



Fw: Feasibility studies for local Community Choice Energy programs

Jennifer Caffee to: cr_board_clerk Clerk Recorder, Trevor Keith

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----- Forwarded by Jennifer Caffee/BOS/COSLO on 10/05/2015 11:20 AM -----

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Date: 10/04/2015 10:59 AM
Subject: Feasibility studies for local Community Choice Energy programs

Honorable Supervisors (and Legislative Assistants):

I'm writing in support of reasonable funding by the county for any studies exploring the feasibility of bringing a Community Choice Energy (CCE) program to the Central Coast.

As a retired journalist, I have a long-standing interest in community-centered projects. The short history of CCEs is particularly interesting because each area must craft its own solution to the common problem of securing a long-term, renewable energy future for its businesses and residents. Last June I attended the Silicon Valley Energy Summit at Stanford University and was particularly impressed by the professionalism displayed and success achieved by Marin Clean Energy.

I am attaching a document I wrote which explores factors to consider when setting up a CCE feasibility study. Although the paper goes well beyond a Powerpoint or FAQ, it barely highlights issues which should be considered in depth before embarking on a CCE pilot program. The good news is that other California counties have successful CCE programs in place and are happy to share their experience and knowledge.

Thank you for taking this important, timely issue into consideration ... and for all you do. Your jobs are not easy ones.

Sincerely,

Todd Katz



A Sustainable Coast.pdf

Sustainable Coast

A Future with Sufficient, Renewable Energy

Community Choice Energy (CCE) : Central Coast's Future

San Luis Obispo county and other Central Coast counties are blessed with an abundance of sunshine, wind, waves, and open land ... all natural resources capable of supporting a renewable, independent energy future that would be the envy of any region on earth.

A sustainable energy future is many clean energy projects: some large, some small, some up-and-running, some in construction, some experimental as befits an area with diverse energy-generating projects and a large poly-technical university.

A "Sustainable Coast" is an area where:

- Energy start-ups create small-is-beautiful solar, wind-powered or other energy-generating plants that quickly and easily connect homes and businesses to the electrical power grid
- A non-profit, community choice energy utility (CCE) cooperates with PG&E to assure the maximum use of renewables, including carefully monitored nuclear power, in an environment that emphasizes generation and conservation over consumption and restriction
- Numerous houses and business achieve a goal of being 100% self-reliant as regards electrical power consumption while a smaller but significant number of homes and businesses are able to go entirely off-grid due to use of on-site 7x24 electrical storage.

This future contrasts markedly with a picture of increasing energy costs, decreasing options, and encroaching pollution coupled with unpredictable and potentially damaging heat and rising water costs – a risk we all face as soon as tomorrow if each of us doesn't do our part today.

A "Sustainable Coast" would be committed to the premise that when asked, citizens of the Central Coast will seize the opportunity to secure a bright, renewable energy future for ourselves and our children.

In an ideal scenario interested citizens, businesses, environmental organizations, our local investor-owned utility (PG&E) and local government officials would work together to investigate the economic benefits and challenges of developing a Community Choice

Aggregation (CCE) energy program for our county through a comprehensive feasibility study hopefully to be followed quickly with a successful pilot program.

The primary purpose of this document is to clarify the need for and suggest a scope for such a study.

About this Document

I am a retired journalist living in San Luis Obispo. After attending several meetings on Community Choice Energy programs including, most recently, Stanford's Silicon Valley Energy Summit, June 26, 2015 (peec.stanford.edu/events/2015/sves), I developed this document to better understand topics that would come up if a Community Choice Energy program was brought to the Central Coast.

All documents are a work in progress and this one should be considered, optimistically, version 0.8.

Questions and comments should be directed to todd.katz@yahoo.com

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About Sustainable Coast

“Sustainable Coast” simply attempts to adapt to the Central Coast some of the educational and communication goals promoted by Sustainable Silicon Valley (www.sustainablesv.org).

A Sustainable Coast seeks to ensure the following goals:

- That the Central Coast be a leader – or at least not be left behind – in California’s effort to assure reliable, affordable energy for its foreseeable future and
- That efforts to secure the Central Coast’s energy future leverage existing technical, political and economic realities and
- That the county can benefit from the economic advantages afforded by our natural resources and a progressive relationship with PG&E, our region’s investor-owned utility company.

A Sustainable Coast must account for the fact that where there are opportunities, there are also risks. Move too quickly, and be caught on the cutting edge of innovation. Move too slowly and be left behind in a state and region facing increasing energy costs, environmental constraints, and – potentially – supply restrictions.

In a world of limited and in some cases shrinking energy supply, with increasing competition for desirable and valuable renewable energy resources, identifying and taking advantage of limited-availability, limited-time opportunities is comparable to the historic importance of securing a plentiful, reliable, and long-term source of quality water for our county and its communities.

Dodging a Pricey Energy Future

Many industry observers expect commercial utility rate increases to accelerate for several reasons:

- The state has mandated that investor-owned utilities such as PG&E boost their renewable energy content from 15% to 33% by 2020.
- Under California’s Cap-and-Trade program PG&E’s generation rates will soon include the cost of greenhouse gas (GHG) allowances.
- The lost of San Onofre nuclear plant and the potential closing of Diablo nuclear plant at least as soon as 2025.
- Increased energy conservation by businesses, government and home owners leading to an increased need to raise revenue from a smaller pool of customers.

Goals and Objectives

A Sustainable Coast needs a stepped program to ensure a reliable and affordable energy future for San Luis Obispo county and the Central Coast. Initial steps include:

- Investigation
- Promotion
- Conservation
- Generation
- Establishment of a “Virtual Energy Reservoir”

Here are details on each step:

- **Investigation.** An Investigation program includes a feasibility study to determine the optimal mix of energy conservation and renewable energy acquisition required to assure energy independence and security. A feasibility study should consider the county’s energy requirements and generation potential across a 20 to 25-year timeline.
- **Promotion.** A Promotion program consists of efforts to promote energy conservation, local generation, and cleaner energy initiatives. While the major focus should be on electric power generation and conservation, attention should also be paid to improving acceptance of mass transit, promoting self-powered transportation and non-gasoline powered transportation, and work-and-study-from-home programs. The promotion effort envisioned includes:
 - Outreach to investor-owned utilities such as PG&E.
 - Development of energy efficiency incentive programs for households and businesses.
 - Instilling an awareness of the needs for energy generation and conservation with the county’s educational and governmental institutions and students at all levels.
- **Conservation.** A well-designed conservation program greatly eases the transition to clean energy since every kilowatt hour saved is a kilowatt hour that doesn’t need to be generated, transported, delivered, converted into heat, and dissipated into the atmosphere.

