefits of this equipment are shared among all participating ratepayers. The solar power is to be used only for or primarily for on-site consumption via SGIP rebates, but sharing the benefits among all CCA customers will require real-time customer meter data reporting, energy facility output monitoring and related database work that must be performed by the LAFCO. A range of methods can be used to ensure this outcome.

5.3.6.2 Property Rights Negotiation

Once sufficient sites have been identified, by either the supplier or the City, to allow for attrition, the work to secure the required access rights would begin. Obtaining the required property access rights for the installation of the renewable power generation infrastructure could be one of the more demanding elements of the CCA Program. The challenges include the time required to secure the access agreements, the wide variety of both the physical locations and the types of property ownership. Working with these variables, it is likely that a variety of forms of agreement would be required.

A number of policy decisions relative to the actual approach to securing the site locations will be developed. Some of the policy areas to be defined are:

- (a) What terms would the CCA Program be able to offer property owners? As incentives to participate in the program, and in terms of protections for the owners and their properties?
- (b) What 'rights' approach would be used to secure the necessary agreements? Would the CCA Program be able to or want to acquire ownership of certain properties if necessary?

- (c) Could property owners be compensated for access, or would an offset agreement be used based on their power consumption?
- (d) Who would own the renewable power generation equipment?
- (e) What entity would be responsible for negotiating the agreements?

These and other related questions need to be addressed in order to develop the approach to securing the property rights necessary for the installation of the renewable power generating equipment. And the development of the approaches to be used will in turn dictate a range of related elements, such as the expected pace of the rights acquisitions, and the relative roles of the supplier visa via the SFPUC in obtaining these property rights.

The renewable power generation infrastructure equipment will be located both in and outside of city limits. The sites selected for installation will likely have a range of ownership, including individual, small business, large business, and governmental ownership. Some of the sites, and decisions relating to use of the sites could be controlled by long term lessees, or multiple lessees. In some instances, it may be preferable to acquire a site outright, and in other instances, a long term lease agreement may be needed. Permanent or construction easements for access to the installation part of a site may also be needed.

In order to secure the desired access rights, a number of factors relative to the installation and long-term maintenance of the renewable power generation infrastructure equipment will need to be covered in the agreements with the property owners. For example, the owners may want to impose certain limitations on the intrusive effects of installation, such as limitations on hours worked, noise and dust, etc. And also, owners may request guarantees and recourse methods relative to any negative physical effects of installation on the building; either during installation or if latent defects in installation end up resulting in leaks or other problems.

5.3.6.3 Site Management

Once the property rights for sites have been secured, the next range of activities follows from the nature of the rights, both during the implementation phase, and into the Operations and Maintenance Phase. During the implementation phase, the implementing entity must take all agreed steps to maintain the access as per the access agreement. All collateral responsibilities, such as listing the property with CCSF's insurance provider must be attended to.

If the site is to be leased, payments need to be made, and any conditions reflected in the agreement must be adhered to. For example, if the CCA Program agreed to cover the cost of a structural inspection by an inspector of an owner's choice, the process for arranging and paying for the inspection must be conducted. If a site is to be purchased, the CCA Program must ensure that all elements of the transaction are carefully tracked, to ensure that the property transaction has been fully completed, all payments have been made, all required insurance is in place, etc. before any installation work proceeds.

The implementing entity must also ensure that its rights are preserved if changes in the ownership of a property occur at any point in the process. Obviously, provisions to this effect will be included in all original agreements, but there will likely be instances where a new owner is either not fully aware of or willing to comply with the original terms, requiring further resolution.

As the Program advances, a longer-term property management effort will be required to address all property responsibilities and issues. Are all required payments being made for each site (lease, fees, permits, etc.)? Is the CCA Program maintaining ongoing compliance with all of its obligations relative to each site? The CCA Program will need to develop procedures and apply staff resources to ensure that it manages all of its property related responsibilities effectively.

5.3.7 Associated Governmental Process

The CCA Program will involve a number of other governmental entities as it is implemented. Examples of the processes involving other governmental agencies include obtaining permits to using sites owned by other governmental agencies to securing any benefits available through governmental clean power and efficiency programs. In addition to formal involvement, the CCA will be a high visibility program, and as such, it will benefit the program to build and maintain political support.

In order to effectively manage all required governmental involvement, the CCA Program will first work to identify all the City, State and Federal governmental agencies will be involved by the nature of their jurisdictions. This will include all agencies that will need to provide any form of permits or other forms of approval for the CCA Program to advance, as well as agencies that have oversight roles. It will also include descriptions of all interface responsibilities that the CCA Program and the involved agency will have during the implementation and subsequent operation of the CCA Program.

It is expected that the main areas of intergovernmental involvement will relate to the establishment of a CCA, to the rate setting and related customer protection measures, and to the environmental and other land use regulations that may be involved in the installation of the renewable power generation infrastructure.

When all of the CCA Program's intergovernmental responsibilities have been identified, a schedule of required CCA activities will be developed to support the overall timing requirements of the program. Depending on the volume, nature and skill sets required, appropriate staff resources will be assigned to address the CCA's intergovernmental responsibilities.

The previous work in San Francisco to install solar power generation equipment at the Moscone Center and the Generation Solar program have served to familiarize and prepare affected City agencies for working with renewable power technology installation. It is expected that the CCA Program will benefit from progress made through these efforts.

In addition to intergovernmental responsibilities that the CCA Program will have, it may also be able to benefit from other governmental activities. A number of governmental agencies have ongoing programs in clean energy and conservation. From acquiring specific technology assistance or equipment, to participating in emissions trading, to gaining the benefits of research, there may be significant benefits to the CCA Program available through other complementary governmental agency efforts.

The CCA Program will first categorically identify all such complementary programs, and the specific benefits they make available. Then, depending on the nature of activities required to secure these benefits, appropriate staff will be assigned to coordinate the CCA Program's efforts to participate with these complementary governmental agency programs.

5.3.8 Methods for Entering and Terminating Agreements

This section describes the process by which customers agree to take service from the CCA, and the process by which customers may terminate service, except as may be provided in utility tariffs.

Customers shall take service on an opt-out basis after an ordinance is adopted by the City awarding contract to the City's chosen supplier, with two customer notifications from the City and County of San Francisco over a 60 day period prior to transfer of participating customers onto the new service, and two more notifications over 60 days as described in this Implementation Plan:

Opt-out notifications shall present the City's new proposed service in a transparent comparison of terms and conditions of service before and after switching to the City's chosen new service on the last day of the 120-day opt out period, such that a consumer can easily compare the prices and intended resource portfolio of the CCA service and the prices (informing the customer of the possibility of a rate increase by the CPUC) and resource portfolio (percentages of RPS compliant resources for utilities under state law vs. for the CCA under its intended 51% RPS rate schedule, and a comparison of the difference between an RPS based on purchased green power transmitted from areas remote from the customer, versus a "hard" RPS based on new resources built near to the customer.

If a customer chooses to opt-out during this period by checking and returning the postage paid detachable opt-out card to the City, under law, there shall be no charge to that customer by any party, PG&E or San Francisco for electing to opt-out. As with PG&E, customers may obviously relocate from San Francisco and leave its service as a result, without any charge for leaving the CCA's purchasing contract with the supplier. After a new resident or business comes to San Francisco, they will be given the opportunity to opt-out after being enrolled in the City and County's CCA program.

Ordinance 86-04 provides that the supplier shall transfer ownership, upon termination of a CCA supplier agreement, of all tax-exempt H Bond financed renewable energy, energy

efficiency or facilities to the City, and shall transfer ownership of all taxable H Bond or privately financed facilities to customers.

5.3.9 Supplier RFP Procurement

The effectiveness of the process used for the selection of the CCA Design Build Operate Maintain (DBOM) contract supplier will be one of the critical factors in the success of the overall program for a number of reasons. First, the procurement process must have a successful pre-qualification process, to involve the best potential supplier bidders. Second, the procurement process must be well structured, and then managed within the structure, to help reduce the possibility of bid protests. Third, the bid documents and contract must successfully and completely define the responsibilities expected of the supplier. Fourth, the bid documents and contract must be clear, complete and fair, to minimize the addition of contingency pricing.

The RFP sets the stage for the partitioning of risk between the winning bidder and CCSF in the contract. One crucial factor in designing an RFP is to set the supplier incentives to help fulfill the CCA goal. A rapid, well-built rollout using a shared savings/losses approach with a wholesale supplier will set the right incentives for aggressive supply contracting and a subsequent rollout of the 360 MW.

5.3.9.1 Pre-Qualification Process

Because of the complex nature of the supplier's role, it will be important to structure a pre-qualification process that on the one hand ensures that a wide range of potential supplier's are informed of the upcoming supplier procurement, and on the other hand, is effective in eliminating teams that do not have sufficient resources and capabilities to successfully fulfill the responsibilities assigned to the supplier.

The San Francisco CCA program is a pioneering effort in that it combines elements and scale that have not been addressed in a U.S. CCA Program. The supplier will need to perform a number of functions, comply with a number of complex regulations, and take responsibility for designing, building, operating, and maintaining a renewable energy power generation facility, monitoring production and making power scheduling adjustments. Accordingly, each supplier bidder will likely consist of a team of firms, combining their efforts to address these obligations.

While the supplier bidder teams will need to have strong financial capabilities on a team-wide basis, it will be especially important for the CCA Program to develop 'filtering' criteria appropriate to ensure that smaller, well qualified firms can be part of an supplier team. A number of other specific qualification criteria geared toward the CCA Program will only be able to be developed on the basis of the information developed through the Program Development Phase.

When the criteria for qualification as a supplier have been set based on the criteria and role for the supplier developed during the Program Development Phase, the CCA Program Director will develop the Request for Qualifications (RFQ) document. The RFQ document that will address the elements of the DBOM Contractor's Scope of Work as defined in the Program Basis Report, and will identify the technical, financial experience and other qualifications potential proposers will need to demonstrate in their responses to the RFQ to qualify for participation in the procurement for the SF CCA DBOM Contractor and Electricity Supplier.

Because of the bundled nature of the services to be performed under this contract, which include buying electricity on the wholesale market and implementing the 360MW roll-out, and providing operations and maintenance services for the infrastructure once established, it is expected that proposers will form consortia with different members providing different elements of the required services under the DBOM Contract. The RFQ will contain the descriptions of the commercial arrangements that are acceptable for proposers' team structures.

The RFQ will be drafted to ensure that potential bidder teams are required to demonstrate appropriate technical capabilities for the performance of the required work, and to demonstrate that they have sufficient financial stability and bonding capacity to qualify to participate in a project of this magnitude and level of public importance.

The RFQ process will result in the selection of a Short List of pre-qualified proposers. In addition to the development of qualification standards for potential proposers, the evaluation criteria and evaluation procedures will be developed for inclusion in the RFQ document.

Through public advertising and targeted notifications, the LAFCO and SFPUC will conduct outreach efforts to inform available bidders of the opportunity to qualify to bid for the CCA supplier contract. When the qualification packages are received, the CCA Program will conduct the evaluation process to determine which supplier bidders will qualify to receive the RFP.

5.3.9.2 Procurement Process

There are two important factors in the management of the CCA supplier procurement process; the development of clear, complete descriptions of the steps and schedule of the supplier procurement process, and then, as much as possible, sticking very closely to them. The schedule, events such as pre-bid conferences, process such as the written requests for information and clarification process, the addendum process will all be well defined.

In light of the complexity of the CCA Program, there will be an interactive process to communicate critical program information to the potential bidders. Complex projects are generally more successful if bidders are more involved in the bid process from the outset, and are requested to provide constructive feedback on the RFP documents. To that end, once this plan is adopted by the Board of Supervisors, the LAFCO and SFPUC will conduct a Request for Information (RFI) process that will incorporate questions regarding the qualifications

required of CCA supplier.. While the RFQ, RFP and other project documents are the primary forms of information exchange, this additional RFI effort on the part of the CCA Program is likely to result in better quality bids.

5.3.9.3 RFP Documents

Depending on decisions made in the development of the Program Basis Report the RFP documents will include all appropriate technical information needed by the proposers. This will likely include the technical requirements for all elements of the 360 MW Roll-out, the specific conservation and efficiency requirements, installation site location information, PG&E interface information, all ratesetting and other program financial information, standards applicable to the energy purchasing, customer service and confidentiality requirements, the draft DBOM contract terms and conditions, and detailed Instructions to Proposers.

