# South Bay Clean Power

## Draft Business Plan

February 2017


COMMUNITY CHOICE
PARTNERS
SECURING YOUR COMMUNITY'S ENERGY FUTURE

SOUTH BAY
CLEAN POWER

# LETTER OF INTRODUCTION

Since May of 2014 the South Bay Clean Power group have been in pursuit of six key goals and objectives:

- The fastest path to 100% renewable power – with a goal of reaching that 10 years after our CCA launches;
- No use of Category 3 unbundled Renewable Energy Certificates (RECs) to achieve our 100% renewables goal;
- A Distributed Energy Resources model (DER, which refers to distributed renewable power generation, storage, energy efficiency, demand response and electric vehicle infrastructure) with a Los Angeles County-wide buildout of infrastructure to maximize our DER potential;
- A focus on local economic investment, local power generation, local jobs, local career opportunities;
- A partnership with labor – including project labor agreements, community benefit agreements, sustainable workforce agreements, job training, and apprenticeship program;
- A program focus and emphasis on environmental justice in frontline communities where economic, workforce, and health needs are the greatest.

Achieving these admittedly ambitious but necessary goals and objectives here in Los Angeles County will take an innovative next-generation Community Choice Aggregation (CCA) program, one that leverages not only the best practices of other California CCAs but also our most successful and effective municipal utilities.

This business plan provides the direction, mechanisms and rationales for that next-generation CCA and outlines the design features and implementation process necessary to achieve our goals.

This business plan also details the now-proven funding model enabling our cities to launch a CCA by working with best-in-class power industry professionals which will assume the upfront financial expense until the program is producing revenue.

In producing this report, it also became clear that there are two key decisions to be made by the cities of the South Bay Clean Power group and every other Community Choice Aggregation initiative in the Los Angeles region, (including L.A. County's own effort): whether our CCA will be designed to support Distributed Energy Resources and whether to establish a regional, scaled approach to governing and operating the CCA.

Both questions are critical and precedent-setting, and this Business Model report makes a strong case for affirmative answers to both questions.

## Solution to Regional Governance & Operations

Regarding the regional approach, Los Angeles - with 82 cities as well as the County itself eligible for CCA - is facing an issue that is currently challenging multiple CCA initiatives: from

Monterey Bay Community Power (made up of Santa Cruz, Monterey and San Benito counties), Central Coast Power (comprised of San Luis Obispo, Santa Barbara, and Ventura counties) and most recently Inland Choice Energy, composed of local governments in the Coachella Valley Association of Governments (CVAG), San Bernardino Associated Governments (SANBAG) and Western Riverside Council of Governments (WRCOG).

The challenge for all of us is weighing the easily demonstrable financial, operational and political advantages to implementing a large CCA, against the obvious risk of compromising CCA's core tenant of local control for all but the largest members. How big is too big? How many cities are too many?

Convening a JPA governing board composed of many dozens of elected officials, almost certainly each representing unique municipalities with conflicting energy policy goals driving their pursuit of CCA, would be clumsy and inefficient at best and more likely unmanageable and ineffective.

Consulting studies produced to date (for example the consulting reports produced for the County of Los Angeles and for Inland Choice Energy) have only presented two choices: the establishment of a single large CCA or multiple smaller CCAs that are managed and operated independently from one another.

Our South Bay Clean Power business plan presents a third option, one designed to leverage the benefits of economies of scale while at the same time providing true local control.

Our proposal is based on the model long proven by the municipal utilities in California: multiple autonomous and sovereign CCAs are created in Los Angeles County and they collectively form (or join) a regional JPA to provide economies of scale for services, financing, joint-planning and regulatory engagement.

Doing so allows like-minded groups of cities (such as the Westside and South Bay cities of South Bay Clean Power or a Long Beach CCA group) to exercise local control, with manageable governing boards, over their energy choices, program design, program elements, electric rates and financial reserves, while simultaneously enjoying the economy of scale that a large-scale joint-approach allows for managerial and operational services as well as power purchases.

## Integration of Distributed Energy

Our other point of deliberate departure from the first generation of operating CCAs is our commitment to Distributed Energy Resources (DER) and the related build out of distributed renewable power generation, storage, energy efficiency, demand response and electric vehicle infrastructure.

Up until now, every Community Choice program has been designed at its launch based on the way traditional load serving entities work. Under that business model, the CCA purchases wholesale power for sale at a premium to retail customers. The first generation CCA programs employing this model have been designed, implemented and operated by experts with utility - and more importantly, *power marketing* backgrounds.

The results have been that the fundamental and most critical elements of the CCA — portfolio planning, power procurement, customer outreach, data management and billing wind up

being siloed in the traditional legacy manner, with none of the elements supporting a Distributed Energy Resources model. DER and the significant infrastructure build-out that goes with maximizing the local possibilities become missed opportunities with only a limited scope being achieved under the legacy model. Not nearly enough to meet our goals and objectives.

Effectively and successfully integrating Distributed Energy Resources into these CCA operations only becomes possible and manageable when we bridge the traditional program silos by building in functionality that integrates and interfaces with Distributed Energy Resource technologies and services. This is the logical evolution of the CCA model. Who we hire and what they do will not only satisfy all the requirements of the old model, but will also present our CCA with new opportunities and advantages as Distributed Energy Resources continue to accelerate in California.

This is fundamentally critical, because the acceleration of Distributed Energy Resources is central to California's fight against climate change, and key to our State regulators' goals and policies. While 20% of our state's carbon emissions come from the electricity sector, a full two-thirds are caused by transportation and from appliances that burn natural gas. Accelerating the rate of adoption of electric vehicles and appliances that run on clean electricity instead of natural gas— which in turn depend on how effectively these resources are integrated into the operations of CCAs, utilities and the power grid — is one of South Bay Clean Power's primary goals.

And by combining the responsibilities of a CCA program in contracting for power resources with the authorities of local governments in land use, including zoning, permitting and transportation, South Bay Clean Power can leverage the unique abilities of a locally governed JPA board to use Distributed Energy Resources to maximize greenhouse gas reductions from our specific region in a way no Investor Owned Utility can.

One important and somewhat philosophical point needs to be made here. There is a misconception among less-informed points of view that perceives Distributed Energy as harming CCA performance financially because it deliberately decreases the wholesale market power sales from which a CCA traditionally derives revenue. In fact the opposite is true.

Since a CCA is not a for-profit company required to keep generating profits or face going out of business (a big part of why we're doing this), one of South Bay Clean Power's operating goals is **not** to establish a monopoly, or an agency that continuously grows for the sake of growth or shareholder value.

Our true operating goal is to instead become and stay financially stable – as all CCAs must be and especially one with the scale and scope of South Bay Clean Power. In practice, this means two things: 1) our CCA needs to have a balance sheet and a reserve fund large enough to handle the financial risk inherent in managing a portfolio of power assets and market purchases over time, and 2) our CCA should not over-build or over-contract for utility-scale power assets above its foreseeable needs. (Otherwise it risks incurring stranded costs, i.e. committing to pay for an asset that it doesn't end up using.)