Such a Conservation program should honor residences and businesses that have contributed to a clean energy future. (Example: Homes and businesses at or near “net zero” energy usage could prominently display a sign or plaque in front of their property, as well as be identified on online clean energy maps.)

Most importantly, a conservation program can start practically immediately while studies and pilot programs for other phases of the CCE effort get underway.

- **Energy Generation.** The Energy Generation program qualifies and quantifies approaches to increasing the amount of locally-generated renewable energy. Such a program will have multiple, synergistic benefits. More locally generated energy means more local jobs, more money being retained for the local communities, increases in business at potentially lower energy expenditures ... all leading to a virtuous cycle of greater opportunities for business expansion.
- **Virtual Energy Reservoir.** A “Virtual Energy Reservoir” program consists of mid- and long-term county-wide strategies for securing needed renewable power at favorable and dependable rates, and storing some of that energy, thus ensuring an uninterrupted supply of electricity. Micro fuel cell energy reserves for residences and businesses are also on the horizon and should be encouraged.

Of these keys goals, Conservation, Energy Generation, and the Virtual Energy Reservoir fit perfectly into the CCE model programs being starting in many California communities and in other states. Portions of non-profit CCE revenues can, over time, be used to further all these goals.

Community Choice Aggregation (CCE): Background

In 2002, the California Legislature enacted a statute enabling broadly defined regional “communities” to establish their own CCE programs. Under the legislation (California Public Utilities Code §366.2), a city, county, or joint powers authority (JPA) comprised of two or more cities and/or counties can implement a CCE local utility. (In recent years the concept of CCE “communities” has been extended to include water districts.)

A CCE creates, essentially, a regional energy provisioning cooperative. Once in existence, bulk purchasing power formerly available only to state and investor-owned utilities such as PG&E becomes potentially available to these aggregated communities.

CCEs also provide business and environmental community elements with the necessary legal underpinning to create a local utility. Such utilities typically have two main goals:

- First, wherever possible, generate energy locally from renewable sources
- Second, ensure wherever possible that supplemental energy purchased from energy vendors is from renewable sources

Fortunately, the CCE legislation requires investor-owned utilities such as PG&E to be supportive. In fact, PG&E provides communities considering starting CCEs with ongoing and assured infrastructure and business function support. (Included at the end of this document a recent set of Frequently Asked Questions (FAQs) for CCEs which PG&E provides on its Web site.)

Partnering with PG&E

When a utility such as PG&E partners with Community Choice Aggregation utilities, CCE customers pay a slight premium for continued PG&E plant-to-residences and plant-to-business power grid maintenance, monitoring, servicing, billing and collecting and being the “provider of last resort” in case of any shortfalls in the CCE’s energy acquisition and generation strategies.

A Sustainable Coast-type CCE would need to be committed to a long-term, mutually-supportive, successful partnership with PG&E.

Benefits to PG&E also should not be discounted -- even though the company has been slow to recognize them. Not so long ago many investor-owned utilities did not even support energy conservation. Community Choice Energy is not going away in California; supporting local energy generation and integration into the energy grid will help a utility achieve a closer partnership with its customers and lock-in long-term growth and profit.

CCE Programs Active and In Process

CCE programs have proven successful in many localities.

The Northeast Ohio Public Energy Council (NOPEC) operates the largest CCE program in the U.S. Formed in 2000, NOPEC (!) represents 126 communities in eight counties, with more than 420,000 electrical and 200,000 natural gas customers. In Massachusetts Cape Light Compact, formed in 1997, aggregates power to serve more than 200,000 consumers. Others states operating CCEs include Illinois, New Jersey and Rhode Island.

Closer to home Marin Clean Energy (MCE) was the first operational CCE program in California. MCE started with 14,000 customers in 2010, now has more than 125,000 customers and expects to have 165,000 by the end of 2015. Cities that have joined include Mill Valley, Fairfax, San Anselmo, San Rafael, Tiburon, Sausalito, Novato, Ross, and Larkspur. Recently the City of Richmond, across the bay from Marin county, joined.

CCE programs are also in various stages of development in San Francisco (Clean Power SF), the East Bay (Oakland, Emeryville and Berkeley), and the San Joaquin Valley (San Joaquin Valley Power Authority). Some of these efforts – such as Clean Power SF – have been in various planning stages for many years.

Sonoma County recently started a CCE with more than 20,000 commercial customers. Other counties/communities in California exploring CCEs include Monterey, Santa Barbara, Alameda, San Diego, Santa Cruz, San Benito, and Yolo counties.

The Beauty of Being Nimble

A key advantage of a CCE is that it can select a mix of power sources which is precisely correct for its communities. A CCE can uniquely take into consideration geography, local environmental perspectives, local energy-generation costs, and non- and low-polluting energy resources such as sun, wind, waves, geothermal, and natural gas or a combination thereof. A CCE can also take into consideration whether and to what degree its populace will pay a premium for clean power.

Determining the Mix of Generated and Procured Energy Over Time

A typical CCE – especially at the onset – continues to purchase a large percentage of power from its partner investor-owned utility, in our case PG&E. Then, gradually, the energy mix would be made cleaner (more renewable) through a combination of generation, acquisition, and conservation.

Remote Energy Procurement

As would be expected, large power companies are often the providers of renewable energy, essentially marketing energy derived from renewable sources to CCEs or other utilities seeking such power.

In order to assure the maximum reliance on sources of renewable energy, CCEs strive to establish contracts with energy suppliers that agree to a pre-determined vendor price from specific sources over a 20-to-25 year time frame.

Determining how much energy will need to be purchased over such a timeframe is one of the most important and challenging tasks facing a new CCE. Fortunately, other CCEs and environmental energy planners have developed methodologies for making these educated guesses. Any feasibility study should consider these planning requirements in considerable detail.