The Instructions to Proposers will include the detailed Scope of Work and contract completion dates for the different elements of work required under the DBOM Contract. It will provide the detailed schedule for the procurement, the process for proposers to request clarifications, the protest procedures, the content and form requirements for the proposals, the Evaluation Criteria, and the pricing and rate sheets. It will also specify the performance bonding and insurance requirements required for execution of the DBOM Contract, and the security instruments the ESP will have to provide for the re-entry fees, the bid bond requirements (if any), and escrow provisions for bid documents if required.

The CCA RFP documents will be developed to achieve the following quality standards: completeness, consistency and lack of internal conflict. The release of poor quality RFP documents is likely to ultimately have far more serious schedule and cost impacts to the CCA Program after the supplier contract is awarded than the extra time and effort it would have taken to improve the documents prior to issuance.

Completeness includes the process of ‘designing’ each document’s content prior to drafting it to ensure that it will cover the required subjects, and later, confirming that all required content was in fact completed, and working to eliminate all gaps, missing appendices, attachments, forms, etc.

Consistency applies to the use of terminology, and to the structure of the document, especially to coordination of sections and cross references. To the greatest extent possible, the CCA Program team will work to develop defined terms, and use them consistently. Also, the documents will be cross checked near the end of the development cycle to ensure that related sections actually complement each other, that there are no conflicts in different provisions that apply to the same subjects, and that the cross references all check out.

The CCA Program supplier RFP will consist of the following types of documents:

- Instructions to Proposers

- DBOM Contract
- Technical Specifications
- Applicable Studies and Data

5.3.9.4 Instructions to Proposers

This document will provide all information necessary for bidders to understand how to respond to the RFP. This includes the supplier scope elements that the bidders must address, the bid cycle schedule, the evaluation criteria, the bonding or other financial assurance requirements, and all of the pricing and rate design forms.

It will also provide the schedule for all pre-bid information sessions, and descriptions of the subjects to be covered, the rules applicable to the process, the formal process by which bidders can request clarification or ask questions, and the process for the CCA Program to issue addenda.

It will describe the bid submittal content requirements (such as a bid bond, addenda acknowledgement sheets, proof of insurance, escrowed bid documents, etc.). It will also describe the bid opening process, the process for verification of the validity of the apparent selected bidder, and the process for contract execution. The RFP and Contract will require full compliance with all State and City laws relating to procurement, including all DBE/MBE requirements and in will be conducted in compliance with employment programs conducted by the Mayor's Office of Economic and Workforce Development (Job Creation in San Francisco).

5.3.9.5 DBOM Contract

The supplier contract will include all elements of the supplier's responsibilities, as further developed during the Program Development Phase. The supplier's responsibilities shall include the Design, Build, Operate, Maintain (DBOM) contract, making it responsible for both the traditional supplier role of commodity service, and for the renewable infrastructure element of the CCA Program. The selected supplier will be able to subcontract components of the work required under its contract. The contract will include a number of commercial elements, such as the payment provisions, provisions relating to the use of the revenue bonds and cash flow, completion dates for all phases, the ongoing insurance and bonding requirements, termination and warranty provisions. It will also include all requirements during the Operations and Maintenance phase, including customer service requirements and standards for the performance of required maintenance.

The contract will consolidate the ESP and 360 MW Roll-out responsibilities under one contract. Based on the scope and risk assessments reflected in the Program Basis Report, the DBOM Contract will contain appropriate risk management structures, to allocate risks to the parties in the best position to manage them, but not to the extent that bid prices are driven high by risk contingency.

The DBOM Contractor will be required to conduct the installation of the 360 MW in the appropriate manner for each type of installation site, whether at a residential, commercial, industrial or public location. Standards applicable to the design and construction of the 360 MW roll-out will be included. Subcontracting requirements will be developed to ensure that small businesses have opportunities to participate in the program in all phases. The DBOM Contract term will be structured to have sufficient duration for the lump sum based maintenance costs to drive initial quality. Provisions will be developed to ensure that strict installation quality and safety standards will be applied. Standards will also be included to address customer interface issues during installation. Ongoing operations and maintenance provisions will be developed for these functions based on the scope of these elements of the program as they are defined in the Program Basis Report.

The DBOM Contract will contain payment provisions for the 360MW rollout, and will address all financial elements of the program that involve the DBOM Contractor, as defined in the SF CCA Program Financial Plan. Guaranteed completion dates for the 360 MW roll-out, and milestones for other major phases of the program will be identified. Incentives for faster completion and penalties associated with failures of performance will be developed, if appropriate, depending on decisions made during the development of the Program Basis Report as to the goals for the various elements of the work to be performed by the DBOM Contractor.

The DBOM Contract will have all appropriate boilerplate provisions for a CCSF contract, including but not limited to ethics provisions, dispute resolution, suspension and termination processes, audit access, records maintenance, assignment, change management provisions, delay and force majeure provisions, subcontract management and payment provisions, bonding, insurance and indemnifications, passage of title, and risk of loss, completion and acceptance, warranties for the work, and the local, state and federal provisions applicable to the project.

The contract term will be established through the interactive bidder outreach process described above. The CCA Program staff will work with the eligible bidders to identify the contract term structure that both serves the best interests of CCSF, and is commercially reasonable for the bidders. The RFP will be structured to favour bidders that are prepared to commit to longer term contracts, especially those where the longer term results in a commitment to more favourable rates. The contract will also be structured to provide incentives to promote earlier completion of the 360 MW rollout.

Long-term savings from the program shall be used to offset higher start-up costs, offering participating ratepayers economic benefits of 51% physical energy independence by 2017 without a rate increase, as well as fixed, hedged or tagged rates for both residents and businesses, which PG&E cannot offer its customers, according to the supplier's agreement with the City.

The contract will also contain provisions for the conditional extension of the infrastructure elements of the program if the supplier has been successful in meeting rigorous performance standards applied in the contract. The City's authority to issue H bonds is not limited to the

renewable infrastructure elements required under Ordinance 86-04. If the CCA Program (including repayment of the first set of H bonds) is successful, another set of renewable power generation infrastructure elements can be initiated.

5.3.9.6 Technical Specifications

Wherever possible this document will also provide the technical and performance standards for the renewable energy generating equipment, and for conservation and efficiency technology. It will cover all design and installation requirements. It will include all quality and durability requirements, and address compliance with all codes, environmental regulations and other industry standards.

5.3.9.7 Applicable Studies And Data

All applicable data that has either been collected by the CCA Program or developed during the Program Development Phase will be provided to RFP respondents. This may include PG&E ratepayer data and power consumption data, (screened and redacted as appropriate to preserve confidentiality), and if deemed necessary as a result of the RFI process, site location data (again this means the staffing necessary to compile site location data), and available conservation and energy efficiency data.

5.4 Methods for Entering Agreements with Other Entities

The CCA Program will need to have a number of major program elements in place prior to actually entering an agreement with its supplier. These will be defined more fully during the Program Development Phase, and will likely include: having the Revenue Bond issue structure in place, having all required major permits for the renewable power infrastructure, etc. Once these elements are in place, and the RFP is issued, the CCA Program will conduct the procurement process, following the procedures described in the Instructions to Proposers document. This will include preparing for one or more pre-proposal conferences as appropriate, developing and issuing responses to all formal requests for clarification and questions, preparing and issuing any necessary addenda.

This section describes the process by which the City will enter an agreement with a CCA supplier and a CCA Service Agreement with PG&E. Also described is the process by which the City could enter into a contractual relationship for renewable energy that will form part of the CCA portfolio.

As required by Ordinance 86-04, the Board of Supervisors will approve an RFP based on the requirements established in this Implementation Plan, responses to the Request for Information, and the advice of the LAFCO and SFPUC Commissioners. This RFP will be advertised in the San Francisco Chronicle, other major Bay Area newspapers, major energy and electricity publications such as Public Utilities Fortnightly, and will be mailed or e-mailed to all registered ESP's or non-utility sellers of electricity to consumers in at least the States of California, Ohio, New York, and in any of the Canadian provinces. There are several standard City approaches that will be used to ensure that the solicitation process yields the maximum level of qualified bids. Examples include:

- The RFP will incorporate the latest CCA customer load data, and provide the latest information on regulatory requirements and timing regarding any updating of these requirements;
- A Pre-Submittal Conference will be held, which may be streamed live by video for parties who can not attend in person;
- An RFP web site will be developed to answer all questions received about the RFP and substantive replies might become addenda to the RFP.

The procedures for reviewing technical proposals will include an initial review for completeness and responsiveness. For all proposals that have been determined to be conforming, the LAFCO in conjunction with the SFPUC will evaluate and score the proposals in accordance with the evaluation criteria. Then, the price proposals will be opened publicly, the scores totaled and a report of the LAFCO's findings submitted to the Board of Supervisors, which shall select the chosen supplier, if any, by ordinance.

The apparent winner's bid will be reviewed to confirm validity, that all required submittals have been included (such as the bid bond) and that the pricing does not contain any

significant errors. If the apparent winner is confirmed, then this bidder will be invited to enter negotiations (if the process is negotiated), or to provide the submittals necessary for contract award, such as the payment and performance bonds. When the contract has secured approval from the Board of Supervisors, the contract will be executed.

There are three primary contracting parties that the CCSF would need to transact with under a CCA Program: customers (residents/businesses), Pacific Gas & Electric (“PG&E”) and a CCA Supplier that is identified here for convenience in this section as an ESP. There are other parties that could have a direct or indirect impact on the solicitation and contracting process and outcomes.

The primary contractual arrangements under a CCA Program are the CCSF-ESP Energy Supply Contract, a Credit Agreement and Bonding agreement between the CCA and ESP, the PG&E Service Agreement with CCSF and any special or negotiated Rate Agreements between the CCA and particular CCA customers.

The City will have strike a balance between precision and ambiguity in the language of the RFP, too prescriptive an RFP will reduce opportunities for innovative RFP responses – however too much uncertainty in the City’s requirements could also limit bids. At a minimum the CCSF will need to specify major risks and obligations, and assign them to the appropriate parties. These risks include price, volume, credit risks, and legal risks due to the City delegating its responsibilities as an LSE to the ESP. Program-related risks are discussed in further detail in the next section. Other examples of RFP requirements include:

- Identify the CCSF’s minimum bidding requirements i.e. the requirement for the 360MW roll-out and specific resources connected to this roll-out (e.g. resource mix, functional responsibilities, etc.), as well as the requirement to meet a 51% RPS standard by 2017;
- Specify proposal evaluation criteria and legal requirements, e.g. the ESP must meet the RAR set by the CPUC for LSEs;
- Provide flexibility for ESPs to manage risks and obligations;
- Avoid provisions perceived as unnecessarily risky by ESPs, such as termination for convenience clauses and limits on certain material change provisions (e.g. changes in key regulations);
- Possibly waive SF Administrative Code sections that would constrain electricity-contracting flexibility, (e.g. Section 21.9 and 21.35).

The award of the CCA contract to the chosen supplier will initiate the Implementation Phase of the program. Depending on the Program’s cash flow requirements, the first or subsequent H Bond will be issued. The RFP and procurement process will clearly reserve the right of CCSF to terminate or withdraw from the RFP or negotiation process with the supplier at any point should it become evident that the supplier responses to the RFP jeopardize or negatively effect CCSF’s program schedule.

5.5 Implementation

The implementation phase as discussed in this section starts upon Notice to Proceed to the supplier and continues to the point where operations begin. There are three main tracks upon which the implementation proceeds in parallel.

- **The first track** is that of Basic Service. This includes the customer outreach process, and leads to the point where the supplier takes over electricity supply to all customers except those who have opted-out of CCA. This track has a very short design phase, which is primarily focused around the seamless transition of customers. The major design elements of this track include the Communications outreach program to customers, implementation of addition of CCA electric matters to the existing SFPUC Rate Fairness Board tasks, implementation of the process to provide the CCA staff (in conjunction with the supplier) to offer especially designed electric rate options to select customers, design and implementation of the steps necessary to track cash flows from PG&E to supplier to the CCA Program and bond and staffing reimbursement costs, and from the CCA program to PG&E for CCA transaction costs, design, and implementation of steps to track and audit customer opt-out processing by PG&E as well as steps necessary to conduct on-going opt-out processing by the City. This track will also include commercial arrangements such as contracting to supply power to CCA customers, wheeling, billing arrangements and customer service provisions. The time between design and implementation on this track is short, only a matter of weeks, and it is driven largely by the statutory opt-out period.
- **The second track** is that of energy efficiency and conservation projects such as demand response and heat recovery and storage. In this track, the supplier under the general supervision of SFE takes on the administration of energy efficiency funds.

Although the design and implementation of this track stretches over a longer period, there is ultimately only a very limited “operational” element.