CCAs have certain cost responsibilities for existing power generation assets (like the old Renewable Portfolio Standards contracts entered into by the utilities, and a small amount of

traditional generation) and will have to contract for new utility-scale renewables to meet or exceed the 50% by 2030 RPS. That leaves plenty of headroom in terms of additional power that will be needed — and we will want to fill that "open position" with Distributed Energy instead of new fossil fuel power plants and transmission lines.

For example, we intend to make it a high priority to maximize the "nega-watts" that come with proactive and aggressive energy efficiency efforts, thereby reducing our CCA's overall power needs– but it would be misguided to view that reduction in potential power sales as undermining the financial viability of our CCA. Because from a financial standpoint, those energy efficiency gains make us more stable, not less.

Our energy efficiency efforts and other Distributed Energy Resources like our additions of local distributed renewable energy generation, storage, demand response and electric vehicle infrastructure will take some time to both build out and produce results — at which point, South Bay Clean Power will have accrued a sufficient reserve fund by that time. Past that point, our decrease in power sales will lower our CCA's risk exposure (because we'll be responsible for a lower volume of power purchases).

Managing that process well — i.e. not over-purchasing centralized power contracts — depends on effectively integrating Distributed Energy Resources into our planning and operations. That smart integration is a requirement, not an option: the Distributed Energy transition is already accelerating and changing the dynamics and market operations of the power sector.

To be financially responsible, we must be cognizant of and understand the scope and characteristics of these power resources coming online in our territory and ready to use them to our advantage. The functionality we have integrated into the design of South Bay Clean Power's CCA will allow this.

In our final analysis, failure to anticipate and fully embrace Distributed Energy Resources would create unacceptable financial risks for CCAs. We must work proactively to avoid and mitigate those financial risks by ensuring a smartly-integrated DER infrastructure build out or we cannot achieve our goals and objectives.

However, when we maximize the potential for our DER we position our region to reap significant workforce and economic development benefits. For example, according to the recent report for San Jose, *"Community Choice Energy: What is the Local Economic Impact?"*:

> *This report finds that local economic benefit is directly correlated with local renewable energy investment. Under the scenario with the highest level of local solar deployment, this report projects more than 2,000 jobs per year will be created regionally from CCE activity, with an associated $1.25 billion of incremental economic activity over six years, from 2018 to 2023. Using current deployment percentages by jurisdiction, San José could realize $425 million of the total estimated economic impact within the city itself.*

The job and economic activity impacts that a CCA can create by accelerating rooftop solar and other DERs (e.g. energy storage, energy efficiency, demand response and electric vehicles) can be profound. Our recommendations for South Bay Clean Power are designed to maximize these goals from Day 1.

## Why We Commissioned this Report

This Business Plan intentionally does not follow the legacy CCA Feasibility Study structure, in which it is assumed the CCA will adopt the same model and implementation strategy that consultants first used to launch California's the original CCA (established in 2010). In that approach, consultants provide CCA financial forecasts and impacts, advise on startup costs and customer enrollment phases, and provide a summary of the various requirements and risks that CCA programs entail. While different governance options and staffing levels may be analyzed, these studies have never detailed the actual implementation and contracting process or the specific functional capabilities the CCA is designed to deploy (beyond a cursory degree) — particularly in regards to energy risk management services. The County of Los Angeles' "Business Plan", despite the change in title, also followed this legacy structure.

In our opinion, these types of reports are not only now outdated they also offer the wrong loading order. Over the last two years, there have been ground-breaking advances in how CCA programs are designed and implemented that should be recommended to local governments. In contrast, reports like the one consultants recently prepared for the County of Los Angeles completely omit these critical developments — in positioning the consultant to provide power planning, power procurement and other energy-related services, the consultant's recommendations essentially pre-determine the most important aspects of the CCA's program design and sets in motion an implementation process without discussing whether there are competing and superior alternatives that local governments should first consider.

Most notably, as this report makes clear, the process through which its services are solicited and contracted is possibly the most critical step in implementing a CCA. This process is the appropriate forum in which stakeholders should discuss what services or capabilities are necessary to accomplish the CCA's goals, and what types of companies should be hired to provide those necessary services.

The subsequent solicitation and hiring process directly determines the practical capabilities of the program, and the timeline by which CCA staff will assume or increase certain responsibilities. It also locks in the contractual relationship with various contractors to provide necessary services to the CCA for years into the future. In other words, this stage determines how all the pieces fit together, and what the resulting CCA is or is not capable of doing.

Although no other CCA consulting studies to date have detailed how this critical process should be carried out, we consider it foundational to the success of any CCA in Los Angeles County. We are excited about the significant opportunities for improvement available to South Bay Clean Power and other LA County CCAs.

Specifically, we commissioned this report to leverage the advantages provided by the recent "Humboldt County model." In this model, the Redwood Coast Energy Authority has 1) established an advanced and improved model of Community Choice 2) using a solicitation and contracting strategy that does not require local governments to pay upfront for the implementation of the program or assume significant financial liabilities.

Our report details precisely how the Humboldt County model is more cost-effective and transparent, and how it ultimately yields a CCA that provides superior energy risk management services as compared to those employing the more commonly used legacy CCA model.

This report shares Humboldt County's lessons-learned and best practices from the broader Community Choice and public power industry. We have also tailored the program design to meet our objectives for Distributed Energy and regional governance here in Los Angeles.

By sharing the analysis and recommendations on how a CCA program can be best designed, in this report and by detailing the process by which local governments should be contracting for the services necessary to implement and operate the program, we aim to guide our local governments to hire the right type of companies to provide the best possible services, on the most favorable terms and pricing. We also hope to make it possible for others throughout the state to do likewise.

Towards this end, this report has been written with several audiences in mind:

- Local elected officials who must understand the choices they're being asked to make,
- Staff in charge of developing expertise in managing and advising on this process,
- Interested members of the public,
- The variety of third-parties who will be asked to provide services to assist the implementation and operation of the CCA.

Consequently, additional details in this report's appendices are provided for parties that wish to develop a deeper understanding of the issues facing the CCA sector and how to launch and operate a CCA program from a technical perspective.

## Relationship with Southern California Edison

It would be a misconception to consider our CCA in "competition" with our investor owned utility, Southern California Edison (SCE).

We believe there is ample opportunity for a cooperative and mutually beneficial relationship between South Bay Clean Power and SCE. Our direct experiences to date have given no indication of any hostility towards CCA whether it be with the existing Lancaster Choice Energy, the County of Los Angeles' efforts or our own South Bay Clean Power interactions with SCE's CCA team— quite the opposite, in fact.

For example, Southern California Edison — uniquely among California's investor-owned utilities — has summarized and maintains a "CCA Handbook" that details how a CCA is implemented and operated in coordination with the utility. Additionally, SCE has published a number of detailed documents capturing their intended approach to integrating Distributed Energy Resources. We note these documents in our technical appendix for further reference.

This contrasts with the well-documented, anti-CCA approach and hostile actions of both Pacific Gas & Electric and San Diego Gas & Electric. That may be related to the fact that our utility uniquely is electricity-only and has no vested financial interest in controlling power planning in order to build more natural gas power plants. It may also be related to the fact

that our utility is pro-actively and publicly planning to support Distributed Energy Resources, and doing so in a fairly transparent, systemic fashion.