Local Energy Generation

The financial arrangements for assuring local energy generation are similar to those of procurement insofar as photovoltaic, wind power and other energy-generating installations need long-term assurance that they will be able to connect to the grid and receive fair payment for any surplus energy they produce.

How a CCE Gets Its Initial Customers

Using the Marin CCE as a model, a pilot program would start up with 2,000-5,000 customers and grow – if successful – 30%-100% annually as communities joined in and acquisition and generation resources come online.

Program size must be calibrated to match program objectives. When designing a pilot CCE, some policymakers may be inclined to reduce the cost impacts by setting a too small initial program size. Paradoxically, this can contribute to failure since a too small program will also have small benefits and potential difficulty securing power at a favorable price. Also important: policymakers and administrators can help ensure the success of a pilot program by keeping the pricing and procedures as simple as possible and the customer-base served homogeneous in terms of type of service (business or residential) and contiguous locale.

It's important to note that in California there are many statutory safeguards in place to ensure that those who do not wish to participate in a CCE can "opt out" either initially or anytime thereafter. Customers who "opt out" would simply continue their current arrangement with PG&E.

Tomorrow's CCE Programs

Even as communities are joining together to form CCEs, civic planners continued to refine their vision of vastly more renewable, highly-local energy generation systems.

Three of these advanced strategies expected to become much more common in the U.S. are:

- Feed-in metering
- Easy I/O tie-in to existing grids
- Bond financing programs to encourage CCE development

Feed-In Metering Strategies

One of the most successful clean energy strategies is also one of the simplest. Dubbed “feed-in tariffs”, such programs compensate energy generators – even quite small generators – for the energy they feed into the grid. Thus instead of a household, for example, installing solar panels and through net metering realizing a significant break on their yearly electricity bills, the household can “overbuild” its energy production system, return the surplus to the grid and get paid a fair rate for its contribution to the overall power supply.

This simple pivot effectively puts an end to the common case of a household installing an energy generating system (i.e. solar panels), getting a rebate, and then – perhaps after several years or a change of ownership of the property – simply neglecting the maintenance of the system (such a tree pruning) which results in the generation of an ever-smaller portion of the home’s electrical needs. “Feed-in” model customers, by contrast, have a significant financial incentive to maintain and even enlarge their energy generation systems.

When the “feed in” model is expanded to businesses and multi-unit residencies benefits are even more pronounced since structures with flat, expansive roofs (Whole Foods Market) or available land (Tolusa Winery) or covered parking (San Luis Obispo H.S.) can support major photovoltaic arrays and thus have the potential of becoming net energy generators ... and moving utility bills on their ledgers from debit to credit.

In the foreseeable future, homes and businesses will support affordable energy via wind turbines and storage facilities such as fuel cells, thereby allowing for hyper-local power generation, storage and retrieval.

Easy Input / Output To the Power Grid

Local energy generation is a two-way street. Investor-owned utilities of the future will receive and distributed energy from multiple sources including:

- Energy purchased under contract from vendors offering renewably sourced mega-wattage.

- Energy locally generated and fed into the grid using uniform inter-connective systems capable of receiving and tracking the receipt of energy from hundreds or even thousands of energy generating stations.

Naturally, managing such bi-directional energy generation is a major undertaking for which the local utility company can and should receive fair compensation. In fact this energy management challenge represents a valid and appropriate way of adjusting to lower revenues due to conservation and local energy generation.

Energy Development Bonds & Loans

Borrowing funds to help home and business owners install energy-generating technology is hardly a new concept, but the movement appears to be picking up steam – no pun intended – due to two developments:

- **Series H Bonds – (aka Solar Bonds).** These are municipal bonds designed for issuance by a CCE. Such bonds can be used to finance the construction of local photovoltaic and wind-powered capacity and infrastructure.

Series H bonds can finance a CCE from pilot stage to ultimate built-out of the local utility program. For example, a CCE backed by one or several local municipalities could sell a series of H bonds structured to provide the greatest yield to the earliest investors (based on current rates, the tax free yield would range from 3.5 to 2.0 percent, the highest return to the earliest investors). In some cases businesses that buy the bonds could choose to be fully or partially repaid through energy charge abatements.

- **PACE Loans.** Property Assessed Clean Energy (PACE) loans are a means of financing energy efficiency upgrades and/or renewable energy installations. PACE loans encourage and enable owners of homes and businesses to install energy-generating systems and repay the cost over many years through slightly increased property taxes. The deferred cost improvements are structured so the owner can realize significant long-term energy cost savings immediately.

Currently in California PACE loans are not in widespread use despite efforts by Rep. Lois Capps and other legislators who support clean energy initiatives. However, several individual counties have or are in the process of implementing PACE programs on their own.

It would be appropriate for the feasibility study to consider how Series H Bonds, PACE loans, and other financing vehicles might best be used for a pilot project and further build-out of a CCE.

Forming a CCE

This section considers some of the detail associated with forming a local CCE.

Organization and Structure

CCEs frequently utilize a common legal structure for public entities called a Joint Powers Authority (JPA). San Luis Obispo county's Regional Transit Authority (RTA) operates as a JPA and SLO is a partner with several other southern California counties in the Los Angeles - San Diego - San Luis Obispo railroad JPA (LOSSAN) associated with AMTRAK.

Essentially a JPA creates a legal container that allows participating governments to join together while insulating taxpayers from financial risks by restricting the scope of liability to the JPA.

An envisioned CCE board would report to a JPA. The management team, in turn, would be appointed by and report to the board. In addition to the management board, there might also be a citizen's Advisory Board composed of representatives of renters, homeowners, small and large businesses, colleges and universities and state and federal offices situated in the county.

Any CCE management team should be composed of seasoned professionals with expertise in the field, as well as being professionally-trained managers. Employment preferences should go to county residents.

Since CCEs operate as self-funding, non-profit businesses, most are run with very small staffs. (As an example, Marin Clean Energy with more than 125,000 customers, has a \$100 million budget and a paid staff of about 25.)

Statutory Requirements

There are a number of statutory requirements for California CCE programs. For example, all CCEs operate as non-profit businesses with publicly accountable boards and professional management teams. (The following requirements were verified accurate as of 2013.)