- **The third track** is that of 360 MW renewable infrastructure implementation. This track is primarily that of a large capital infrastructure project. It has the most complex implementation phase and its sub-phases are identified and described in the subsequent sections.

5.5.1 Program Management

Overall project management is the responsibility of SFPUC under LAFCO oversight, and covers a number of activities including:

- Defining and prioritizing program activities (Project Management Plan)

- Monitoring progress of tasks against the project schedule
- Identifying, analyzing and negotiating changes to contract and/or schedule
- Determining impacts and preparing cost estimates for changes
- Monitoring budgets and implementing cost containment strategies
- Verifying, evaluating, and negotiating invoices
- Preparing and progress and issues reports – covering technical, financial, contractual subjects
- Identifying, tracking and resolving project issues
- Preparing and distributing project information
- Maintaining a communications tracking system, for all formal and informal communications to and from the supplier and other stakeholders

Develop Project Management Plan

During the Evaluation and Award phase, the LAFCO and SFPUC will develop a detailed Project Management Plan (PMP) for the CCA's management and oversight of all functions under the DBOM contract. The Plan will identify the resources and responsibilities applicable to the management of the DBOM contract once its contract has been awarded. The PMP will address the following items:

- cost management
- schedule management
- change order management
- property acquisition/mapping
- contract management/administration
- issue tracking and resolution
- design review and approval
- safety
- construction oversight
- technical oversight
- QA/QC and inspections
- property owner interface
- 3rd party coordination
- operations oversight

H-Bond Structuring

In parallel with the completion of the RFP documents, the LAFCO will oversee the development of the mechanisms and processes for the issuance of the Proposition H Revenue Bonds. This will include the selection of a financial services firm to conduct the bond issuance, as well as the establishment of all required CCA Program elements associated with

the issuance and longer term management of the bonds. An estimated Program cash-flow will be developed to support analysis of possible bond issue sequencing.

The CCA Program will create a number of assets with the potential to generate revenues, using funds generated by the issuance of the Prop H bonds. In preparing for the issuance of the Proposition H bonds, a number of considerations will have to be explored. These include the determination of which revenues from which assets and enterprises will be pledged as security to support the issuance of the bonds. It also includes the assessment of whether the bonds will be tax exempt, which will again depend on the ownership and use of the financed items. Depending on the choices made in developing the 360 MW portfolio, and other program decisions reflected in the Program Financial Report and the Program Basis Report, the appropriate plan for structuring and issuing the revenue bonds to support the CCA Program will be developed and described in the CCA Program Revenue Bond Report.

In addition to the questions relating to the structuring of the bonds, there are issues relating to the issuance of the bonds. The issuing agency will need a bond rating, which may already exist, depending on which governmental entity issues the bonds. Other factors, such as the expected cash-flow needs of the DBOM Contractor for the implementation of the 360 MW will be considered relative to timing and quantity of funds to be raised by each tranche of the bond issue.

ESP Program Financial Management System

The LAFCO will work with the SFPUC to develop and establish the systems that the CCA will use to manage all funds associated with the work conducted by the DBOM contractor. This will include setting up required accounts, as well as the establishment of all procedures necessary to process invoices and make required payments. Procedures for the documentation, tracking and reconciliation of any required withholdings from amounts requested by the DBOM Contractor, adjustments for over or underpayment and the management of all 3rd party funds will be developed.

Design and Construction Oversight

The LAFCO and SFPUC staff will implement the design and construction oversight measures described in the Construction Management Plan. Technical committees with appropriate skills and expertise will be established to review design submittals in their discipline areas. A construction oversight team will monitor all active construction work, and perform both regularly scheduled and spot inspections. The DBOM Contractor's construction schedule will be analyzed and critiqued as necessary to ensure that it remains a productive project management tool, and not a basis for the development of claims against the CCA Program.

The DBOM Contractor's Design Build Phase may be ongoing, and overlap with the Operations Phase, in that it is expected that installed power generation systems will go on-line as they are completed.

Issue H-Bonds

Once the Contract is awarded, the first round of H-Bonds will be issued, in accordance with the actual cash-flow needs of the ESP contract. As actual program expenditures are made, the remaining H Bond issues will be released to support the Program's funding needs.

Manage ESP Implementation Payment Process

The LAFCO will review all payment requests for payment by the ESP for its implementation work, and will manage all payment adjustments and deductions needed over the course of the implementation phase. The LAFCO will complete detailed ESP payment reports quarterly, which will identify all payments made, all amounts withheld, and the status of all open reconciliation efforts.

Inspection/Testing/QA/QC

The LAFCO and SFPUC staff will perform all required QA/QC inspections and verifications, as described in the Project Management Plan. The implementing entity will be responsible for controlling, monitoring, and enforcing the supplier's compliance to all technical and operational requirements, terms, and conditions, as specified in the supplier contract as the program moves from design to testing and ultimately to installation. The implementing entity will also monitor the supplier's performance to quality assurance (QA) standards, compliance with their own quality assurance program, and provide oversight during all phases of testing, manufacturing, and installation. The supplier shall test all components, sub-systems, and systems processes constituting the system individually and together. The major inspections and tests to be conducted include:

- Unit Inspection and Testing
- Production Inspection and Testing
- Interface and Integration Inspection and Testing
- Installation and Acceptance Inspection and Testing

Contract Management/Administration

The LAFCO's contract staff and SFPUC staff will review the DBOM Contractor's compliance with the contract terms on a monthly basis, and work to address any open contract issues. This will include the development of a proactive administrative action requirements compliance analysis, as well as the implementation of a hierarchical issue tracking system that includes detailed project-by-project information, and rolls up to a higher level monthly Program Issue Report.

Contract Enforcement – City Attorney

If legal measures are required to enforce compliance of the terms of the ESP contract, such issues will be referred to the City Attorney by the LAFCO.

Change Order Management

The LAFCO and SFPUC staff will manage the change order process, as described in the Construction Management Plan. The appropriate technical working groups will be established to review potential changes. The contract staff will evaluate all change order cost proposals from the DBOM Contractor and work to negotiate competitive, fair and reasonable prices for all change order work.

5.5.2 Outreach

A main purpose of the Outreach effort is to create a widespread positive perception among the individual and business customers that the CCA is being implemented with the main purpose of benefiting and protecting the City's electricity customers. It also will include the process for informing customers of their right to opt out of the CCA Program, and provide the process for opting out.

The core customer groups are the traditionally defined residential, commercial and industrial ratepayers. It is also recognized that a small group of business customers represent a large portion of the overall power load, and thus are important participants in the CCA. Because of the importance of their participation, additional outreach will be conducted to inform these customers of the benefits of the CCA Program.

Beyond these core customers, there is a wide and diverse set of stakeholders with varying levels of program interest and communication needs. The stakeholders range from the site owners of renewable infrastructure elements to various city agencies, regulators and the private sector. A comprehensive outreach program recognizes all stakeholders. As the CCA Program is developed, key elements of the program will be identified to form the core of the marketing approach used in the outreach effort. Also, areas of anticipated stakeholder concern with the CCA Program will be identified, again, to ensure that these points are positively addressed in the marketing effort. The marketing strategies will be developed to target each type of CCA Program stakeholder.

CCSF businesses and organizations that are not served by PG&E today will not become CCA customers unless they opt-in with CCSF's consent. This category of customers includes BART, and existing Direct Access (DA) customers. A key strategic decision for CCSF will be how to attempt to recruit existing DA customers whose high electricity usage may help to lower power costs for all CCA customers.

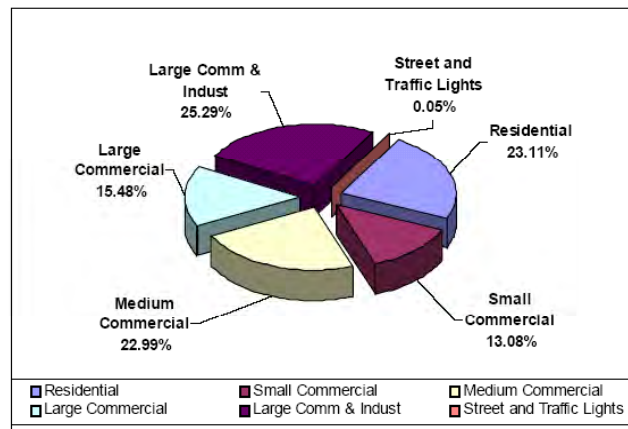
The approach to establishing communications goals and their supporting messages includes:

- Identifying stakeholder audiences and the most effective vehicles/messages to reach them

- Conduct stakeholder analysis: identify who to focus on and why
- Identify the appropriate vehicles and channels for each stakeholder group
- Develop appropriate messages for each stakeholder group and assess the level of effort in tailoring the messages accordingly
- Outline a specific plan to implement communications activities. This plan would build upon the Communications planning to date as presented in Chapter 8 of the SFPUC/SFE Draft Implementation Plan of April 2005. The plan will be a “living” document so that its tactical approach can be adjusted as the project evolves. It will include items such as:
 - Timing and key milestones
 - Stakeholder pulse checks
 - Development of stakeholder targeted marketing strategy
 - Feedback approach
- Define reasonable measures of performance for the communications goals

Although no market research has yet been conducted about customer response to potential products and services offering from a CCA in CCSF, basic customer demographics and energy usage patterns are available. Notably about 25% of larger business customer electric load in CCSF is currently served through DA - this equates to about 12% of the total potential CCA load. These accounts, some of the largest electricity consumers in the city, while they will be automatically enrolled in the CCA are expected to opt-out due to their pre-existing Direct Access contracts. However there is an opportunity to recruit these customers upon the expiration of their contracts if the CCA wishes to do so. This might be worthwhile since large business customers offer a significant revenue base and often have electricity usage profiles that are flatter than average. Flatter profiles can potentially lead to lower costs to serve those customers and if their flatter profile helps to flatten out the average CCA profile, this may reduce electricity costs for all customers. **However it is the higher revenues available from CCA large business customers that are the most important consequence of their decisions to opt-out or choose CCA.** In addition maintaining a diversity of CCA customers will help reduce the regulatory risk of the CPUC advantaging any particular customer class in its PG&E rate design proceedings.

Estimated Generation Revenues By Customer Class



The chart above demonstrates the importance of large customers who comprise about 64% of the potential CCA revenues but only comprise a little over 1% of potential CCA accounts. CCSF residential customers also consume a smaller proportion of electricity in the higher consumption tiers 3, 4, and 5 than the PG&E average. This is important since PG&E electric generation rates for these tiers are far higher than the Tier 1 and 2 rate levels. Opt-out of CCA residential customers who consistently take power in tiers 3, 4 and 5 could also adversely impact the overall economics of CCA. It is important to recognize that the generation portion of electricity delivery costs varies significantly among customer classes and therefore the impact of higher than PG&E generation rates on customer's bills will also vary. For example for the average CCSF residential customer the generation portion of the electricity bill is about 35%, whereas for the largest commercial customers the generation portion of the bill is about 65%. Hence the city should anticipate that large commercial customers would pay particular attention to the rates offered by CCA.

Current DA customers returning to bundled PG&E service must provide six months of advance notice and, once returned, must take utility service for at least three years. Thus, in order to prevent a customer who might be attractive for CCSF from choosing utility service upon their DA contract expiration, a CCA marketing team would have to identify attractive customers and recruit them to CCA service in advance of the expiration of their DA contract.

5.5.2.1 Balancing Seamless Operations With Program Visibility

The old adage "all press is good press" does not hold true for a program that will touch the daily lives of all participants by delivering a commodity fundamental to the functioning of modern society. From a customer perspective, the CCA program should be operationally seamless and undetectable. There can be no electrical service interruptions, no customer service interruptions, and no billing problems. Rates must meet or beat existing rates. In many respects, implementing the CCA program without a single customer noticing would be a great success.

While a level of "invisibility" is the goal on the basic operational front, other elements of the program need visibility. In particular, the implementing entity needs to communicate around

program identity and the regulatory elements. Positive messages to reinforce local control, reliability and clean energy, as well as general public education of the program, need to find their way to stakeholders.

In addition to traditional channels, the CCA outreach can take on a creative flavor because of the generally positive public response to cleaner technology. For example, a citywide “clean meter” could be provided on a CCA website, which would show the current program-to-date kilowatt hours provided from renewable sources. A similar large scale ‘meter’ could be located in one or more public spaces. On the regulatory front, communications concerning opt-out, rate setting disclosure and due process need to reach appropriate audiences.