Another consideration may be that the current CCA initiatives underway in Southern California have the potential to assume control over almost all of SCE's territory, and in a surprisingly short period of time. This is an unprecedented development and one for which we do not currently have the regulations in place.

It is in both our CCA's and Southern California Edison's self-interest to smoothly manage this scale of transition to public power. Whatever the reason, we should proceed with cautious optimism that CCAs and SCE can collectively navigate this period of change.

Some potential areas of cooperative business interests we may have with SCE include purchasing power from them, analyzing how to optimize power planning efforts, engaging in joint management of key accounts, sharing financial mechanisms and even operational systems and workflow processes, and engaging in regulatory advocacy that reflects our partnership (or at least understanding) on how best to integrate Distributed Energy into our respective spheres of responsibility in energy planning and operations.

The customers and businesses that choose to install Distributed Energy Resources, and the companies that finance, construct, aggregate and manage these assets, are creating the new energy infrastructure. They will sell power products to both our distribution utility and our CCAs, and create great value in so doing.

The vision we collectively share is to accelerate the transition to renewable resources while minimizing the investment in traditional fossil-fuel plants and transmission lines. Simultaneously accelerating the build-out of intelligently-managed Distributed Energy and the upgraded, well-designed distribution grid necessary to support this evolution is enlightened self-interest for both parties involved.

This is a long-term commitment and a long-term model for boosting economic and workforce development benefits for our participating communities. This is the way we achieve our goals and objectives.

## Concluding Remarks

In this time of rapidly accelerating and damaging climate change impacts, Community Choice Power programs are the single most effective tool we have available to our communities to cut GHG emissions and accelerate the transition to 100% renewable and distributed energy. Our ability to accelerate that move away from fossil fuel-powered electricity will have tremendous positive impacts on our region's future health, prosperity and quality of life.

We do not embark on this path without support from our state legislature and regulatory bodies. SB 350, SB 32 and Title 24 are just three of California's powerful laws driving us to cut our GHG on aggressive and ambitious timelines by maximizing our reliance on renewable and distributed energy. The California Public Utility Commission, California Energy Commission and California Independent System Operator are actively supporting and encouraging the move to renewable and distributed energy, and providing both guidance and funding to do so.

Apart from electricity generation and natural gas combustion, sources of pollution in our region also includes six oil refineries, the Los Angeles International Airport, and the Ports of Long Beach and Los Angeles — from which the impacts on local air quality and related health have been severe and costly.

Our Westside and South Bay cities are in a unique position to provide both the leadership and the best model for others to follow with the decisions we make about Community Choice Aggregation. At this critical moment in time, your vision and thought-leadership in choosing the best way forward will impact our electricity future for decades to come — not just in Los Angeles, but throughout our state of California, and potentially across the USA.

Excelsior!

Joe Galliani

Chair of the South Bay Clean Power Working Group

350.org 100% Renewables Organizer for Los Angeles County

# TABLE OF CONTENTS

# EXECUTIVE SUMMARY

Across the USA and particularly in California, the Community Choice Aggregation (CCA) movement has traditionally been championed by a variety of proponents for local control, economic and workforce development advocates, anti-monopoly campaigners, social and environmental justice organizations, and renewable power & clean energy industry groups. CCAs are seen by the vast majority across the political spectrum as a democratic mechanism that empowers local governments to take control of their community's energy future to achieve local policy goals — such as decreased carbon emissions, stabilized and lowered rates, increased investment into renewable and Distributed Energy Resources (distributed generation such as rooftop solar, energy efficiency, energy storage, demand responses and electric vehicles), providing local emergency resilience and energy security, and the creation of sustainable local jobs and career training.

No other state has been as successful as California in creating effective CCA programs. Our State's CCAs are financially stable, long-term and empowered agencies that are fundamentally aiming the arc of power planning and operations steadily towards renewables and Distributed Energy Resources. It is our intent that, in applying best practices from both the CCA and broader public power industry, the CCA the South Bay Clean Power group initiates will be the most powerfully effective and reliable in its capabilities and most profound in its impact to date.

To do so, we have proposed an advanced program design for the South Bay Clean Power CCA. A "program design" is akin to a business model, composed of:

- The CCA's governance structure;
- The various managerial and operational functions of the CCA (referred to as an Organizational Model, i.e. the practical capabilities that allow the program to achieve local policy goals);
- The division of responsibility therein between staff, consultants and larger service providers (during implementation, and then after launch as the program hires additional staff);
- How these relationships are contractually structured.

This in turn determines the process by which the CCA can be initially financed and implemented, the extent to which the CCA can exercise choice in terms of diversifying the sources of its power supply and the integration of renewable and Distributed Energy Resources, and how effectively the CCA handles the various operational, planning and regulatory risks inherent in the management of its power portfolio choices over time.

Owing to its size — South Bay Clean Power will be twice as large as the largest CCA under implementation to date — launching the CCA will require a program design that more closely resembles utility operations, particularly in energy risk management capabilities.

Specifically, and in contrast to how most CCA programs have launched, South Bay Clean Power will need to procure power supplies from multiple different counterparties from the outset. Additionally, the CCA will need to work collaboratively with Southern California Edison to create its initial portfolio of power contracts, because the utility has already entered into certain contracts on behalf of customers who will be served by South Bay Clean Power and has proposed to credit the CCA for certain obligations that these contracts fulfill.

Both requirements necessitate that South Bay Clean Power contract for more comprehensive energy risk management services at launch as compared to how most CCAs have been designed to

date. Fortunately, there are proven models — that we detail in this report — which will allow South Bay Clean Power to do so in an expeditious and cost-effective manner.

An additional benefit of this approach is that it allows South Bay Clean Power to have full transparency and oversight into every power plant that the CCA will contract with, and how all aspects of its power operations will be conducted. This transparency and comprehensive approach will allow South Bay Clean Power to fully integrate Distributed Energy Resources — such as energy efficiency, distributed renewable generation resources (e.g. rooftop solar photovoltaic), energy storage, electric vehicles, and demand response technologies — into the CCA's managerial and operational activities and to maximize local workforce and economic development by doing so.

In summary, this Business Plan comprehensively details the design requirements and implementation process for launching South Bay Clean Power. Note that, unlike the Los Angeles Community Choice Energy CCA Business plan of July 28, 2016 this report does not forecast the results of implementing a CCA in any quantitative manner. For example, we do not forecast the renewable content of the program's energy portfolio, or what the rates charged to customers will be in comparison to Southern California Edison's rates. The County's study forecasted the performance of a CCA serving only the County's unincorporated territory, and therefore these projections still need to be conducted for South Bay Clean Power specifically (as well as for all other non-County CCAs).

All else being equal, we anticipate comparable economics for the South Bay Clean Power group of cities (or similarly-sized CCAs in Los Angeles County), and comparable potential in procuring a baseline of renewable power that exceeds that of Southern California Edison's RPS while also maintaining competitive rates.

Under the implementation process recommended in this report, these forecasts will be produced specifically for South Bay Clean Power by expert power management contractors — with significant experience in running public power agencies — using utility-grade modeling capabilities and market intelligence, at no upfront cost to local governments and on an expeditious timeline.