CCEs are prohibited by law from levying taxes or assessments. Similarly, CCE budgets are – by statute – fully separate from the general funds of participating local governments, in order to insulate both local governments and the CCE from each other's possible financial problems.

Section 366.2 of the California Public Utilities Code specifies the requirements for formation of a CCE program. The formation process begins with the adoption of an ordinance by the entity proposing to implement the CCE program, followed by preparation of an Implementation Plan.

An Implementation Plan must contain a Statement of Intent by the public entity, accepting the goal of providing universal access, reliability, equitable treatment of all classes of customers, and to meet any other requirements established by state law or by the California Public Utilities Commission (CPUC).

All CCE implementation plans are submitted to the CPUC for review. The entity proposing the CCE program must also provide the CPUC with any information necessary

to allow the CPUC to determine the cost responsibility surcharge (CRS) applicable to CCE customers.

To protect the investor-owned utility's remaining customers from rate hikes, the CRS must reimburse the investor-owned utility (i.e. PG&E) for additional unavoidable power procurement costs resulting from having a smaller customer base.

Within 90 days, the CPUC must review and certify the Implementation Plan and inform the CCE program of the CRS applicable to it.

The CCE program must also register with the CPUC, and include with the registration an executed copy of a Services Agreement between the CCE entity and the utility, governing the services to be provided by the utility under the CCE program.

The CCE entity also submits evidence of insurance, self-insurance, or a bond that covers such costs as potential re-entry fees, penalties for failing to meet operational deadlines, and forecasting errors.

Once the CCE entity has registered with the CPUC and signed the Services Agreement with the utility, the CCE entity must give the utility 30-days notice of the commencement of CCE service.

Start-up Investments

A Sustainable Coast-type CCE, like all CCEs, would require an initial start-up investment. Possible funding sources include non-profit and governmental grants and loans and private donations.

A careful estimate of the expected and worst-case costs of a pilot program should be included in the feasibility study. If the pilot program is successful it seems inevitable that additional scale-up monies would need to be raised. Again, the feasibility study should consider this issue in advance.

How a CCE Can Impact Various Community Elements

Were the great majority of the residences, businesses and communities in the Central Coast area to eventually become part of a CCE, annual revenue would range well above \$250 million, an estimate based on current county population and energy demands.

Once in place for a particular area, all eligible utility customers are automatically enrolled in the CCE program unless they choose not to participate (i.e. 'opt-out'). This enrollment provision allows a new CCE to obtain the critical mass of customers required to contract for power.

The following sections describe the benefits of a CCE for various community elements.

Homeowners and Sustainable Coast

Customers receiving electricity from a Sustainable Coast-type CCE would notice few changes. Their familiar investor-owned utility will continue to provide service and support, maintain lines and equipment, respond to service-related inquiries and provide

familiar billing and receipt services. Energy turn-offs for non-payment would continue to be done through the investor-owned utility.

While rates charged by CCEs are often described as “competitive” with those of traditional utilities, CCE customers are often given the option of paying a slight premium to further the goal of powering their house or business with a higher percentage of renewable energy. In some CCEs, customers can choose from several pricing plans, optionally paying more for a higher mix of renewable vs. non-renewable energy.

Benefits for Businesses

While CCEs benefit the great majority of homeowners indirectly by reducing their carbon footprint and improving the local economic climate, the benefits businesses large and small receive are easier to quantified. They include:

- **Net energy generation potential.** In a CCE practically every business with a physical structure has the potential to become a net energy supplier rather than a net energy consumer. Even if only part of the energy they use is generated on site, the potential to reduce energy costs can help the bottom line or – put another way – increase the businesses’ competitive stance in the marketplace – including competing with businesses in other parts of California and the U.S.
- **Increased local economic activity.** Just as the build-out of railroads, interstate highways, electricity grids and in-home plumbing greatly boosted the local and regional economies of their day, a built-out of local energy generation and storage would for many years significantly increase economic activity and local jobs.
- **Predictability.** Long-term contracts for electric power provide businesses with valuable long-term expense and expansion cost data.

Benefits for Governmental Entities

The benefits for local, county and regional governmental entities in a CCE are both direct and indirect. Direct benefits include better control over energy planning for communities and additional revenues from fees and taxes associated with the build-out of energy generating facilities. Indirect benefits accrue from increases in the sales and property tax base and slightly reduced demand for unemployment and underemployment services.

Additional benefits include the enhancement of the region’s reputation and attractiveness to businesses and potential residents and improved environment due to better air quality and less dependence on the movement (in and out) of energy-related products.

Additional Benefits of a CCE Program

A CCE program offers many additional benefits when compared with relying exclusively on a investor-owned utility:

- **Increased reliance on renewable power sources.** Because a local CCE entity can select the type of power it provides to its customers, it can focus on using carbon-free, renewable, preferably local power sources, thus reducing reliance on the generation of electricity using fossil fuels.
- **Energy efficiency.** To the extent that power can be locally generated, energy lost due to long-distance transmission is reduced.
- **Local economic benefits.** A local CCE means that a higher percentage of dollars paid by residents for their electric power would “stay home”. Many of these dollars could be used to build-out of local photovoltaic and other renewable energy sources and encouraging voluntary energy conservation. This new market for small-scale renewable power – especially if local energy storage comes to pass -- could create many highly-paid, high-skilled jobs.
- **Local control.** The operations and priorities of an investor-owned utility are determined by its shareholders, its management, and the CPUC. In contrast, the governing board of a CCE could be comprised of local elected officials (typically through a JPA), so that residents could more easily influence decisions about the operation and priorities of their energy utility.
- **Rate stability.** A well-run CCE should be able to lock in more attractive and stable electricity prices as compared with a huge investor-owned utility
- **Diversifying consumer choices.** A public CCE increases consumer choice and community and individual awareness of energy consumption issues and the importance of energy conservation. It also provides needed local and regional competition to investor-owned energy monopolies, which leads to increased efficiency.
- **Boosting the overall renewable : non-renewable ratio.** Renewable energy generated or contracted for by a CCE does not affect the renewable mix required of California investor-owned utilities. Thus the overall percentage of renewable energy sources used in the state will naturally increase as CCE entities buying and generating renewable power come on line. This also benefits large investor-owned utilities, potentially significantly.