5.5.2.2 Communications Plan

The **LAFCO and SFPUC will** develop a Communications Plan that ties all the outreach elements together. Developing the plan begins with an iterative process of constituent analysis and outreach goal-setting. The plan recognizes some key factors:

- People and organizations are naturally resistant to change
- Communications need to reach a multicultural community
- The customer base contains a wide range of entities, from individuals to businesses to governmental and non-governmental organizations
- The CCA program identity and image should portray the ratepayers as the ultimate winner
- The CCA program identity and image will be established as early as possible within any timing constraints regarding CCA decision-making and funding

The **LAFCO and SFPUC will** reach out to stakeholders while the next steps of the CCA decision-making process are undertaken.

The primary goals of the Communications Plan are to achieve a broad sense of community ownership of the new CCA program, prepare customers for the inevitable changes that will come with the migration to a new way of receiving electricity, anticipate public information needs and develop material that make the program easy to understand, and ensure that emphasis is placed upon special market segments such as low-income and non-English-speaking customers.

After clearly defining goals for the CCA program and for outreach efforts, it is important to know what to monitor and track to measure the progress toward these goals. Program goals and outreach goals are intertwined. Success at the program level is the ultimate end, and the outreach efforts help achieve that success. The Communications Plan will set out the metrics to measure progress and at the appropriate time assign resources to monitor and track them.

The Communications Plan addresses both proactive and reactive communications. This section primarily focuses on the proactive elements, although many of the same channels and strategies can be applied to reactive or responsive outreach. A closely related topic, that of Crisis Planning, is not covered here, but would have a communications component as a critical part and will need to be addressed in the requirements of the supplier RFP.

5.5.2.3 Outreach Channels

Depending on the program phase, the types of outreach and the lead for those outreach efforts may vary. During the Start-up, Program Definition and Procurement phases, the implementing entity will define and run all outreach efforts. Once the supplier is selected, outreach efforts become a joint initiative between the implementing entity and the supplier. Finally, in the operations and maintenance phases the supplier and the long-term CCA organization run the outreach program. Regardless of who is leading the Communications Plan activities, the following channels can support outreach efforts:

Public Meetings—Public meetings serve a dual function. These gatherings provide an opportunity for the public to learn about upcoming activities and changes and allow the implementing entity to help customers plan for these changes in order to retain their support. Additionally, promotion of the meetings is an excellent way to interest community leaders, the media and the broader public in the CCA initiative.

Stakeholder Forums— Intergovernmental forums (e.g., Chamber of Commerce), advisory groups, grassroots organizations, professional associations with relevant constituents and local and county-level forums already in existence can service as immediate channels for communicating information at every phase of this effort.

Local Events—An annual event plan identifying opportunities to demonstrate renewable and efficiency elements, such as participating in local college and community events using a booth with technology prominently featured, affords a low-cost venue to disseminate project information to a wide audience.

Direct Mailers/Grocery Bags/Utility Bill Inserts—Beyond the required insert notices, alternative methods of educating the public about the CCA Program include these types of outreach. While direct mail may be cost-prohibitive, other alternatives are cost-effective and can reach targeted audiences with minimal effort.

Public Repositories—A list of public buildings, offices, and stores that could serve as repositories of project information is a valuable asset. Promotional posters along with other informational materials that have been developed could be used at these sites. Local libraries and government offices are ideal locations.

City Publications—City agency public information offices can disseminate information for inclusion in monthly internal/external publications.

Telephone Information Center—This call-in number would have pre-recorded information, updated regularly.

5.5.2.4 Press Outreach

A credible program—one that clearly represents the public interest and that has a clear and measurable goal—will generate news. This important premise guides all aspects of successful press outreach. Activities leading to successful press outreach include:

- Develop a media training session for prospective project spokespersons
- Coordinate, as needed, with the City and County officials to time releases, and to forewarn officials of a possibly controversial news item (i.e., schedule delay, technology breakdown)
- Prepare a comprehensive media presentation package. The materials will include a brief, straightforward background sheet, project fact sheets, brochures, photographs for print, stock video footage for broadcast, profiles on key project representatives, and copies of current news releases
- Schedule information meetings with key editorial and assignment staff from all newspapers, radio, and television stations in the region
- Schedule guest appearances for project representatives or notable authorities on public affairs programs to keep the public informed of the project's progress
- Inform the media of any workshops or presentations by key figures involved in the project
- Draft periodic news releases updating media outlets of project progress
- Draft occasional feature articles about key milestones in the project
- Continually monitor regional news coverage of project and respond to reports with additional information and clarification
- Monitor news coverage of similar projects in other parts of the state, or the nation and link the project by inference to successes elsewhere
- Select materials should be prepared in Spanish and other appropriate languages to facilitate coverage by all media outlets

Press releases and outreach can be triggered by a predetermined set of milestones. As each milestone is achieved (contract award, design complete, initial roll-out, initial operations), a press release can be issued automatically. A complementary strategy is to develop press releases at key points in the process, following particularly insightful public meetings or after successful events. Exhibit 5-3 presents some of the primary components of press outreach.

Paid advertising is a way to reach large segments of the population. This plan assumes a significant expenditure will be required on paid advertising in order to support the

information provided in the opt-out notice and to reduce customer confusion regarding the CCA program. Elements of such an advertising campaign can include drive time, outdoor, 30-second radio and TV spots and newspaper ads.

Exhibit V-3 Outreach Components

COMPONENT	DESCRIPTION
Feature stories and columns	Articles placed in local newspapers, civic newsletters (church, business, day care and senior centers, etc.) and publications. Include information on renewable technology, the benefits to customers and a number to call for more information.
Script for guest appearances on local cable and radio morning talk shows.	Time appearances prior to major project implementation milestones. Radio timed to morning commutes. Position San Francisco as the state leader in clean technology.
Smart News	A publication designed to keep internal staff, media, and interested parties aware of program implementation progress.
Bill Inserts	Announcements should be timed to launch. Have full publications available to describe program in further detail.
Radio, TV Promotion	Develop stories, near key milestones and launch time, with one or two stations.
Press Kit	Include fact sheets or newsletter, list of Board members and political leaders, overview of program and technology. Include copies of logos and tag-line for use in publications.
Press Release	Article designed to focus on regional benefits, as well as cutting-edge technology. Timed to coincide with project milestones. Press invited to attend ribbon-cuttings.
Education Materials	Fact sheets, bulletins, newsletters, web sites and presentation materials. These can be tailored for outreach audiences as well as employees of targeted stakeholders.

5.5.3 Design

The first phase of the implementation process for the renewable energy technology infrastructure is design development and review. The implementing entity will be responsible for review of design submittals from the supplier in keeping with the approved

contract schedule. The design review determines whether the supplier's submittals are in compliance with the technical scope and contract, and all applicable federal, state, and local laws, statutes, ordinances, regulations, codes, orders, and decrees. Throughout the process, the implementing entity will need to evaluate any value engineering change proposals, and proposed modifications to existing installations or systems.

5.5.4 Intergovernmental Coordination

Throughout implementation, the implementing entity will need to coordinate the inputs and participation of many governmental and regulatory bodies. This function cuts across implementation phases and discipline areas. The most effective and useful ways of coordination would have been identified and planned for during the Program Development Phase and through the Communications Plan. Identifying key stakeholders and looking at the effectiveness of existing channels for communication amongst these stakeholders will play a big part in ensuring and improving upon any intergovernmental coordination.

Development of performance measures will be critical for understanding how well the program is being implemented, whether there needs to be changes to how feedback is collected, or how the program needs to become more convenient or provide greater customer value.

5.5.5 Performance Measure and Feedback from Stakeholders and Customers

The implementing entity will need to track and record the feedback from both stakeholders and customers. The ability to know what to track and how it will help with process improvement is important. These measures would have been developed during the Program Development phase as a result of clearly defined goals for the program and for communications efforts. Developing measures also must factor in how one part of the project touches another part so that measures roll up towards the high-level goals defined by the program. Identifying who will be responsible for tracking measures across the project and how that information needs to be reported will be critical for measuring project progress.

5.6 Operations and Maintenance

The final piece of a comprehensive implementation plan addresses the eventual shift from building a program to operating a service. By design, the implementing entity has a finite existence and must hand over long-term operating responsibility to another entity. The transition between implementing entity and operating entity will not be a single event. Rather, operating entity will phase in while implementing entity continues their work to build the program. Eventually, when the build phases are substantially complete, the implementing entity can phase out and the operating entity can fully take over.

5.6.1 Operating Entity Responsibilities

The logical long-term operating entity is the SFPUC. In the role as operating entity, they would have responsibility for:

- Supplier contract management
- Financial management
- Ongoing supplier performance monitoring
- Oversight of supplier maintenance
- Oversight of supplier customer services
- Ratesetting processes
- Operation of Customer Call Center
- Outreach and education
- Planning
- Follow-on contracting

CCA Advisory Board

Prior to the initiation of Basic Service from the supplier, the SF PUC Commissioners President will enlarge the terms of reference of the existing SFPUC Rate Fairness Board to incorporate CCA related matters. The Rate Fairness Board will be responsible for: 1) monitoring the rates charged by the supplier, and reporting any deviations from the contract rate-setting provisions to the SFPUC Commissioners and 2) for monitoring the resolution of customer complaints, and reporting complaints that are not resolved by the supplier within reasonable periods to both the Board of Supervisors and the SFPUC Commissioners, and 3) for monitoring the supplier's performance as it relates to significant energy market events, and advising both the Board of Supervisors of any energy market conditions that may effect the supplier's performance, and 4) monitoring the supplier's overall performance under the Contract. The Rate Fairness Board will prepare a quarterly report to be submitted to the Board of Supervisors as detailed below.

Supplier Rate Review

The Rate Fairness Board will conduct a quarterly review of the rates charged by the supplier across all customer rate classes, to confirm that all supplier rates are in full compliance with the contract's rate setting provisions. The Rate Fairness Board annual report will include a rate compliance report documenting the supplier's compliance with the contract rate setting provisions over the previous six months.

Complaint Monitoring

The Rate Fairness Board will maintain a record of all customer complaints received by the CCA Program, and a record of the party assigned to take primary responsibility for resolving the complaint (supplier, PSE&G, CCA Staff, etc.) The Rate Fairness Board's quarterly Report will 1) identify the complaints received during the past quarter by category of complaint, using categories developed by the Rate Fairness Board, 2) identifies complaints by category that were resolved during the reporting period, 3) identifies the number of open complaints pending resolution, and 4) identifies any complaint issues where there the Board has any significant concerns relative to the resolution of the complaint.

Energy Market Monitoring

The Rate Fairness Board will monitor energy market conditions and trends that may directly or indirectly affect the supplier's performance and/or costs of energy provided by the supplier. Because of the nature of energy market fluctuations and conditions that effect energy costs, Rate Fairness Board will advise the SFPUC Commissioners and the CCA Advisory Committee on an as-needed basis of any energy market conditions that arise that may affect the supplier's performance, as well as reporting on all such conditions in the Rate Fairness Board's Quarterly Report. In instances where longer term trends are reported on, the Rate Fairness Board Quarterly Report will include appropriate data supporting the reports conclusions.

Supplier Performance Monitoring

The Rate Fairness Board will monitor the overall performance of the supplier on an ongoing basis, and will advise the SFPUC Commissioners of open issues and any areas of concern relative to the supplier's performance, based on urgency as such issues arise, as well as reporting on the supplier's overall operational performance in the Rate Fairness Board Quarterly Report.

5.6.2 Methods of Terminating Agreements With Other Entities

While the whole purpose of a comprehensive implementation plan is to ensure a successful program, to protect ratepayers the City must always have the option of terminating it's a supplier contract and/or terminating the entire CCA program. In such an instance, the City must continue to provide power to customers through another means. In a termination scenario, continued service could be provided though an alternate supplier, the City itself (as a municipal utility), or by reverting back to the investor owned utility.

Contractual and technical terms for termination will be spelled out in detail in the supplier RFP and ultimately in the contract with the selected supplier. Termination clauses must be designed with care, as they can translate into potential risk for suppliers and therefore may manifest themselves in higher program costs.

The costs associated with termination and continued service must not result in costs above the "meet or beat" rates under the supplier rate proposal. Any costs falling outside those limits must be borne by the termination itself, for example, through the performance bond of

the supplier, legal proceedings for non-performance, or financed through savings expected from the change, for example, by changing suppliers.

CCSF will expend considerable political and financial resources to become a CCA and will likely enter into a multi-year contract with an Energy Service Provider which could be worth as much or more than a billion dollars. Investing in renewable energy and energy efficiency projects using Prop H Bonding will also involve a multi-year commitment from CCSF. Termination of the CCA program would involve complex and costly unwinding of these commitments.

In the case of supplier failure or breach of contract, CCSF would likely pursue its contractual rights while also signing a new contract with an alternative supplier.