## Program Design Review Process

We started our Program Design process by analyzing the development process and program designs of most California CCAs in operation or in the process of launching including Marin Clean Energy, Sonoma Clean Power, Lancaster Choice Energy, CleanPowerSF, Peninsula Clean Energy, the Redwood Coast Energy Authority, East Bay Community Energy, and Silicon Valley Clean Energy. Each new CCAs provided lessons-learned, as best practices were applied and as the market for services expanded.

As summarized in the proceeding two sections, distinct advantages pioneered by the newly-formed CCAs Silicon Valley Clean Energy and the Redwood Coast Energy Authority offer powerful best practices that we have incorporated for South Bay Clean Power. These design innovations both enhance the CCA's energy risk-management capabilities and streamline program implementation while minimizing overall costs.

### *Expanded Energy Risk Management Capabilities*

New Community Choice programs in California have typically procured almost all their power supplies from a single power supplier (or "marketer"). After program launch, the CCAs begin to

diversify their power portfolio primarily by contracting for new renewable facilities. However, being able to create a power portfolio from numerous different suppliers has advantages, particularly in diversifying financial risks inherent in the supply of power, and is critical for large CCAs such as South Bay Clean Power to do so at launch. These capabilities necessitate contracting for services in a different way than most CCA programs to date have done.

This was recently explained to the Silicon Valley Clean Energy (SVCE) Board of Directors by CEO Tom Habashi (former Director of the City of Roseville's municipal utility), who wrote:

> *"SVCE's power supply requirement is likely to be the largest of all the CCAs operating in California today. Consequently, it's important that we diversify not only the source of electricity, but also the suppliers/marketers that will serve our territory. This supplier diversification objective is best served by contracting with an independent scheduling coordinator (SC) as opposed to utilizing SC services that are being provided free of charge from some of the larger marketers.*
>
> *…*
>
> *SC services involve interfacing with the California Independent System Operator to exchange information regarding projected loads, generation supply schedules, and grid conditions to help the CAISO maintain system balance and grid reliability. Scheduling coordinators must maintain a 24 X 7 operation and specialized information systems in order to deal with grid operations that may arise at any time. SC services also involve processing financial settlements with the CAISO for load and generation schedules and can include short term energy trading, risk management, and other services. "*[1]

South Bay Clean Power will be twice the size of Silicon Valley Clean Energy, and should consequently incorporate the program design elements described by CEO Habashi above.

Specifically, the program should contract for Scheduling Coordinator services so that the company which provides the services is financially indifferent to the sources of power supply. If all the CCA's power suppliers and power plants were a symphony, the Scheduling Coordinator would be the conductor: it is constantly managing the power supplies of the CCA, interfacing with the wholesale electricity market to do so, and "fine-tuning" the program's power supplies to minimize costs and financial risks. Because the Scheduling Coordinator has a role in advising on and actively providing risk management services, it cannot have a vested financial interest (i.e. be making a profit off of) the specific sources of power.

To deploy these capabilities, CCAs have the following options in contracting for the necessary services from:

1) An independent Scheduling Coordinator (as described by CEO Habashi above), supplemented by increased upfront staff costs and additional consultants to provide related planning and procurement services related to manage various risks.

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[1] Staff report from CEO Tom Habashi to Silicon Valley Clean Energy Board of Directors, 11/9/2016. Available online at: [https://www.svcleanenergy.org/files/managed/Document/537/2016-1109%20Agenda%20Packet%20%28F%29.pdf]

2) A non-profit power marketer, which would provide not only Scheduling Coordinator services but a full suite of energy risk management services in an integrated fashion, and would do so in a fully transparent manner that does not make any profit from the sources of power;
3) For the CCA itself to register as its own Scheduling Coordinator, and to employ a "Scheduling Agent" that essentially acts as the nonprofit power marketer described above (i.e. the company fulfills all required duties on the CCA's behalf, in a transparent and neutral manner).

All three of these are commercially-available options in the California energy market today:

1) Besides Silicon Valley Clean Energy, Marin Clean Energy is also planning on using an independent Scheduling Coordinator (Marin launched seven years ago, has also evolved to the point where this is a logical next step for their CCA).
2) The Redwood Coast Energy Authority of Humboldt County as well as the City of Solana Beach CCA have contracted with a non-profit power marketer to provide a range of energy risk management services (including Schedule Coordination);
3) Several municipal utilities in California are registered as Scheduling Coordinators but employ a Scheduling Agent to provide scheduling services as well as a range of related energy risk management services.

We recommend the second or third options above for South Bay Clean Power, rather than the first option being employed by Marin Clean Energy and Silicon Valley Clean Energy. Managing a diverse portfolio of power contracts requires a broader and integrated set of energy risk management services beyond just schedule coordination. Marin Clean Energy is still evolving these capabilities after a period of seven years.

Silicon Valley Clean Energy represents another step in the evolution of CCA, by deploying more of these capabilities at launch. This will allow their CCA to contract with six counterparties, but still requires a complicated implementation process, additional consulting expenses, and a period of time to develop full energy risk management capabilities as the CCA grows in staff and expertise.

As we summarize in the section below, and detail in the chapter "Case Study: The Redwood Coast Energy Authority CCA Model", we have identified a program design that allows South Bay Clean Power to launch with capabilities that exceed any CCA to date and rivals those of Southern California Edison — and an implementation process that deploys this model of CCA with a minimum of effort and expense for local governments, with no loss of transparency or control. This approach provides the CCA with comprehensive energy risk management services from launch, and allows CCA staff to take over increasing responsibilities over time.

### *Streamlined Implementation Process & Contracting for Services*

While all CCA program designs, and the process used to implement the programs, differ in some respects, there are now broadly two proven models available to local governments that are sufficiently distinct to warrant investigation. Both use the same governance structure, but differ substantially in terms of the practical capabilities of the program, what type of contractors are used to provide services, and the contract structure under which those services are provided. In summary:

1) The first program design was pioneered by Marin Clean Energy, the first CCA to launch in California six years ago. This program design has been widely discussed, reviewed and subsequently applied by numerous CCAs in California.

   - Under this model, the practical process of implementing the CCA begins with releasing an RFP for a consultant to conduct a feasibility study. Subsequently, significant staff and consulting resources are devoted to negotiating bank loans (partially guaranteed by local governments) to cover startup expenses, drafting and filing an Implementation Plan and meeting other regulatory requirements, issuing multiple RFPs for various required services (e.g. marketing, accounting, data management, call center services, etc.), issuing an additional RFP for and negotiating a power purchase agreement with a primary electricity supplier, and managing the process of integrating all the required services up through and beyond the launch of the program.
   - Silicon Valley Clean Energy also used this implementation approach, with the modification that it hired an independent Scheduling Coordinator (as described in the proceeding section) and was consequently able to structure power contracts with six different suppliers instead of a single primary supplier.
   - This model was extremely innovative and has taught many local governments how to understand and contract for the wide variety of services and financial products required to launch a government-run power enterprise. The progress made in California over just the past few years — and the sheer volume of knowledge transfer that occurred in educating hundreds of government staff, elected officials and interested members of the public in how the power sector operates — ranks as one of the most significant and remarkable achievements in the history of the public power industry.
   - However, regardless of the benefits of this program design and implementation process, experience has revealed areas where this model can be streamlined and improved. The original model requires significant staff resources and upfront expense (funded by local government contributions or guarantees for loans), and complicates and lengthens the implementation process.