Summary of Risk Factors Associated with CCEs

A Sustainable Coast-like CCE program would contract for power with a variety of large, experienced energy suppliers that have excellent operational delivery capabilities and history. It should be noted that municipal utilities have been successfully managing

commodity, credit, and operational risks for many decades, even during times of high commodity prices and supply shortages.

Still there are risks to any endeavor. A disciplined, experienced management team and a good working relationship with PG&E are the keys to minimizing risks associated with offering community utility power to the area.

A preliminary analysis of the risks associated with forming a CCE fall into two categories: pre-formation considerations and operational considerations.

Pre-formation Considerations

Pre-formation risks that have been identified include:

- **Investigation costs.** CCE development work, and the preparation of an Implementation Plan, would require the temporary hiring of experts to perform necessary engineering, legal, and financial analysis.

There are additional “pre-start-up” costs which may not be recoverable, such as the costs of a feasibility study, legal costs associated with preparing and entering into necessary formation-related agreements (such as JPAs), meetings, and so on.

- **Utility support is only provisional.** To date, PG&E has – due to statute requirements and without much enthusiasm -- supported CCEs. However, PG&E could adopt an even less supportive approach which could in turn affect start-up and ongoing costs, legal costs, and the cost of maintaining community support CCE projects. In addition, changes in law and/or passages of specific state propositions could affect existing CCEs in ways which cannot be fully anticipated.
- **Governmental entities may opt-out.** Various cities and/or the county could be unable to reach an agreement on formation of the CCE, on its Board’s composition or in determining an approach to securing next-step financings.
- **Insufficient customer support.** At a minimum, a Sustainable Coast-like pilot program would require support from at least two incorporated communities and assignment of some to-be-determined minimum number of residential and business customers. If these numbers are not attained, the pilot program could fail.
- **Insufficient organizational or technical expertise.** At every step of the process including ongoing operations a CCE must be lead by individuals with sufficient managerial and technical expertise, professionalism and integrity to provide a smooth and secure transition to a CCE for households, businesses, partner locales, and associated energy suppliers and utilities.

Operational Considerations

Once in full operation, the primary operational risks inherent in CCE operations are that unanticipated events would cause the CCE's costs to increase or rates charged by the investor-owned utility to decrease. These considerations include:

- **Known premium for renewables.** Although the cost of renewables has fallen, it remains true that the higher the percentage of energy coming from renewable sources, the higher the differential between CCE pricing and investor-owned utility pricing. The potential differential depends upon the portfolio of power sources used by the CCE.

If the differential between the investor-owned utility and CCE pricing is too great, the ability to retain customers could be impacted, increasing the risk of higher costs for remaining customers. (A mitigating factor is that a CCE-lead conservation program could be designed to educate residential and business customers to the true cost of transmitted, non-renewable energy; the true cost of burning fossil fuels for power; and the economic benefits of a local energy build-out and conservation.)

- **Competition for renewables.** With CCEs starting up throughout California and in neighboring states, there is a risk that the competition for non-renewable sources of energy will be so intense that the premium of renewables over non-renewables will increase over time, creating a risk that fewer customers will remain in the CCE or, at least, opt-in for renewable premium pricing. This risk is a strong argument for early start-up and build-out of a local, Sustainable Coast-type CCE.
- **Increasing cost of purchasing infrastructure services from PG&E.** The cost responsibility surcharge (CRS) imposed by an investor-owned utility such as PG&E is inversely related to the prevailing market price of electricity such that if energy prices fall, the CRS will increase. To the extent the CRS increases and the CCE program has locked in electricity prices through long-term contracts, the CCE customers' total rates could rise, leading to the possibility of customer defections or, at least, opt-out of renewable premium pricing.
- **Under- or over-estimating demand or energy procurement costs.** The CCE entity could incorrectly hedge its exposure to electricity and/or natural gas prices. Or adverse price movements could cause rate increases for its customers. Or the CCE entity could over-rely on long-term contracts with fixed prices and find itself holding a high-cost portfolio as energy prices fall, as is currently the case in the fall of 2015.
- **Loss of customer base.** If for any reason the CCE program was not able to retain its projected customer base, financing via the capital markets (if undertaken) would be made more difficult. Example: in a severe to catastrophic economic

downturn, customers could fail to pay their bills or even terminate service, leading to problems ranging from inability to finance continue growth, financial stress, distress or insolvency.

- **Loss of large customers.** In an economic downturn, large CCE customers may go out of business, leave the area, or opt out of the CCE, leaving behind obligations that must be made up by remaining customers. Similarly, the overall local revenue supply could be unexpectedly reduced if a large customer that had been a net energy producer closed or left the area.
- **Loss of energy supply.** One or several of the CCE program's energy suppliers could default on supply contracts at times when energy spot markets are high, forcing the CCE entity to purchase energy at unexpectedly high spot market prices or from the investor-owned utility. In a worst-case scenario, there could be an energy shortage due to lack of supply.
- **PG&E billing changes that disadvantage the CCE.** An investor-owned utility could change its billing structure so that the cost of power is reduced and the cost of infrastructure services are increased. A similar risk is that an investor-owned utility could adjust costs among customer classes (i.e. households and businesses) in a manner that disadvantages to a particular mix served by the CCE.
- **Disadvantageous changes to state or federal law or rules.** The rules and tariffs administered by the CPUC or in the vendor markets regulated by the Federal Energy Regulatory Commission (FERC) could increase the CCE program's cost of providing service. For example, a requirement to use geographic-specific load profiles for electricity procurement could advantage coastal communities to the detriment of those located in hotter, inland climates.
- **A disaster could occur.** Disaster risks could include widespread fire, earthquake, tsunami, nuclear meltdown, tornado, computer viruses, and other forms of physical, economic or virtual terrorism. Long-term extreme drought is another disaster which could occur. Such an event or series of events could impact all or significant aspects of a CCE, as well, of course, as all other parts of the community.

If the disaster was local, the ability of local governments and financial institutions to come to the aid of the CCE might be impacted.