Circumstances that could precipitate the termination of a CCA program include:

- SF CCA Power Prices Are Considerably Higher Than PG&E's for an extended period of time. This leads to customers electing to leave the CCA (despite switching rules that might be onerous), or alternatively calling for transfers from the general fund to decrease electric bills. In general this creates political pressure for CCSF to cease offering a CCA program.
- A Local Natural Disaster (e.g. significant earthquake) could also disrupt the distribution system, making it impossible to sell power resources to the community. This could cause substantial financial stress on the CCA (and of course on all city facilities), but presumably force majeure clauses of power contracts (or generation debt if City-owned) would apply. Hence it does not appear that a local natural disaster itself would cause CCSF to terminate the CCA program.
- Overall Market Failure Preventing Replacement of the supplier could require CCSF to terminate its contract and return customers to utility service.

In all of these cases, there are some common issues and impacts:

- Notification must be made to all CCA customers
- Customers must be switched back to utility service, according to rules developed by the CPUC in its CCA Proceeding;²⁷
- Legal proceedings are likely to be required to address contract issues with the supplier and possibly generators owned or contracted through CCSF
- Legal proceedings are likely to be required to address any bonding commitments made for any power production where CCSF is a part owner
- CCSF will likely need to perform staff reassignment or lay-off

There are several types of supplier default under a CCA Program:

²⁷ CPUC Rulemaking R.03-10-003, Decisions 04-12-046 (December 16, '04) and 05-12-041 (December 15, '05) .

- Non-Payment
- Failure to perform
- Misrepresentation
- Bankruptcy
- Criminal or unethical behavior

Provisions to address possible supplier default are required in the contract, including a termination for default provision and a remedy to insure the CCSF is not harmed by the default. Credit and financial assurance provisions as described below are also key provisions to address supplier default.

Credit and Financial Assurance

The CCSF will need to establish credit and financial assurance policies and procedures that protect it in the event a CCA Program Counter Party fails to meet its obligations. The policies and requirements imposed upon third parties by the CCSF will need to be specified in the supply contract or in a separate credit agreement.

These policies are likely to result in specific contractual provisions and related CCSF responsibilities. The primary responsibilities can be categorized as follows:

- credit application and creditworthiness process
- security process
- creditworthiness monitoring process
- credit policy evaluation process

The CCSF will need to adopt specific provisions in the supply/credit agreement that both protect it from credit exposure and encourage a large number of bidders. Balancing these often opposing objectives will require a specific strategy and set of policies. Common credit provisions are listed below.

- Termination payment provisions (liquidated damages) – in the case of default, provides the CCSF with compensation for the underlying value of the contract. Commonly calculated by taking the discounted present value of the positive or negative difference obtained by subtracting the value of a replacement contract from the existing contract.
- Step up provisions (under a multiple provider CCA Program) – in the case of default by CCSF's supplier, other contracted suppliers take on the defaulting parties' supply obligation usually by offering an option, not an obligation to the non-defaulting parties.

- Credit threshold and credit limit provisions – based on credit policies, there will be varied requirements for establishing and managing credit of suppliers under a CCA Program.
- Mark to Market credit exposure calculation – credit exposure is commonly measured through mark to market calculations that made daily or weekly based on market prices of electricity. These provisions require the supplier to post security according to the value of the contract. Credit exposure calculations commonly have margin call provisions as well, which specify the terms and conditions that a counter party obtains security from a supplier when it exceeds credit thresholds.

Termination for Convenience Provisions

Terminations for Convenience provisions are common in municipal government contracts, but present potentially substantial risk to suppliers. These provisions provide the right to terminate the contractor's performance without the government being liable for breach-of-contract damages. In addition to these general credit concerns, AB 117 also imposes a specific deposit requirement upon CCA and the proposed language of the RFP in Ordinance 0086-04 mirrors this language in stating that “qualifying Electric Service Providers post a bond or demonstrate insurance sufficient to cover the cost of reentry fees in the event that customers are involuntarily returned to service provided by PG&E” (Section 4-G). This requirement is likely to be met by any credit-worthy supplier – given, however the potentially very large number of customers and amount of load served by the supplier – it may be this requirement will increase the insurance requirements of a supplier – a cost likely to be passed on to the CCA customers.

6. CUSTOMER CHARACTERISTICS AND CONTEXT

6.1 Background

The electric customer composition and consumption characteristics of customers within San Francisco lay the foundation for the viability of a CCSF CCA program. Usage patterns and product expectations can vary significantly by customer type influencing how CCSF's supplier structures its energy commodity and energy services. In order to understand the CCA potential in San Francisco, it is essential that electric customer composition and energy usage patterns and characteristics be well understood within the context of electric generation rate design.

California law requires that CCAs provide universal service to all customers within the municipality's jurisdiction and provide an opportunity for such customers to opt-out of the program and continue service with the local Investor Owned Utility (IOU) if so desired. While the Phase 1 Decision of the CPUC left to CCA discretion the actual marketing of the CCA program it does require that CCAs clearly offer universal service to residential customers. It is the intent of CCSF to offer service to all customers who are available to take service. However, in San Francisco this does not mean that every electrical customer will necessarily be available to participate in the CCA. For example, CCSF municipal customers already being served by the Hetch Hetchy power system are presumed not to be available to participate in the CCA at this time. Moreover, there are some electrical customers within CCSF that are under contract and still receiving power services from ESPs via the Direct Access (DA) market, which was suspended to new customers in 2002 by the State Legislature as a result of the energy crisis. As their contracts expire, these DA customers may choose to participate in the CCA. Alternatively, they can continue to sign contracts and receive energy services from eligible ESPs in the California DA market.

Second, until the opt-out process is complete, CCSF cannot be absolutely certain of its final customer base, nor what the customer class composition of that base will be when it is required to deliver its first electron over PG&E's wires. What is certain is that the number, types, and usage characteristics of customers that participate in the CCA have direct feedback into the CCA's energy procurement strategy and costs as well as the potential rates the CCA can charge customers for power. Although it may be impossible to know definitively what the CCA customer base will be after opt-out, with load and customer data received so far from PG&E we do know what the market is for a CCSF CCA.

This chapter examines in detail the potential CCSF CCA customer base and its characteristics and context. Specifically, this chapter examines the following areas:

- The number and type of customers by customer class (residential, small commercial, medium commercial, etc.) as well as its consumption patterns.
- How the customers and load available to the CCA compare to PG&E's system average characteristics.

- CCSF's potential California Alternative Rates for Energy (CARE) customers – customers that receive a substantial discount on their energy bills based on economic eligibility.
- CCSF's Residential Class consumption patterns including baseline consumption data.
- Delinquent accounts and uncollectible funds data for CCSF.
- Data on CCSF accounts that are at least 60 days past due and eligible for service shut-off.
- The generation component of CCSF customers' bills that represents the CCA's potential energy procurement business opportunity.

SF PUC is acquiring electrical load data as directed by the Ordinance in a series of requests submitted to PG&E.²⁸ Prior to the CPUC's CCA Rulemaking Phase I Decision (D.04-12-046) issued on December 16, 2004, the IOUs only released data that was not protected under the CPUC's "15/15 Rule."²⁹ The "15/15 Rule" was established for direct access to protect customer confidentiality in data releases to electric service providers.³⁰

Pursuant to the CPUC's subsequent Phase II decision authorizing CCAs, not utilities, to decide what data is appropriate for their use prior to switchover, this Implementation Plan directs the LAFCO, SFPUC and City Attorney to request all data and all available data fields from PG&E, effective immediately, for purposes of further refining data contained in this section, and designing its portfolio and energy efficiency rollouts.

²⁸ The CCSF CCA Ordinance directed the Departments to acquire the following electrical load data from PG&E for purposes of this Draft Implementation Plan:

1. Energy consumption for each customer class for a given period of time;
2. Residential and nonresidential load shapes and most recent hourly load shapes;
3. Dynamic and static load profiles posted daily at PG&E's website by rate categories;
4. Number of current IOU customers;
5. Sum of customer non-coincident demand (kW or MW). (This data is used for calculating group diversity factors. The degree of diversity affects the utility's system requirements.);
6. Coincident peak demand (kW or MW) including the time of day and date (This data is used to determine the size of procurement contracts as well as revenue allocation and rate design.);
7. Electric load (kW or MW) for each hour of the year (8760 hourly loads) based on the most recent 12 months of load research. (This data provides information on the basic load shape for customer classes within a specific community or area of the community.);
8. Energy billing determinants (kWh) for each season and time of use period that applies to the tariff schedule (e.g. summer peak, summer partial peak, summer off-peak, winter peak, winter partial peak, winter off-peak, etc); and
9. Any other data the Departments deem necessary.

²⁹ As of the time of writing this draft, the IOUs were still developing data release procedures for potential CCAs pursuant to D.04-12-046.

³⁰ D.97-10-031 requires that any grouped data releases issued by utilities to electric service providers must contain at least 15 customers and no individual customer's information may be more than 15% of an assigned category (rate schedule for instance). The "15/15" Rule decision directed the utilities to protect data if the number of customers is below 15 or any individual customer's data exceeds 15% of the total by combining categories until the rule is no longer violated (blending data for two similar rate schedules for instance).

D.04-12-046 supports the claims of prospective CCAs that municipalities should be provided the necessary customer data to make an informed analysis of the prospects of a CCA program. The decision concludes, “CCAs can be entrusted with confidential customer information,” but established procedures to assure that “cities and counties do not seek information casually.” To those ends the Commission ordered that as a “condition of receiving utility information the mayor or chief county administrator sign a letter attesting to the city or county’s intent to “investigate” or “pursue” status as a CCA. (See attached letter).

6.2 Customer Types and Electrical Load Characteristics

At CCSF’s request PG&E provided the departments with 12-month energy consumption data and number of customers by rate class for the year 2003.³¹ PG&E provided the data divided into approximately 20 customer rate schedules, which the departments aggregated into 6 larger customer classes as shown below:

- Residential: E1, EL1, E7, EL7, E8, EL8 and E9A
- Small Commercial: A1, A6, A15, AG5B
- Medium Commercial: A10
- Large Commercial: E19
- Large Commercial/Industrial: E20
- Street and Traffic Lights: LS1, LS2, LS3, OL1, and TC1

To develop a load forecast for the CCA’s potential customer base in 2006, CCSF utilized PG&E’s system average growth rate of 1.65% as reported in its Long Term Procurement filing (R. 04-03-004) before the CPUC. Assuming that the number of customers will not vary significantly for CCSF a 0.5% growth rate was applied to the account numbers for all customer classes except Street Lighting and Traffic Controls.

Exhibit 6-1: CCSF 2006 CCA Snapshot

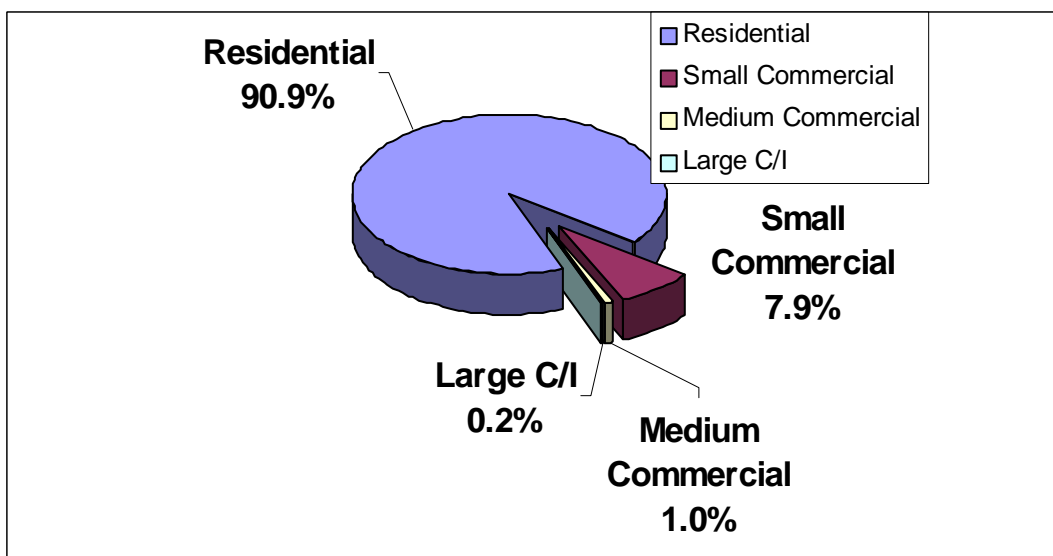
<u>Sector</u>	<u>Accts</u>	<u>Avg Annual Energy (kWh)</u>	<u>Total Annual Energy (MWh)</u>	<u>Demand (kW)</u>	<u>Avg Demand (kW)</u>
Residential	326,406	4,546	1,508,413	344,599	1.1
Small Commercial	28,356	18,854	543,438	124,384	4.4
Medium Commercial	3,525	211,121	756,558	164,652	46.7
Large Commercial	762	757,998	587,372	96,913	127.1
Large C/I	94	9,074,324	870,769	147,584	1,563.4
Street/Traffic Lights	329	5,322	1,780		

³¹ PG&E redacted many of the number of accounts (customers) fields due to a breach of the “15/15” Rule.