     Additionally, under this approach the CCA does not launch with the comprehensive and integrated set of energy risk management services that utilities possess; instead, the CCA deploys a limited sub-set of these services, and divides those responsibilities between multiple staff, consultants and the primary energy supplier. The CCA then hires staff and develops more comprehensive capabilities over a period of years, while integrating the various energy risk management functions that were separated during the initial contracting process.

2) The second program design was pioneered by the Redwood Coast Energy Authority in Humboldt County in late 2015. It incorporated numerous best practices drawn from the CCA and broader public power sector, and avoids the shortcomings of the original model described above.

   - Under the Redwood Coast Energy Authority's implementation process, a single RFP requesting all necessary services and financing was issued, requiring all contractors to work at-risk (i.e. to defer payment for services until after the program launches successfully and is generating revenue). In many ways, this represents a natural evolution for the CCA

industry, in that the process and costs of implementing a CCA are now so widely understood that industry leading companies are willing to work at-risk while carrying out the necessary services. Consequently, it is much more streamlined for government staff and effective in inducing competition for services than the original implementation process first established by Marin.

- The Redwood Coast Energy Authority received four bids in response to their RFP, and subsequently negotiated three contracts with the companies on the winning bid. A feasibility study was produced at no cost to the local governments. The entire process, from contract execution to the launch of the CCA, was condensed to one year, required minimal staff time, and cost approximately 50% of what any other CCA has paid to date for comparable implementation services. Humboldt's CCA is currently signing power contracts and preparing to launch in March 2017.
- Perhaps most importantly, Humboldt's CCA will launch with a comprehensive and integrated set of energy services and risk management capabilities that rivals established utilities. These capabilities will be more comprehensive than what Silicon Valley Clean Energy is deploying at launch, and in some respects, are even more advanced than Marin Clean Energy (after seven years of operations). These capabilities are important for CCAs in accelerating the integration of renewables and Distributed Energy Resources, while also managing financial risk in the provision of power.

  The emergence of these services, provided by companies that are widely-respected in the broader public power industry, represents an advantageous evolution for CCA program design in California.
- Due to its relatively recent emergence, this model has not been widely discussed or understood by consultants or local governments exploring CCA.

Throughout this report, we highlight the advantages of the Redwood Coast Energy Authority's approach as the most advantageous model to date in terms of ease and timeliness of implementation, least cost, heightened transparency and risk management, and the overall quality of services.

## Recommended Program Design & Implementation Process

Our recommendations for South Bay Clean Power are based primarily on the implementation process and program design pioneered by the Redwood Coast Energy Authority.

To achieve South Bay Clean Power's goals in the most expeditious, cost-effective and expert fashion, we have also included various additional refinements based upon lessons-learned that enhance our recommendations on RFP design, performance-based contracting, and the overall solicitation and contracting process within this approach. Additionally, our recommended financing strategy combines the approaches recently used by the Redwood Coast Energy Authority and Silicon Valley Clean Energy.

After adopting many of the elements pioneered by the Redwood Coast Energy Authority, this report's proposed program design for South Bay Clean Power advances two additional innovations specific to South Bay Clean Power's goals and opportunities. The first expands the practical capabilities of the CCA to accelerate Distributed Energy Resources (distributed generation such as rooftop solar, energy efficiency, energy storage, demand responses and electric vehicles), while the

second provides for a collaborative governance model between South Bay Clean Power and other CCA programs in the Los Angeles region, based upon how municipal utilities in California collaborate and share services.

### *Core Program Design & Implementation Process*

Based on the successful example of the Redwood Coast Energy Authority, we recommend the issuance of a single RFP for all required services, stipulating that contractors delay compensation for services until after the CCA launches successfully. We also recommend the reliance on a power management contractor to provide a full suite of utility-grade energy risk management services to manage a diverse portfolio of power contracts for the CCA from launch. As we explain in detail, this represents the most effective strategy to achieve:

1) An accelerated CCA launch timeline;
2) The lowest cost of implementation, with the least commitment of staff time and government expense or financial liability;
3) A CCA with a superior design, enabling energy risk management capabilities matching more established public power entities;
4) Services provided in a manner that is more transparent and supportive of the internal growth of the CCA program (in terms of staff capabilities and expertise).

We therefore strongly recommend this approach for adoption by South Bay Clean Power and any other local government exploring Community Choice. Based on our conversations and communications with Humboldt County staff and other power industry experts, we have also applied best-practices and lessons-learned to date — to both fully explain and further refine the Redwood Coast Energy Authority's approach, as presented in this report.

These recommendations comprise the bulk of this report, as detailed in the chapters "Case Study: The Redwood Coast Energy Authority CCA Model", "Implementation Process and Timeline", "Regional JPA Managerial and Operational Responsibilities", "Contracting for Services" and certain technical appendices such as "Best Practices in RFP Design".

### *Financing Strategy*

Our recommended financing strategy, as described in the chapter "Financing Program Implementation", combines:

1) The Redwood Coast Energy Authority's contracting approach of issuing a single RFP for services to minimize and outsource implementation costs to contractors; with
2) Silicon Valley's strategy of negotiating power supply financing later during the implementation process (to yield competitive financing that requires minimal to no guarantees from local governments).

In adopting the at-risk, performance based contracting approach pioneered by the Redwood Coast Energy Authority to implement the CCA, South Bay Clean Power will limit local government financial liabilities and expenses to:

1) Minimal direct staff and legal costs associated with JPA formation and RFP issuance, bid evaluation and contract negotiations, and for overseeing implementation activities.

Direct staff and legal costs could be funded by the member governments of South Bay Clean Power directly. Alternatively, the initial RFP for services could also request a nominal line of credit to fund these expenses — though given the early stage of implementation, this would require a guarantee from local governments. Loans may also be available through labor unions that support the CCA effort, and if the County of Los Angeles joins South Bay Clean Power in forming the Regional JPA, the county has indicated that it could provide significant funding to cover or partially guarantee any initial financing requirements.

2) Liability for contractor expenses during implementation, beginning only after the point in time when local governments have accepted the CCA Technical Study produced during the design phase (from that point on, implementation costs are tracked and either repaid as a lump-sum if the contract is canceled by the JPA prior to program launch, or otherwise repaid in regular installments over the course of the first few years of operations);

   Contractors will be relied upon to self-provide financing required for all activities and requirements associated with their respective scope of work during program implementation, with the exception of power supply financing.

Power supply financing should require little, if any, guarantee from local governments. And will be negotiated by the CCA's chosen power management contractor later during the implementation process.

### *Distributed Energy Resources*

In recognition of the fact that the Redwood Coast Energy Authority was a pre-existing energy agency that already oversaw various energy efficiency and Distributed Energy Resource programs (and did not request these services), we have expanded the proposed scope of services requested of contractors to include various functions related to the integration of Distributed Energy Resources into the CCA's energy planning, procurement, power operations, data management and customer engagement functions.