On the other hand, if the disaster was not local, the ability of a local CCE to recover from a disaster and to manage its financial impact might be less than that of a regional, investor-owned utility.

Suggested Next Steps

This section discusses topics which might be covered in a feasibility study and considers, generally, the steps that would be required to bring a CCE pilot program online and projected follow-up if the pilot is successful.

Feasibility Study

A feasibility study is a formal document commissioned by governmental entities to explore the creation of a local CCE. Studies such as this are typically undertaken by a consulting firm with expertise in the creation of a CCE. (One such agency is Dalessi Management Consulting LLC, based in northern California, which coordinated the Marin Clean Energy feasibility study.) Topic covered should include:

- Financial & Economic
 - Power acquisition strategies
 - Coordinating with the regional investor-owned utility
 - Short and long-term CCE rate projections for households and businesses, as compared with current and projected rates
 - Effect on the regional economy from local re-investment of utility revenues
 - Projected local short, medium and long-term area job creation – quantity and quality
 - Pilot program financing
- Environmental
 - Projected greenhouse gas emission reduction over time, based on changes in the mix of energy sources
 - Environmental studies for planned local renewable energy generation projects
- Governmental
 - Approaches to establishing a JPA
 - Cooperating with partner cities and counties
- Operational and Technical
 - Bonding / insurance requirements
 - Board selection and supervision

- Management qualifications, selection, compensation, and supervision
- Build out of I/O power interfaces to support locally-generated power
- Insurance and disaster planning

Down the Road: Bringing a Pilot Program Online

If the feasibility study is completed and leads to a pilot program, many or all of the following actions will need to be taken:

- Set up a Board of Directors
- Recruit and hiring staff
- Determine size of the pilot program
- Establish a good working relationship with local and regional PG&E staff
- Develop informational and program marketing materials
- Establish a call center for customer inquiries
- Contact key business and governmental customers to explain the program and obtain expressions of support and commitment
- Prepare short- and long-term load forecast
- Prepare an analysis of tax consequences
- Prepare a disaster plan
- Prepare a close-down plan
- Develop in-house capability to negotiate contracts for operational services (such as electronic data interchange with PG&E, customer bill calculations, schedule coordinator services, and so on)
- Execute contracts for electric supply; identify generation projects and negotiate participation, if applicable
- Obtain financing for program capital requirements
- Execute service agreements with key utilities
- Send enrollment notices to eligible customers
- Process customer opt-out requests (if appropriate)
- Submit notification certification and other required documentation to the CPUC and JPA governmental agencies.

Planning for Long-term Growth

Once a pilot program is successful, managers should develop a detail plan that answers these key questions:

- **How fast can the CCE grow?** In other words, how many households and businesses will be signed up in any given year and how much energy will these customers require? (A 10-15% additional buffer should be factored in.) What is the projected growth rate over the next 20 years.
- **How much additional investment is needed and when?** Where will these funds come from and what obligations will they entail?
- **What will the pace of development of local generation be?** In other words, how quickly will local energy sources be developed and integrated into the CCE/PG&E grid?
- **In any given year, how much power will need to be purchased from renewable sources?** By subtracting the expected megawatt generation in any given year from the expected demand, the amount of energy that must be contract for (plus buffer) will be clear.

References and Recommended Readings

A Google search for “CCA CCE California energy” will turn up many useful articles, slide shows, reports and relevant governmental and utility documents.

PG&E's Frequently Asked Questions on CCEs (as copied from their Web site 10/3/15)

For the reader's convenience here are PG&E's answers to questions they frequently get about CCEs. The latest version of this document can be found on PG&E's Web site:

<http://www.pge.com/en/myhome/saveenergymoney/energychoice/communitychoiceaggregation/faq/index.page>

What is Community Choice Aggregation (CCE)?

Community Choice Aggregation, or CCE, is a program available within the service areas of investor-owned utilities, such as PG&E, which allows cities, counties and other qualifying governmental entities to purchase and/or generate electricity for their residents and businesses. It is not a PG&E program. PG&E continues to deliver the electricity through its transmission and distribution system and provide meter reading, billing, and maintenance services for CCE customers.

How does this affect customers?

State law requires that customers within a CCE's member jurisdictions be enrolled in CCE service unless they choose to opt out.

CCE programs may charge different rates for electricity than PG&E, resulting in a change in charges on a customer's overall electricity bill

CCE providers may procure a different mix of energy resources than that offered by PG&E.

Customers which take service from a CCE will stop paying PG&E's rates for generation, but will instead pay the CCE's generation rates. The rates for PG&E's delivery charges (non-generation) remain unchanged.

[Enrollment](#)

How are customers enrolled in a CCE Program?

Once a city or county implements or joins a CCE program, state law requires that customers within a CCE's member jurisdictions be enrolled in CCE service unless they choose to opt out. In some instances, a CCE may choose to phase-in its program. As part of the CCE notification process, you will receive at least two notices during a 60-day period prior to CCE service commencement and at least two additional notices during a 60-day period after CCE service commencement. These notices will inform you how to opt out of the program if you choose to do so. Once a CCE completes its enrollment process, all new customers establishing service in that area will be enrolled in CCE service unless they opt out.

Are any customers exempt from automatic enrollment in a CCE program?

All PG&E customers in a CCE program's service area automatically become customers of

that CCE program (which may occur in phases) unless they choose to opt out of the CCE program.

What happens to my electric service if I move to a city or county that is part of a CCE program?

If a customer moves to a city or county that has started a CCE program, the customer would become a customer of the CCE program by default unless they take action to opt out.

If a customer does not opt out of the CCE program at the time they start service, the customer would receive 2 notifications from the CCE program during the initial 60 day period that include opt out instructions.

Whom do I call to start my electric service if I move to a city or county that is part of a CCE program?

Always contact PG&E to start or stop your electric service.

Where is CCE service currently offered?

CCE service is available in the City of Richmond, unincorporated Napa, El Cerrito, Benicia, San Pablo and Marin County through MCE. Sonoma Clean Power (SCP) launched in May, 2014 and will provide generation to all cities within Sonoma County by the end of June, 2015.

I live in a neighboring City or County to an existing CCE program. Why did I receive an opt-out solicitation from a CCE?