Non-Res Sub Total	33,067	2,759,916	533,532
Totals	359,144	4,266,550	878,131
Coincident Peak			808,410

Exhibits 6-2 and 6-3 below show the 2003 energy consumption and customer accounts by customer class data. Although the Residential Class alone comprises nearly 91% of all the potential CCA accounts in the City, it represents only 35% of total electricity sales. By contrast, Medium Commercial, Large Commercial and Large Commercial/Industrial accounts combined represent about 1.0% of the CCA's accounts versus 52% of electricity sales.

**Exhibit 6-2:
2003 Numbers of Accounts by Customer Class**



**Exhibit 6-3:
2003 Energy Consumption by Customer Class**

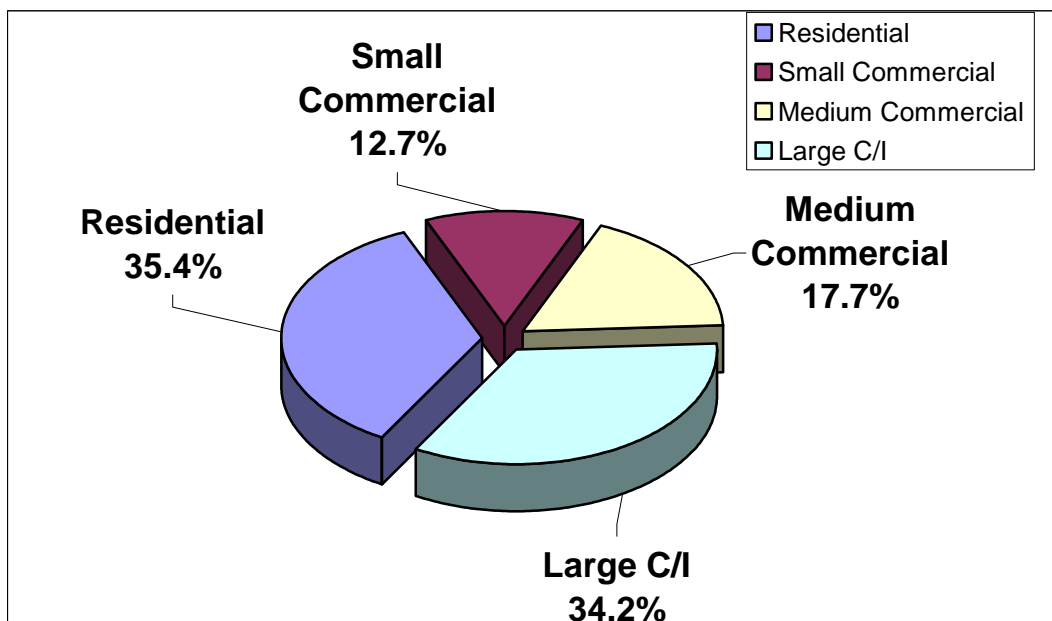
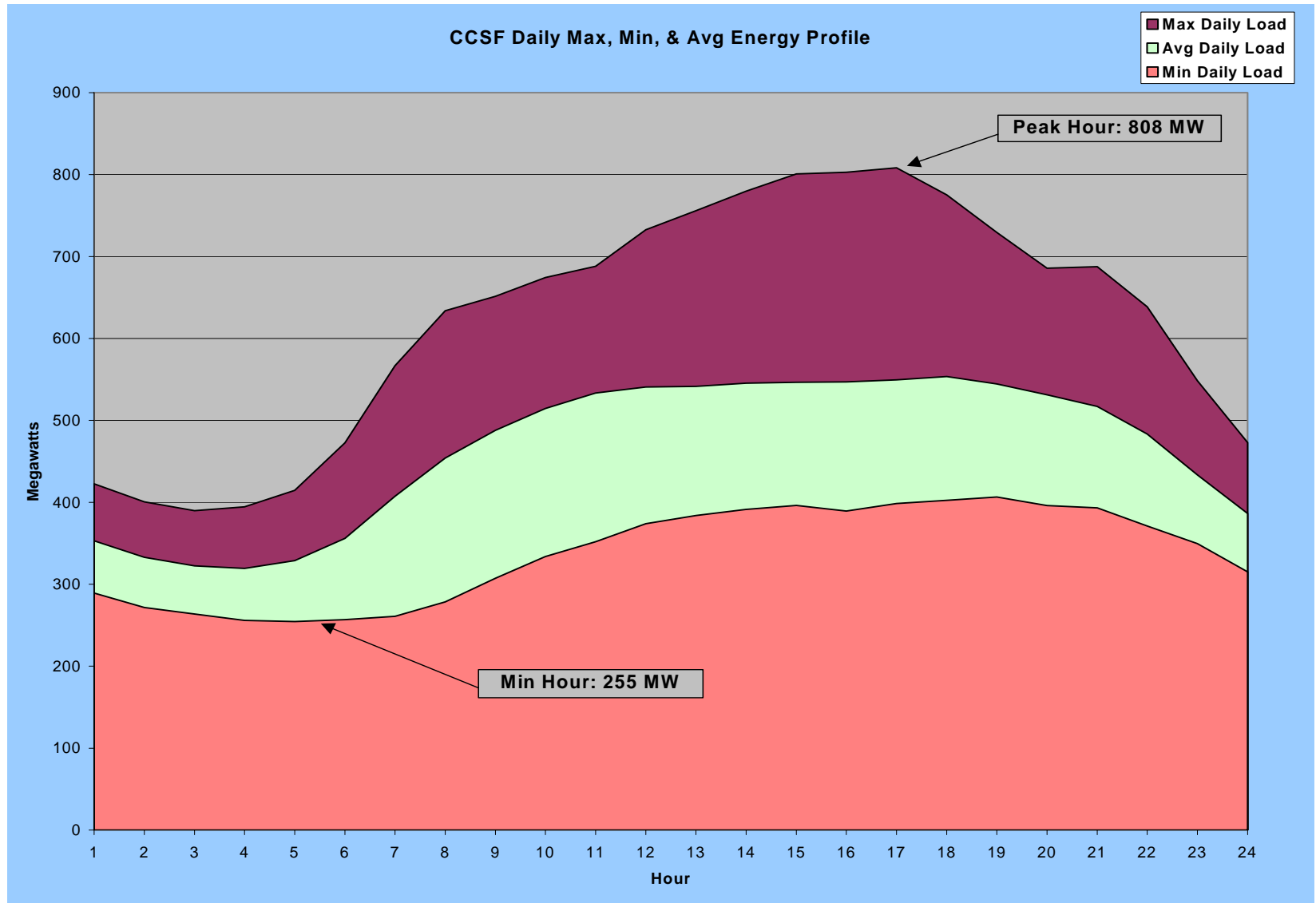


Exhibit 6-4: CCSF Daily Max, Min, and Avg Energy Profile 2003



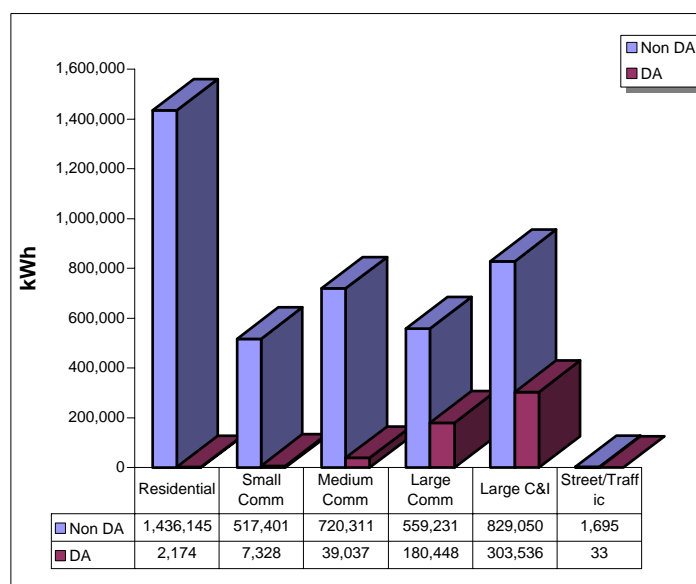
June 6, 2007

Chart 3 shows CCSF's maximum, minimum, and average hourly energy usage for 2003. CCSF used PG&E's system average load profiles also known as dynamic and static load profiles as posted on their website to shape monthly energy usage data provided by rate schedule.³² The CCA's demand peaks at 808 MW in hour 17 (5 PM) and reaches its lowest point in hour 5 (5 AM). However, on average CCA's peak load is between 500-600 MW at 12 through 6 PM and its minimum load is just over 300 MW at 4 and 5 AM.

6.3 Direct Access Electric Consumption in CCSF

The California Legislature created the direct access (DA) market in 1995 via Assembly Bill 1890, also known as the retail "Electrical Restructuring Act." The DA market allowed customers of the regulated utilities to leave the utility system to purchase electricity from private energy service providers (ESPs). The California DA market was suspended to new participants during the energy crisis of 2000-2001 by the CPUC in D. 01-09-060. The suspension barred new customers from leaving PG&E but allowed customers that were being served by DA providers at the time of suspension to continue being served by their ESP. The graph below illustrates the remaining penetration of direct access DA in the San Francisco market by customer class electrical demand.

**Exhibit 6-5:
Portion of CCSF Electrical Load Served by DA in 2003**



³² CCSF's use of load profiles in forecasting the CCA's load is discussed in greater depth in Appendix B: Load Forecasting Assumptions. PG&E's dynamic and static load profiles (system average load profiles) can be found at: http://www.pge.com/notes/rates/tariffs/energy_use_prices.shtml

In 2003, the DA market served approximately 12% of the electrical load in San Francisco. Notably, about 25% of the City's Large Commercial and Large Commercial and Industrial customers receive electric service through DA. These customers receive service from ESPs on a contractual basis. For this reason, customers participating in the DA market will not be automatically enrolled in the CCA during implementation. Instead, the CCA will need to determine if it wishes to pursue DA customers as their contracts expire. These customers will have to "opt-in" to the CCA program if they wish to participate.

6.4 Comparison of Potential CCSF CCA Customer Base to PG&E System Average

Since the City is assumed to offer CCA service to all eligible electrical customers within its jurisdiction it is important to assess the CCA from the perspective of zero opt-out, or 100% participation. Contrasting the characteristics of this customer base to PG&E's system average is also necessary because the CCA will be competing with PG&E for the customers within its jurisdiction. PG&E develops rates based on the characteristics and cost to serve their average customers within certain regulatory constraints. Those constraints include legislatively required discounts to low-income customers as well as rate caps for residential customers for consumption up to 130 % of baseline. These constraints limit PG&E's ability to charge rates that correlate with their cost to serve such customers. To the extent that the CCA competes with PG&E's rates for energy generation, the CCA ratemaking process will also be constrained by these regulatory requirements.

As a percentage of PG&E's system load and accounts, San Francisco represents roughly 5% of total energy load and 7% of total electrical customers. Exhibit VI-6 below compares CCSF's customer class characteristics for 2003 to PG&E's customer characteristics for the same year as reported in its Federal Energy Regulatory Commission (FERC) Filing (Form 1).³³ In order to establish a more apples to apples comparison of load between CCSF and PG&E, the departments selected only the customer account and load data for the rate schedules on which PG&E provides service to San Francisco customers. PG&E serves additional load to customers under rate schedules that do not exist in San Francisco. That data was not included in Exhibit 6-6 below.