To identify these functional capabilities, we surveyed the DER initiatives of existing CCAs (particularly Marin Clean Energy), the business models of companies that specialize in the aggregation and management of DER for integration into wholesale electricity markets, and also Southern California Edison — which is the leading utility in the country for integrating DER into their planning, procurement and operational activities.

The inclusion of these DER functions is necessary if the CCA is to meet the policy objectives of South Bay Clean Power in relying on an increasing volume of Distributed Energy Resources to fulfill its load-serving obligations, with the accompanying benefits of local economic and workforce development. Without these functional capabilities, the CCA will be limited in its ability to contract for Distributed Energy Resources — in other words, our recommendations allow South Bay Clean Power to accelerate Distributed Energy Resources (distributed generation, energy efficiency, energy storage, demand responses or electric vehicles), with the related increase in jobs, community benefits and local investment.

These functions, and the supporting role of local government authorities in land use and transportation, are described in the chapter "Distributed Energy Resources".

## *Regional Governance Model*

There are 83 governments in Los Angeles County eligible to form CCA, and while such an enormous economy-of-scale would be advantageous, forming a single Joint Powers Authority would be impractical on several levels.

The number of elected officials on the board would have to be less than the total number of governments involved. This necessitates a representative form of governance, in which multiple local governments are represented by one board member. Additionally, such a large territory will include governments with divergent goals for the CCA — objectives such as lower rates, financial stability, increased renewables, lower greenhouse gas emissions and support for distributed energy and workforce development all involve trade-offs in governance decisions.

Combined, these factors will likely cause friction at the board level, risks imposing the policy goals and priorities of certain governments or factions on all member governments, diminishes the quality of discourse in matters of governance, and calls into question the long-term stability and impact of the JPA as a political entity if certain governments choose to leave or not participate at all as a consequence.

Our proposed governance solution is based on the one long-proven by the municipal utilities in California, designed to achieve economies of scale while preserving (and in many ways expanding) local control choices of the municipal governments involved:

- Multiple autonomous and sovereign CCAs are created in Los Angeles County;
- These CCAs collectively form a "Regional JPA" to provide economies of scale for services, financing, joint-planning and regulatory engagement.

Doing so allows like-minded groups of 10-20 cities (such as the Westside and South Bay cities of South Bay Clean Power) to form a CCA under which each government has a seat on the board, and exercises local control over their energy choices, program elements, rates and financial reserves — while preserving the economy of scale that a county-wide JPA allows for power purchases and various key services.

These recommendations are described in detail in the chapters "South Bay Clean Power Governance Structure" and "South Bay Clean Power & Regional JPA Staffing and Development".

## Enabling Coordination between Southern California Edison & Community Choice

One of the primary advantages of the model pioneered by the Redwood Coast Energy Authority is that it allows the CCA to deploy a set of integrated energy risk-management services at launch that are comparable to Southern California Edison's capabilities. This is a significant advantage in and of itself. However, as we explain below, the unprecedented size of the near-term transition to Community Choice in Los Angeles necessitates much closer collaboration with Southern California Edison on power planning issues than any CCA initiative to date. In this context, mirroring the utility's capabilities — and doing so in a centralized and scaled fashion under the "Regional JPA" governance model — will effectively allow staff and contractors employed by the CCA to work collaboratively with their counterparts at SCE to ensure that the transition to Community Choice is executed in a competent and transparently-managed fashion.

At full participation, South Bay Clean Power will be twice as large as any other CCA implemented to date in California. Moreover, if the Regional JPA governance model is employed for Los Angeles

County, it will be responsible for managing electricity to serve more than one-third of Southern California Edison's territory.

Community Choice programs to date have accounted for a much smaller percentage of utility load. However, this scale of transition anticipated in Los Angeles necessitates closer collaboration with SCE to manage effectively and successfully. SCE has entered into numerous power-supply contracts on behalf of the customers that will be enrolled in the CCA. The manner in which the CCA's future power procurement is structured has to incorporate the energy and financial impact of many of these contracts, particularly for renewable resources that supply the CCA's future customers (or are currently under construction to do so).

In assuming responsibility for various load-serving entity obligations from Southern California Edison, South Bay Clean Power staff and contractors and their counterparts at the utility will also need to collaborate on a number of initiatives going forward, collectively designed to:

1) Accelerate the transition to renewable resources while minimizing the investment in traditional fossil-fuel plants and transmission lines;
2) Simultaneously accelerate the build-out of intelligently-managed Distributed Energy Resources and the upgraded, well-designed distribution grid necessary to support this evolution.

California has not defined the regulatory process required to facilitate this large a transition between two load-serving entities (i.e. Southern California Edison to Community Choice programs). Consequently, we have been engaged in regulatory workshops with Southern California Edison on these issues. In our preliminary discussions with relevant SCE staff — representing the departments responsible for power supply management, corporate strategy and regulatory counsel — SCE has expressed a willingness to assist South Bay Clean Power in planning for this transition, and in working with the CCA's energy management contractor to do so in an expedient and transparent fashion (provided that confidentiality agreements are first executed).

To be clear, this is our understanding of the discussions, and not a formal statement or commitment from Southern California Edison.

To our knowledge, no other Investor-Owned Utility in California to date has discussed proactively and transparently collaborating with any CCA on power supply planning issues. This process, if effectively executed, will assist South Bay Clean Power (and all other CCAs in the Los Angeles region) in avoiding any unexpected complications in power supply planning (and related regulations) that might otherwise cause a delay in the program launch or incur unforeseen financial risks.

To this end, we recommend that South Bay Clean Power continue to engage with Southern California Edison throughout the process of implementing Community Choice.

## Structure of this Business Plan

The sections below summarize each successive chapter in this report:

### Case Study: The Redwood Coast Energy Authority CCA Model

We begin by detailing the experiences and best-practices from Humboldt County's Redwood Coast Energy Authority, organized under the following subheadings:

1) Issuance of a single RFP for all required services and financing;

2) Hiring superior power service providers;
3) Streamlined financing;
4) Innovation in at-risk, performance-based contracting;
5) Transparency, contractual flexibility, cost minimization and timeline acceleration.

These sections provide a brief, narrative context to preface the various best-practices that are incorporated and explained in more detail throughout the report.

### Distributed Energy Resources

This chapter starts with a summary of the Distributed Energy Resource sector (DER, composed of distributed generation, energy efficiency, energy storage, demand responses and electric vehicles), and details why no CCA to date has been designed from the outset to integrate DER into program operations. We then highlight how the authorities of local governments in zoning, permitting and transportation can be coordinated with the responsibilities of CCA programs and aligned to support Distributed Energy Resources. Subsequently, we survey a number of innovative DER initiatives recently undertaken by Marin Clean Energy, companies that specialize in the aggregation and management of DER for integration into wholesale electricity markets, and survey how Southern California Edison is the leading utility in the country for integrating DER into their planning, procurement and operational activities. We conclude by summarizing the best practices that have been incorporated into South Bay Clean Power's design, so that the program will be the first CCA to comprehensively integrate DER into the core of its operations at launch.