In many cases customers who identify themselves in neighboring communities are actually located within the CCE's jurisdictional area. This is often the case if you reside in an unincorporated area of a County. If you believe that your service location is ineligible for CCE service, please contact PG&E.

[Service](#)

Which PG&E services and programs remain available to CCE customers?

PG&E manages transmission, distribution and delivery of a CCE customer's electricity, including providing meter reading, billing, maintenance and outage response services. Additional PG&E services, including energy efficiency rebates, California Alternative Rates for Energy (CARE), medical baseline, balanced payment plans (generally only on PG&E delivery charges), net metering, California Solar Initiative, other solar programs, and some demand response programs, as well as programs such as eBills and Automated Payment Services are still available to CCE customers. Programs administered by the CCE may differ from those provided by PG&E.

Are the service deposit requirements different in CCE programs?

No, PG&E's deposit requirements will remain the same. However, the CCE may also have its own deposit requirements.

Is my current PG&E pricing option still available with CCE service?

The following options are not available to customers participating in CCE programs

- E-RSMART - Residential SmartRate Program

- E-CSMART - Commercial SmartRate Program
- AG-ICE - Agricultural Internal Combustion Engine
- E-SLRP - Scheduled Load Reduction Program
- E-PDP – Peak Day Pricing

If you are on any of the pricing options listed above, you must opt out of a CCE program in order to maintain your pricing election. If you do not opt out, you will not receive this pricing unless offered independently by the CCE program.

Billing and Rates

Rate Changes

If you are a CCE customer and wish to change rates you must contact PG&E to do so at: 1-866-743-0335. Customers may opt to change rates 2 times in a twelve-month period. After a customer changes their rate for a second time in a twelve-month time period, they must stay on that rate for one year. The chosen rate schedule will begin on the last billed date at the time the application for the rate change was processed.

Are customers transitioning to CCE service no longer "grandfathered" into NEM?

A customer transitioning to CCE service will remain grandfathered on the original NEM design if they were on it as a bundled PG&E customer. From the perspective of the NEM grandfathering eligibility, PG&E will treat a CCE customer no differently than bundled customers. The CCE customer on NEM will get their generation credits from the CCE rather than PG&E, but their eligibility for grandfathering is unchanged by a move to or from CCE service.

Are customers on a rate schedule open to existing customers but closed to new customers (such as E-7) who transfer to MCE and then later opt out transferred back at the same closed rate, or are they moved to a comparable open rate (e.g., E-6)?

The customers' eligibility for E-7 is unchanged by a move to or from CCE service. If a customer on E-7 transfers to MCE it may remain on E-7 so long as that rate remains open to existing customers. Similarly, if it later returns to bundled service, they may continue on E-7, so long as that rate schedule remains open to existing customers. There are only a few rate schedules that are not open to CCE customers, such as SmartRate and Peak Day Pricing.

How will I be billed for CCE service?

Customers who receive their electric supply from a CCE receive a consolidated bill issued by PG&E that includes charges from both parties. PG&E collects payments on behalf of the CCE, which are then sent to the CCE.

The first page of the consolidated bill shows PG&E charges and CCE charges as separate line items along with the total amount due. Subsequent pages of the bill contain PG&E specific charges related to electric delivery services along with gas charges (when applicable). Finally, details of CCE charges appear on a separate page of the bill under the heading "Third-Party Electric Generation Detail." There are no duplicate charges.

How much will I pay for PG&E's electric charges?

Under a CCE program, PG&E will continue to bill you for non-generation charges, which include electricity delivery (transmission and distribution) and other miscellaneous charges (e.g., public purpose programs). Additionally, PG&E assesses a tiering of rates through its delivery charges for residential customers, known as the "Conservation Incentive Adjustment" (CIA).

You will also be assessed a "Power Charge Indifference Adjustment" (PCIA), which is a charge to cover PG&E's generation costs acquired prior to a customer's switch to a third-party electric generation provider.

Your CCE provider will bill you separately for its electric generation charges, which are included in the monthly bill you receive from PG&E. To see PG&E's non-generation rates, click one of the links below based on your account type – residential or business – and locate your rate schedule in the left-hand column.* The price you pay for non-generation appears in the green column.

[Residential Non-Generation Rates](#) (PDF, 203 KB)

[Business Non-Generation Rates](#) (PDF, 175 KB)

*Your rate schedule can be found under the "Electric Account Detail" heading of your PG&E bill.

Why is my home's electric use billed according to "pricing tiers?"

The State of California requires investor-owned utilities like PG&E to charge all residential customers on a tiered rate structure which is reflected in the Conservation Incentive Adjustment section of your bill. With tiers, electricity is charged at a progressively increasing rate based on your household's use. At the beginning of each month, you start with a baseline amount of electricity where energy costs the least— Tier 1. The higher the tier, the more you pay for a kilowatt-hour of electricity in that tier. You can find your baseline quantity on page 1 of your monthly PG&E energy statement.

As a CCE customer, this tiered rate structure remains in place for your delivery (non-generation) charges. The Conservation Incentive Adjustment is included within your PG&E delivery charges.

What is the Power Charge Indifference Adjustment (PCIA)?

PCIA is the portion of your bill intended to ensure that customers who receive their electric supply from third-party providers, such as a CCE, pay their share of costs for energy that was acquired by PG&E to serve them prior to their departure.

The PCIA is included in PG&E's "non-generation charges" and may change annually to ensure that PG&E's remaining customers do not bear any cost created by departing customers who receive their electric supply from a third-party provider, such as a CCE. Customers who participate in the Medical Baseline Allowance program are exempt from the PCIA charge.

What is the impact of generation rate flattening and the Conservation Incentive Adjustment on CCE Customers?

The Conservation Incentive Adjustment (CIA) will be a credit in Tiers 1 and 2 and a charge in Tiers 3 and 4. While the CIA will not change the energy charges for PG&E's bundled customers, the impact to bills of CCE customers will depend on whether the CCE matches the same flat structure – and level – of PG&E's generation rate.

Why do I have a "Vintage Rate" as a CCE customer?

The portion of PG&E's generation rate that needs to be recovered through the PCIA depends on the year in which the customer began receiving generation supply from the CCE. Up to that point, PG&E was responsible for undertaking generation commitments to serve the customer. The customer's Vintage Rate does not change, but the PCIA rate for that vintage will likely change every year.