³³ PG&E's FERC Form 1 is available on their website at: <https://www.pge.com/regulation/FERC-Form1/form1-2003.pdf>

**Exhibit 6-6:
CCSF and PG&E System Average Load Characteristics³⁴**

CCSF CCA (2003 Data)					
Sector	MWh	% of CCSF Total	Accounts 35	% of CCSF Total	Avg Energy (kWh)
Residential	1,436,144.88	35.3%	321,558	90.8%	4,466
Small Commercial	517,401	12.7%	27,935	7.9%	18,522
Medium Commercial	720,311	17.7%	3,473	1.0%	207,403
Large Commercial	559,231	13.8%	751	0.2%	744,648
Large C/I	829,050	20.4%	93	0.0%	8,914,515
Street/Traffic Lighting	1,695	0.0%	329	0.1%	5,152
Total	4,063,833	100.0%	354,139	100.0%	11,475
PG&E System Average (2003 FERC Form-1)					
Sector	MWh	% of PG&E Total	Accounts	% of PG&E Total	Avg Energy (kWh)
Residential	28,523,482	37.3%	4,282,914	89.3%	6,660
Small Commercial	10,748,068	14.1%	400,740	8.4%	26,821
Medium Commercial	12,128,831	15.9%	54,536	1.1%	222,400
Large Commercial	10,730,160	14.0%	10,460	0.2%	1,025,828
Large C/I	13,887,466	18.2%	1,125	0.0%	12,344,414
Street/Traffic Lighting	425,643	0.6%	46,305	1.0%	9,192
Total	76,443,650	100.0%	4,796,080	100.0%	15,939

As Exhibit 6-6 demonstrates, despite having a greater percentage of residential accounts, CCSF's electricity demand is slightly less residential than PG&E's. Small commercial customers are a smaller portion of San Francisco's overall demand than they are in PG&E's service territory. However, medium commercial and large commercial and industrial customers represent a higher portion of San Francisco's total load than they do in PG&E's system. Most notably, however, CCSF customers use on average less energy per account than similar customers in PG&E's

³⁴ 2003 Load data provided by PG&E. Data is not weather normalized. CCSF CCA data does not include BART, MUNI, or existing DA load.

³⁵ Medium Commercial, Large Commercial, and Large C/I account data was provided incomplete by PG&E due to application of the "15-15" Rule. CCSF estimated the total number of accounts for rate classes that were not provided by using PG&E's FERC Form 1 "KWh of Sales Per Customer" for these rate classes and dividing that figure into annual KWh totals for the associate rate classes for CCSF. CCSF is awaiting an update from PG&E pursuant to CPUC Decision 04-12-046.

system. San Francisco's average annual energy consumption per account in 2003 was approximately 11,475 kWh, whereas PG&E's was 15,939 kWh, or 39% more per account. San Francisco's lower average energy use per customer than PG&E's system average can be attributed to the impact of direct access, less air conditioning load, and less heavy industrial load.

6.5 CCSF Residential Baseline Percentages

PG&E charges residential customers different rates for electricity based on the volume of their consumption during a given billing period using a "baseline" rate system. Customer electrical consumption is tracked according to consumption "tiers," or levels of consumption within and above the baseline quantity. Generally speaking, the more electrical energy consumed over a billing period, the higher the rates charged on a per unit basis (kilowatt hour, or kWh). At CCSF's request PG&E provided residential energy consumption within the city for 12 months of 2003 broken into the 5 consumption rate "tiers."³⁶ Residential tiered data allows CCSF to better understand how much energy the average San Franciscan household consumes as well as the average rates paid for that energy. The tiered rate structure starts with a baseline amount that is determined by climate zone region and reflects the typical energy consumption requirements of those geographic regions.

Baseline³⁷

Tier 2 – 101-130% of Baseline

Tier 3 – 131 – 200% of Baseline

Tier 4 – 201 – 300% of Baseline

Tier 5 – 301% of Baseline and above

The IOU's are currently prohibited by the State Legislature (AB1X, 2002 legislative session) from raising residential electricity rates for consumption up to 130% of baseline, or through tiers 1 and 2. This rate "cap" presents a challenge for CCA rate design and price competition with PG&E. As discussed in more detail in Chapter 3: Ratesetting Dynamics, the CCA will need to decide if it wants to maintain the AB1X price cap for residential electricity consumption below 130% of baseline. The extent to which the average CCSF residential customer has more electricity consumption below the AB1X price-cap than does the average PG&E residential customer potentially leaves less room for the CCA to recoup generation costs from the residential customer class. The bar graph below illustrates CCSF's tiered residential energy consumption in contrast to PG&E's system residential consumption pattern. Tiers 1 and 2, which represent usage up to 130% of baseline, are grouped together as are Tiers 3, 4, and 5 in

³⁶ PG&E charged CCSF for this data on a time and materials basis.

³⁷ San Francisco is located in PG&E's climate zone T baseline region and has a designated baseline quantity of 8.5 kWh/account/day in the summer – May through October – and 10.2 kWh/account/day in the winter – November through April.³⁷ To calculate the baseline over the course of a billing period, the daily baseline quantity is multiplied by the amount of days in the billing cycle. If there are 31 days in a summer billing cycle, the allowable baseline quantity for a San Franciscan household would then be 263.5 kWh. For the same amount of billable days during the winter the baseline amount would be 316.2 kWh. Consumption above and beyond this baseline amount falls into higher rate tiers and the customer is charged the associated tier's rate for that consumption.

order to graphically demonstrate what portions of the generation bill are subject to the AB1X cap and which are not.

Exhibit 6-7: Comparison of the CCSF's Actual Residential Rate Tier Consumption to PG&E's System Average Applied to CCSF Residential Consumption³⁸

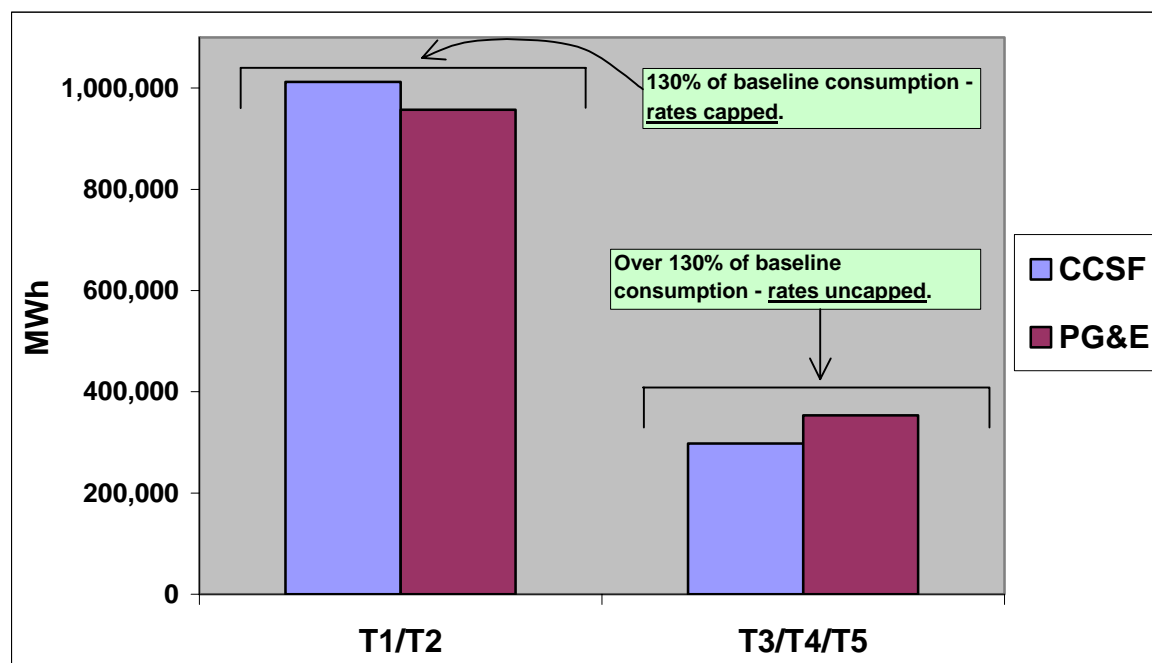


Exhibit VI-7 shows that in 2003 CCSF residential customers consumed more energy below 130% of baseline than did PG&E's system average. As a percentage of total residential electric energy sales, consumption in tiers 1 and 2 represented 77% of San Francisco's residential demand. By contrast, these same sales represented 73% of residential consumption in PG&E's system as a whole. This means that for San Francisco residential customers, PG&E can only raise its rate for 23% of consumption per 2003 statistics.

If the CCA uses PG&E rates as a ceiling for purposes of setting its own rates, the AB1X cap on residential electricity usage up to 130% of baseline becomes a *de facto* cap for the CCA whether or not the cap is formally adopted by the City. PG&E partially uses uncapped rates in tiers 3, 4, and 5, to make up for revenue shortfalls created by not being able to raise rates in the lower tiers. To the extent that the CCA's baseline consumption is higher than PG&E's and its uncapped consumption is lower, the CCA is forced to compete against a lower average generation rate for residential usage. The average generation rate for residential usage refers to what PG&E customers in San Francisco would pay if they stayed with the utility.

³⁸ Tiered residential energy consumption data for CCSF was provided by PG&E for 2003. CCSF obtained PG&E's residential baseline percentages from the CPUC Office of Ratepayer Advocates (ORA). For comparative purposes, CCSF imposed those percentages on top of its own total residential energy demand totals (kWh) for 2003.

Because PG&E's residential rates are tiered based on total consumption over the course of a billing period, the average volume of energy consumed in San Francisco impacts what the average rate a San Franciscan residential customer pays. Customers who consume more power above 130% of baseline pay a higher average rate and raise the overall average "rate to beat" in San Francisco. Moreover, in terms of cost allocation, the high use customers help keep rates low for those who consume most of their power within or around the baseline level.

6.6 California Alternative Rates for Energy Data

The California Alternative Rates for Energy or "CARE" program is a low-income ratepayer assistance program PG&E is required to provide pursuant to CPUC Decisions 89-07-062, 89-09-044, and 94-12-049. The purpose of the CARE program is to provide qualifying low-income residential customers of the regulated utilities reduced charges for energy. At the time of writing, PG&E residential CARE customers receive a 20% discount on their electric rates plus an exemption from the electric energy procurement surcharge.³⁹ The types of PG&E customers that qualify include all individually metered and certain sub-metered residential customers, non-profit group-living facilities, and qualifying agricultural employee housing facilities. CCSF is unaware of any of the latter type of CARE customers in San Francisco.

PG&E provided CCSF with data on participation in the CARE program in San Francisco for 2003 including the estimated number of CARE eligible customers, the number of enrolled CARE customers by rate schedule, and tiered energy usage by rate schedule. CCSF CARE data is shown contrasted with Non-CARE residential data in Exhibit VI-8 below.

Exhibit 6-8: 2003 San Francisco Residential CARE and Non-CARE Data

2003	# of Accounts	%	kWh Demand	%	Est. Revenues (\$)	%
CARE	39,371	12.24%	159,754,814	11.12%	\$4,259,624.74	7.44%
Non-CARE	282,187	87.76%	1,276,390,066	88.88%	\$52,972,631.54	92.56%
Totals	321,558	100%	1,436,144,880	100%	57,232,256	100%

To summarize, 12% of San Franciscan residential accounts participated in the CARE program, used 11% of total residential demand, and contributed 7.4% of total residential generation revenues in 2003. CCSF requested an update to PG&E's CARE data as well as information regarding estimates of "eligible" CARE customers in San Francisco. According to PG&E, in December 2002 there were an estimated 69,826 eligible residential CARE customers in San Francisco. At that same time there were only 38,637 customers enrolled, a 55% penetration rate. By July of 2004, the number of estimated CARE eligible customers in San Francisco dropped to 66,222 while participation increased to 82% or 54,571 customers. Whereas in 2003 CARE

³⁹ The exemption from the surcharge which was enacted during the electricity crisis effectively increases the CARE discount above 20%.

constituted approximately 12% of San Francisco's residential PG&E accounts, by the middle of 2004 that number had increased to roughly 17%.⁴⁰

For comparative purposes, at the beginning of 2005, 21% of PG&E's residential customers (including San Francisco) participate in the CARE program. PG&E has a service territory CARE penetration rate of approximately 70% (903,619 participating customers to 1,283,879 estimated eligible customers). With 100% penetration, CARE customers would constitute 30% of PG&E's residential customers and 20% of San Francisco's. Therefore, in contrast to PG&E system average, San Francisco has a relatively low portion of customers either eligible for or participating in the CARE program. However, CARE still represents a significant social policy and ratemaking challenge for a potential CCA in CCSF.

The issue of how to treat CARE customers within the context of CCA is an important issue. There is indication that CARE customers for CCA will be treated similarly to CARE customers that participated in Direct Access. Under Direct Access, energy providers sold their electrical commodity to residential CARE participants at the same rate as they would non-CARE customers. The distribution utility (PG&E) applied the equivalent discount to their portion of the bill. The CPUC identified CARE discounts for CCA customers as an issue that will be addressed in Phase II of the CCA rulemaking proceeding (R.03-10-003).