### South Bay Clean Power Governance Structure

This chapter begins by summarizing the best-practices and voting model incorporated into our draft Joint Powers Agreement (recently submitted to the South Bay Clean Power Advisory Committee). We then detail the benefits and potential shortcomings of joining with the County of Los Angeles' CCA initiative to manage a CCA through a county-wide JPA. We conclude with our recommended governance model, which is based on the model widely-used by the municipal utilities in California. Our recommendation is the formation of a "JPA of CCAs" under which:

1) Multiple autonomous and sovereign CCAs (like South Bay Clean Power) are created throughout Los Angeles County, and each determines their own power portfolio choices rates and program elements while retaining full control of their financial policies, revenues and reserve funds;
2) These CCAs collectively form a regional JPA to provide economies of scale for its members to share various required services and streamline startup financing, joint-planning and joint procurement exercises (when prudent) and coordinated regulatory and legislative engagement.

**The remainder of the report assumes that this governance model is adopted. However, if South Bay Clean Power chooses not to establish a Regional JPA, and instead implements CCA completely independently of any other program in the region, the bulk of our recommendations and process will not change to any substantial degree.**

### South Bay Clean Power & Regional JPA Staffing and Development

Since all California CCAs to date have launched with minimal staff and subsequently grown over time, this chapter summarizes our recommended best practices to further minimize the staff resources required prior to program launch, provide South Bay Clean Power's CCA with greater

program capabilities at launch, and facilitate an accelerated transition of responsibilities to staff during the initial years of the program's operations.

We provide a narrative description of that process, as well as several charts and tables that depict the overall organization of the CCAs and regional JPA, initial hiring plans, and the detailed transition of responsibilities as the agency grows.

### Implementation Process and Timeline

This chapter provides detailed timeline graphs and narrative descriptions of the process to implement South Bay Clean Power's CCA as well as the Regional JPA, from present day through program launch in 2018.

City council and JPA board actions, key staff hires, committee activities (in finalizing various required documents such as the RFP for services), and implementation activities are all summarized and laid out in a sequential, interlocking process through program launch.

### Regional JPA Managerial and Operational Responsibilities

This chapter lists the various managerial and operational functions that the Regional JPA would provide for its member CCAs — referred to as an "Organizational Model". If South Bay Clean Power does not choose to form the Regional JPA in coordination with other CCAs, then these functions will be deployed solely for and by South Bay Clean Power.

We list approximately forty (40) such functions, organized in ten categories across management and operations. To our knowledge, no report has detailed these functions to the degree contained in this section. It is intended to provide a comprehensive and transparent "snap shot" of the program's practical activities and capabilities for all stakeholders and elected officials involved in the creation of the program to discuss and understand.

All functions are detailed in a narrative, relatively non-technical manner in the appendix "Regional JPA Organizational Model".

### Financing Program Implementation

This chapter first narrates the different CCA program implementation phases and cost drivers, summarizes case studies for five different CCAs operating or under implementation (Sonoma Clean Power, Peninsula Clean Energy, Silicon Valley Clean Power, the County of Los Angeles and the Redwood Coast Energy Authority), contrasts the lessons learned from these case studies (detailing the Redwood Coast Energy Authority in particular), and concludes by summarizing our recommended financing strategy for South Bay Clean Power.

### Contracting for Services

Our last chapter provides a narrative description of the step-by-step process for drafting and issuing an RFP for services, evaluating bid responses, and negotiating service contracts. It begins with an overview of key concepts, explaining the strategies employed by the Redwood Coast Energy Authority during their process, as well as our recommended best practices for South Bay Clean Power.

This process is complex, has a relatively short timeline, requires expert judgement and coordination to manage effectively, and determines the contractual relationship with various contractors to provide necessary services for a period of years. In other words, this process largely determines the

capabilities of the program and timeline by which the CCA can change course or assign certain responsibilities to CCA staff.

This section is intended to be used as a detailed guide for South Bay Clean Power during this most critical phase of implementation.

### Technical Appendices

We have included a number of appendices containing further detailed recommendations, best practices and key resources. These include:

- A narrative description of all managerial and operational functions of the CCA;
- Detailed best-practices and further explanatory context for designing the RFP for services;
- A summary and references regarding ongoing regulatory matters and forums germane to CCA issues, particularly non-bypassable charges for utility stranded costs from load departing to CCA service;
- The "CCA Guidebook" prepared and maintained by Southern California Edison to assist in the practical process of implementing a CCA;
- Useful documentation from the Redwood Coast Energy Authority of Humboldt County;
- A detailed description of the secured revenue account mechanism used by all CCAs to date;
- An initial list of companies which provide various services for CCAs (to be expanded and utilized to advertise competitive solicitation opportunities).

## Summary

Determining the program design and implementation process for a Community Choice program is necessarily a complex affair. Despite how critical this process is in determining the capabilities of a CCA, and to ensuring that those capabilities align with and support the CCA's strategic goals, no report to date has specifically addressed this process or recommended best-practices.

Consequently, innovations that both streamline the implementation process for local governments and enhance the CCA's capabilities — particularly those based on the recent achievements of the Redwood Coast Energy Authority and in integrating Distributed Energy Resources — have not been widely discussed or been broadly utilized by the CCA industry until now.

This Business Plan details those best-practices and also incorporates lessons-learned from other public power initiatives in California. In so doing, this report:

1) Provides a blueprint for a powerful, democratic and stable governance model for South Bay Clean Power and other CCAs in Los Angeles County, under which multiple CCAs exercise local control (over their energy choices, program elements, rates and financial reserves), while also forming a Regional JPA of CCAs to provide an economy of scale for shared services and power purchases as well as close collaboration in energy planning, regulatory engagement and legislative lobbying.
2) Details the practical functions that the program will implement (including distributed energy capabilities), the organization of the Regional JPA and member CCAs and accompanying staffing requirements, and a roadmap delineating the transition of responsibilities between contractors and staff as the agency develops over time;

3) Provides a step-by-step implementation process, financing strategy and timeline to issue a single RFP for all required services, evaluate bid respondents and negotiate service contracts (likely with multiple companies) — while explaining the considerations and inherent advantages of this approach.

In implementing these recommendations, we anticipate that South Bay Clean Power's CCA will be the most powerfully effective and reliable in its capabilities and most significant in its impact to date. Implementation will require relatively little staff time or government funding, and will outsource risk and expenses to expert contractors while lowering the overall expense of implementation by 50%. It will significantly accelerate the program timeline, and allow South Bay Clean Power — from Day 1 — to deploy Distributed Energy Resource and energy risk management capabilities that exceed all other CCA programs and rival the capabilities of established utilities.

## Case Study: The Redwood Coast Energy Authority CCA Model

This section details the recent experience of the Redwood Coast Energy Authority in Humboldt County. Each subsection explains a key best-practice or innovation that we strongly recommend for South Bay Clean Power. Consequently, these sections provide a foundational context for the remainder of this report.

The Redwood Coast Energy Authority is a Joint Powers Authority that manages energy efficiency programs and is responsible for overseeing several energy initiatives. Among other activities, they have created a regional energy plan, routinely engage in regulatory proceedings at the California Public Utilities Commission (CPUC), are installing electric vehicle charging stations, and assisting with innovative distributed generation and microgrid pilots.