What is a Franchise Fee Surcharge (FFS)?

Customers who receive their electric supply from a third-party provider are billed a franchise fee surcharge (FFS). PG&E normally collects the FFS directly from full bundled customers in the "Total Bundled Rate."

The money collected through the FFS is paid to municipalities for the purpose of supporting vital local services. PG&E acts as a collection agent for this fee.

If I'm in a CCE program and have questions about the charges on my bill, whom do I contact?

If you have questions about the PG&E charges on the bill, you should contact PG&E. If you have questions about the CCE charges on your bill, you should contact the CCE. You may also need to contact one or both service providers for inquiries other than billing. For example, PG&E will continue to help with any questions related to PG&E service charges such as the delivery of electricity, changes to your rate schedule, or service requests such as gas pilot relights or new service arrangements. However, you would need to contact the CCE for any inquiries related to CCE service, such as generation rates or special programs.

[Opt-Out Information](#)

Can I opt out of a CCE program?

You may opt out of a CCE program starting at least 60 days before your account is scheduled to switch to the CCE and any time thereafter. After 60 days of CCE service, there may be charges or conditions from PG&E or the CCE associated with requests to opt out.

Opt outs take effect at the end of a customer's current billing cycle. As a result, customers that opt out will receive a final billing with CCE charges. If a customer requests to opt out of a CCE program less than five days before their meter-read date, the customer may see an additional month of CCE charges on their bill due to the timing of the request. The customer would then be returned to PG&E's bundled service on their next regularly scheduled meter read date.

If you opt out, PG&E will continue to procure electricity for you. If you do not opt out, you will receive electric procurement services from your CCE. In either event, PG&E will

continue providing transmission and distribution services to you. Regardless of whether or not you opt out of CCE service, you will continue to be eligible for ratepayer-funded programs, such as the California Solar Initiative and energy efficiency programs that are funded by distribution surcharges.

How do I opt out of a CCE?

Customers must contact the CCE to opt out. PG&E cannot process opt out requests.

Customers may opt out of CCE service during the enrollment period, or at any time after starting service with the CCE. Opt out requests are handled by the CCE. CCE programs are required to send potential customers at least four notifications that include opt-out instructions; twice during a 60-day period in advance of the date of automatic enrollment, and twice during a 60-day period following enrollment in the CCE program. During these periods, customers can opt out of the CCE program without any cost. To opt out, CCE programs will require customers to take some type of action, such as calling a toll-free number, sending a self-addressed return postcard or letter, or completing an opt-out form on the internet.

Can PG&E process my opt-out request?

PG&E cannot assist with your request to opt out of CCE. To opt out, each CCE program will require customers to take some type of action, such as calling a toll-free number, sending a self-addressed return postcard or letter, or completing an opt-out form on the internet. A CCE is required to notify customers in writing to explain which opt-out methods will be available should they decide to opt out of the program.

Once a customer opts out of a CCE program, can he/she join the CCE program at a later time?

Yes, a customer who opts out of a CCE program can join the program at a later date. However, if a customer opts out of a CCE program after the first 60 days of service with the CCE, the customer will be required to remain with PG&E's bundled service for one year. In order for a customer to join a CCE program after opting out, the customer must contact the CCE program directly.

Can I return to PG&E after starting service with a CCE program?

Yes, you can opt out of a CCE program at any time. If you opt-out during the notification period, you can return to PG&E's bundled service without terms or restrictions. You also have the right to return to PG&E's bundled service after the notification period, although you should check with the CCE to see if any charges might apply. PG&E offers the following options for returning to bundled service during this later period:

1. You can notify your CCE program at least six months before the date that you want to return to PG&E bundled service. When you return to bundled service six months later, you will pay the then-existing bundled electric generation rate, which will be identical to similarly situated PG&E customers in your customer class.
2. If you do not provide PG&E with a full six-months notice, you can return to PG&E bundled service at any time, but you will pay the then-existing transitional

electric generation rate (TBCC) – which may be higher or lower than the then-existing bundled electric generation rate – until six months after PG&E receives notice from your CCE. Thereafter, you will pay the bundled electric generation rate (identical to similarly situated PG&E customers in your customer class).

With either option, you'll be required to make a one –year commitment to PG&E bundled service.

[Additional Information](#)

Where can I find additional information on customer rights, obligations and updates regarding CCE programs?

For additional information concerning customer rights, obligations, and updates regarding the CCE program you may visit the California Public Utilities Commission (CPUC)

website:http://www.cpuc.ca.gov/PUC/energy/Retail+Electric+Markets+and+Finance/070430_CCEggregation.htm

What is PG&E's view on CCE?

For more than 100 years, it has been PG&E's privilege to provide our customers clean reliable and affordable energy, and we look forward to the opportunity to do so for many years to come.

At the same time, we respect the energy choices that are available to our customers, and are cooperating with CCE programs.

If I become a CCE customer, how will my participation in PG&E's Net Energy Metering (NEM) be affected?

If you are a NEM customer with PG&E when you become a CCE customer, you will automatically be enrolled in the CCE's NEM program, if one is available. PG&E will perform an initial true-up when you are enrolled in CCE. This ensures that you will have the same anniversary date on both PG&E and CCE NEM Programs. PG&E will continue to calculate your monthly charges or credits for non-generation and will perform an annual true-up of those charges and credits, while the CCE will be responsible for determining your generation related charges and credits. The CCE's NEM Program may be different from PG&E's NEM program. Please contact your CCE for more information about their NEM Program.

Are CCE customers eligible to participate in the Virtual Net Energy Metering (Schedule NEMV) and Virtual Net Energy Metering from Multifamily Affordable Solar Housing (Schedule NEMVMASH) programs?

Yes, the California Public Utilities Commission authorized on June 4, 2012 the NEMV program and on June 17, 2012 the NEMVMASH program to become available to customers who receive their generation from third-party providers including CCEs.

Are CCE customers still eligible to participate in the CARE or FERA programs?

Yes, both programs are available to customers receiving their energy from third-party

providers including CCEs. The eligibility requirements remain unchanged and applications continue to be processed by PG&E.