6.6.1 SF Delinquent Accounts Data

At CCSF's request, PG&E provided data on delinquent and past-due electric energy accounts for customers that receive service in San Francisco. PG&E tracks this data monthly for accounts that are at least \$50 and 60 days past due and eligible for service shut-off pursuant to CPUC Electric Rules 8 and 11.⁴¹ According to PG&E, delinquent balances on electric energy accounts in San Francisco represent 13% of total delinquencies in the utility's system. This figure is disproportionately high compared to San Francisco's contribution to PG&E's system total number of accounts (approximately 7%) and total electrical energy demand (approximately 5%). PG&E provided CCSF delinquent accounts data that included number of accounts by residential and commercial/industrial customer classes, total number of dollars past-due by the two rate classes by month, and the total amount of past-due dollars that are written off on a monthly basis. This data was provided for a one-year period beginning in September of 2003 and ending in September of 2004. Exhibit VI-9 summarizes the data below.

Exhibit 6-9: Delinquent Balances and Electric Write-Offs in San Francisco 09-2003 to 08-2004⁴²

⁴⁰ CCSF estimated this percentage by taking the number of CARE accounts in 2004 as compared to the total number of residential accounts in 2003. For this purpose CCSF made the simplifying assumption that the total number of residential accounts in San Francisco did not grow substantially over that timeframe.

⁴¹ Electric Rules 8 and 11 are available at PG&E's website: <http://www.pge.com/tariffs/ER.SHTML#ER>

⁴² Since PG&E does not track electric account delinquencies by billing components (generation, transmission, and distribution), CCSF had to estimate the portion of electric account balances over \$50 and 60 days past due attributable to generation. CCSF did this by first estimating what portion the generation commodity constitutes on the average electric bills for both the

Customer Class Group	Avg Estimated Monthly Electric Generation Revenues (2003)	Sum of \$50 Balances 60 Days Overdue (Gen Portion) - Monthly	Overdue Balances as a % of Gen Revenues	Estimated Monthly Electric Generation Write-Offs	Write-Off as a % of Est. 2003 Generation Revenues
Commercial / Industrial	\$15,860,064	\$1,605,809	10.12%	\$37,673	0.24%
Residential	\$4,769,355	\$822,157	17.24%	\$16,706	0.35%

According to the Exhibit 6-10, the generation portion of electric account balance delinquencies on an annual basis represent 10% of commercial/industrial revenues and 17% of residential revenues. Although these are high percentages of annual revenues for each of these customer groups, PG&E reports that it only writes-off about 0.25-0.35% of annual generation revenues as permanently uncollectible. This indicates that there are a good number of customers that “float” their balances over a couple months but tend to pay their bills eventually.

Exhibit 6-10: Delinquent Accounts and Average Overdue Balances Per Account in San Francisco 09-2003 to 08-2004

Customer Class Group	Total # of Accounts	Avg # of Delinquent Accounts/Month	Delinquent Accounts as % of SF Total	Total \$/Account per Month	Generation \$/Account per Month
Commercial / Industrial	32,252	292	0.905%	\$5,499.35	\$3,099.25
Residential	321,558	1938	0.603%	\$424.23	\$144.16

Exhibit 6-10 shows the average number of accounts in San Francisco that had overdue electric bill balances of at least \$50 for at least 60 days. Delinquent accounts, as a percentage of total accounts of the residential and commercial and industrial customer class groups, is minimal. According to the data provided by PG&E, these delinquent accounts represent less than 1% of the total accounts in each customer class grouping. The exhibit also disaggregates the total monthly balance of overdue accounts into an average account delinquency both by total electric bill and by generation component only. This statistic shows that on a monthly basis the average delinquent residential account was an estimated \$144.16 overdue for the generation portion of the bill only. Considering the average residential generation bill in San Francisco is about \$14.25 per month this is a surprisingly high figure. The average delinquent

Residential and Commercial/Industrial customer groups in San Francisco. Total bill and generation revenues for these classes were determined using rate schedule level kWh and energy demand data and PG&E's total and generation only rates (demand charges were also calculated for medium commercial, large commercial, and large commercial/industrial customers and converted into a \$/kWh adder). The total delinquent balances by customer group for the 12-month period from September 2003 to August 2004 was multiplied by the percentage of generation as a bill component for the residential (34%) and Commercial/Industrial (56%) customer groups. The same process was performed for calculating the generation portion of electric write-offs for the same 12-month period in San Francisco.

commercial/industrial account is overdue \$3,099.25 for the generation portion monthly. Although this is a much higher figure than is average for residential customers, it is also more in line with what the average customers in this customer class grouping pay on a monthly basis.

Delinquent account and balance information is important to CCSF in assessing CCA for several reasons. First, the CCSF CCA is required by law to *offer* service to all customers in San Francisco, regardless of whether or not they are currently paying their PG&E bills. Second, under the interim CCA service tariff proposed by PG&E, which mirrors “Rule 22” established for Direct Access service, the utility will not disconnect a customer’s service for non-payment of CCA charges. Only non-payment of PG&E charges warrants service disconnection. Moreover, partial payments received by the utility *on delinquent accounts* are applied to the utility’s disconnectable charges first. Under these rules a customer could pay only the PG&E (transmission and distribution) portion of the bill and not be discontinued from electrical service. The CCA’s only recourse in event of customer non-payment of CCA charges is to return that customer to full or “bundled” PG&E service. A better option to equitably handle delinquent or partial payments may include making failure to pay any charges on the bill, after a certain period, “disconnectable,” and applying any partial payments to amounts owed on a pro-rata basis. CCSF will seek to modify these rules in phase II of the current CCA rulemaking proceeding.

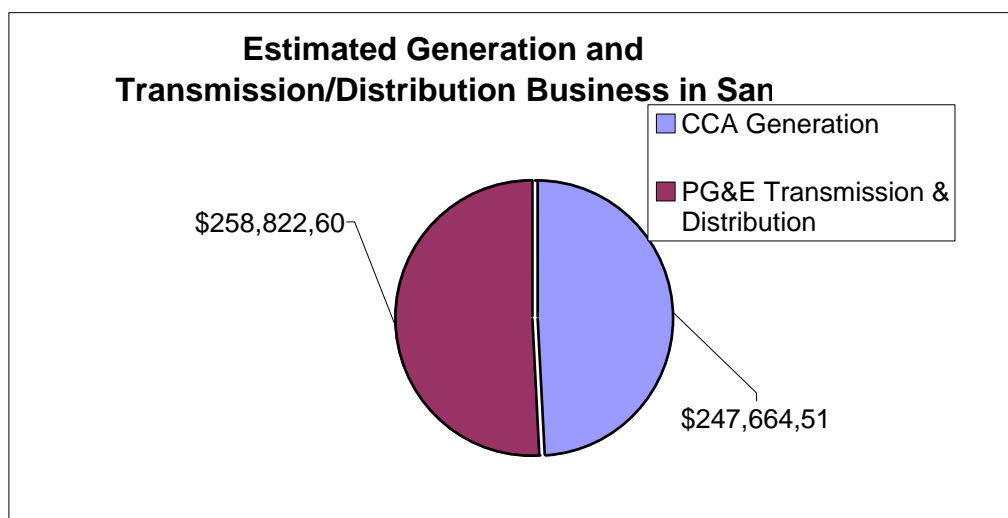
6.7 Generation as a Bill Component

As previously discussed, CCAs provide commodity electrical supply and demand services to their participating customers. Electrons procured on behalf of customers by the CCA are delivered by PG&E on their transmission and distribution system. PG&E continues to charge for electrical delivery services and maintains meter reading and billing functions. This contrasts with full municipalization where the City and County would acquire the local utility’s electrical delivery infrastructure and assume the full gamut of the electricity business in San Francisco including generation procurement, transmission and distribution services, and meter reading, and billing services.

In order to understand the portion of PG&E’s electrical business that CCSF would assume as a CCA it is important to understand the size of PG&E’s electrical energy business in San Francisco in general. Using San Francisco customer characteristics and energy demand as described above as well as PG&E’s fully bundled electric rates and demand charges (for medium and large commercial and industrial customers) the SF PUC estimates PG&E’s annual electrical energy revenues to be approximately \$506,500,000.00 per year. Using a similar approach but only for generation related charges, the SF PUC estimates the potential CCA portion of PG&E’s San Francisco business to be around \$247,000,000.00 per year, or 49% of total annual San Francisco electrical revenues.⁴³

⁴³ This estimate does not include revenues PG&E earns from DA customers.

**Exhibit 6-11:
Potential San Francisco CCA Generation Business**



Generation revenues in San Francisco can be broken into customer class as shown below in Exhibit 6-12:

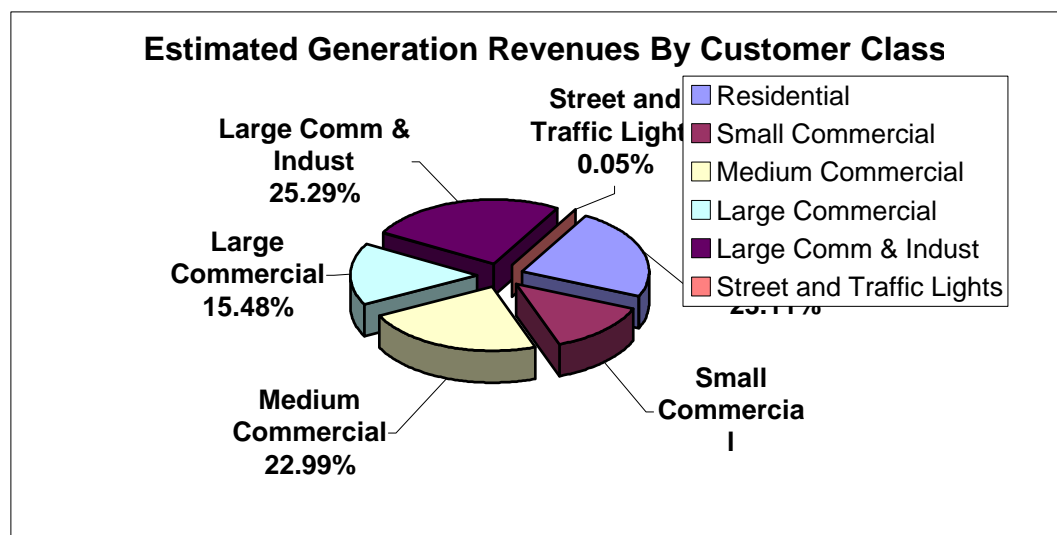


Exhibit 6-12: Estimated Projection of CCA Generation Revenue Proportions by Customer Class⁴⁴

This exhibit reveals that commercial and industrial customers in San Francisco purchase 77% of all energy sold in the City by PG&E. Residential sales represent the remaining 23% of annual generation revenues. Generation as a portion of electric bills varies between customer classes as well.

⁴⁴ To estimate generation revenues by customer class the SF PUC used 2003 data and PG&E's generation rates as of 01-2005.

Exhibit 6-13:
Estimated Average Electrical Bills and Generation Component
for Selected Rate Schedules

Rate Schedule	Description	Est. Avg. Monthly Bill	Est. Avg. Gen. Portion of Monthly Bill	Gen. as a % of Est. Avg. Mo. Bill
E1	Residential	\$43.67	\$14.25	32.63%
EL-1	Res CARE	\$26.27	\$8.79	33.46%
A1	Small Comm.	\$208.27	\$85.76	41.17%
A10	Med Comm.	\$2,316.21	\$1,366.16	58.98%
E19	Lrg Comm.	\$7,406.89	\$4,254.93	57.45%
E20	Lrg C&I	\$88,327.28	\$56,127.89	63.55%

Exhibit 6-13 shows the generation component as a proportion of average total monthly electricity bills by selected rate schedules for each major customer class. As an overall portion of the electric business in San Francisco generation represents approximately 50% of total electric revenues. However, generation as a portion of customers' bills varies significantly across customer classes. For instance, the electricity commodity represents about one-third of the average residential customer's bill, but represents between 59% and 64% of what medium and large commercial and large commercial/industrial customers' pay. Exhibit 6-13 also shows the impact of the CARE discount on residential bills and generation costs per account. In summary, customer load mix will impact the CCA's rates. At this time, PG&E's rates reflect that a higher percentage of commercial customers will push the average generation rate that we need to meet or beat up. This trend could change, however, depending on how PG&E's rates change going forward. In Phase II of their current General Rate Case (GRC, Application 04-06-024), PG&E is arguing to shift revenue allocation from commercial and industrial customers to residential customers to reflect the cost to serve those customers. Due to both their high consumption per customer and their generally higher rates, a high percentage of commercial and industrial customer participation will improve the general outlook for CCA in San Francisco.