When their staff were asked to oversee the implementation of Community Choice, they spent several months evaluating the processes typically used by other local governments — and then created a dramatically better approach: they simplified the competitive solicitation process by issuing a single Request for Proposals (RFP). It requested all services and financing necessary to implement and operate the CCA program, and stipulated that contractors had to wait to be paid until after the program launched successfully.

Four bid responses were submitted, offering to implement the CCA at approximately half the cost and on a faster implementation timeline than local governments have experienced to date. More importantly, the bid respondents offered to provide a greater range of expert, utility-grade services than any CCA has received (or requested) to date.

Humboldt's CCA implementation is underway and the program is on schedule to begin enrolling customers in March of 2017. We are witnessing the validity of this approach and have confirmed that their progress is meeting or exceeding expectations.

The key innovations achieved by the Redwood Coast Energy Authority, and adopted throughout this report for South Bay Clean Power as best-practices, are summarized below.

### Issuance of a Single RFP for All Required Services

When they were tasked with implementing a CCA, the Redwood Coast Energy Authority's staff recognized that even though they possessed significant expertise in distributed and renewable energy, they knew relatively little about how CCAs operated and how power markets were structured. Staff also interviewed a wide range of CCA and public power experts, and realized that local governments to date have relied on a consultant to design their CCA (and subsequently oversee multiple RFPs for different services), rather than the companies that are responsible for running comparably-sized public power entities (e.g. municipal utilities and power cooperatives). Subsequently, staff reasoned that it was these contractors who would possess the greatest depth of technical expertise and consequently should be relied upon to propose an optimal design for the CCA.

By issuing an RFP for all necessary services, Humboldt intentionally changed the CCA implementation contracting process in order to solicit these more experienced companies directly, and to give them an open and flexible hand in proposing how the CCA should be structured.

The advantages are multiple and obvious: Humboldt's RFP requires the minimum commitment of staff time and resources, induces competition for services, produces transparent results, accelerates

the implementation process, and ultimately creates a more advanced and cost-effective CCA program overall. To achieve these results, bidders relied upon proven models that are widely used in the broader public power sector to 1) enhance the operational capabilities of the CCA, 2) properly structure the relationship between the local government and its contractors, and 3) appropriately divide responsibilities between staff and contractors.

## Innovation in At-Risk, Performance-Based Contracting

The Redwood Coast Energy Authority successfully negotiated at-risk contracting for all aspects of CCA implementation. This means that all contractors hired to design and implement the program work at their own risk and will only be paid after they launch the program successfully. To do so, the companies involved are — at no upfront cost to the local governments— producing financial projections and an Implementation Plan, meeting various regulatory requirements and filings, soliciting power bids from multiple counterparties (including from local renewables), conducting marketing and communications, implementing data management systems, preparing for call center operations, and providing all necessary credit support and financing.

Up until the Redwood Coast Energy Authority's effort, only data management and call center operations had been provided to CCAs under at-risk contracts. What Humboldt County did was to impose this as a requirement on all other aspects of implementation. This strategy essentially transfers financial risk from the local government to its contractors during this critical period. This strategy is both appropriate and optimal, as the contractors 1) have a more expert understanding of the risks and tasks involved in launching a CCA and 2) can use their expertise to streamline those tasks while mitigating any sources of risk.

The CCA market is now sufficiently matured and developed, and the process and costs of implementation so well understood, that the Redwood Coast Energy Authority received multiple highly competitive proposals under these terms.

## Transparency, Contractual Flexibility, Cost Minimization and Timeline Acceleration

An at-risk, performance-based contracting strategy, if properly negotiated, provides transparency in fee structures while incentivizing contractors to minimize costs and accelerate the CCA launch timeline.

This has been the Redwood Coast Energy Authority's experience to date. From start to finish (i.e. producing a feasibility study through enrolling customers and commencing service) Humboldt's implementation is scheduled to take only 12 to 14 months. Contractors are doing so under a fee structure and budget by task that is detailed and transparent, under a contract structure that Humboldt negotiated to suit its preferences. (Even though a single RFP was issued, Humboldt executed three separate contracts for services from different groups of contractors.)

Lastly, total implementation costs (again, to be repaid only after program launch) for all services amounts to $482,500. This is significantly lower than the County of Los Angeles, which spent $150,000 for a feasibility study and is projecting an additional $790,000 in consulting fees necessary for program startup activities, for a total of $940,000 — almost twice what Humboldt will pay. Similarly, the Monterey Bay Clean Power startup costs are projected as $925,000 in consultant fees and an additional $700,000 in staff costs.

## Contracting for Superior Energy Risk Management Services

Electricity comprises 95%+ of overall costs for a CCA, and CCAs are responsible for building up a multi-million-dollar reserve fund while also increasing renewables and maintaining competitive rates. Achieving these various goals can be challenging, especially as market conditions and risk exposure can fluctuate over time. Consequently, the skillfulness of the contractor chosen to provide power services is essential to a CCA's competitive financial performance and ability to satisfy local policy goals over the long-term.

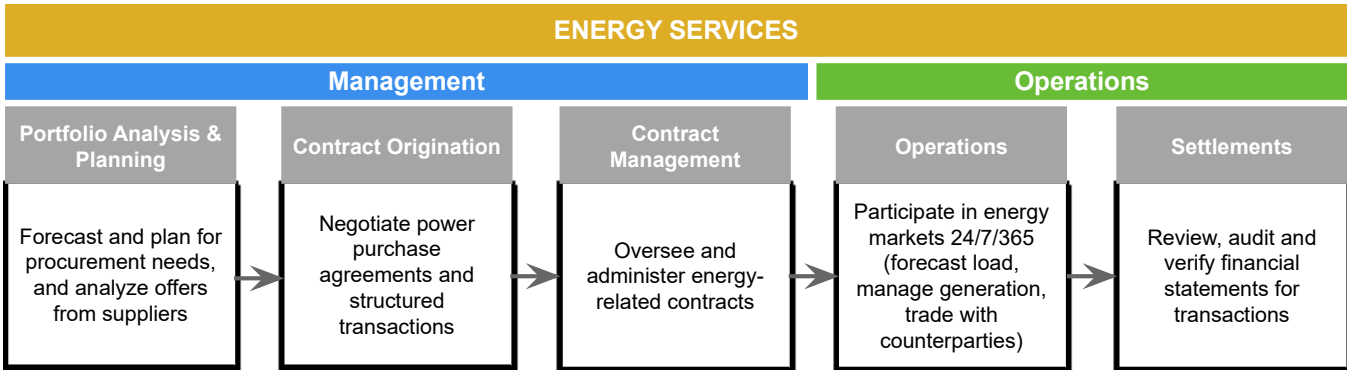
Ideally, a new CCA program would deploy capabilities that rival the incumbent utility. To date, however, CCAs have deployed a limited set of energy risk management capabilities at launch. Additionally, these capabilities are divided between multiple consultants, contractors and staff. Subsequently, the programs spend several years hiring staff and enhancing their energy-related capabilities.

In contrast, the Redwood Coast Energy Authority hired a non-profit owned by a group of municipal utilities to provide energy services for the CCA. This non-profit is extremely competent, with a demonstrated track record in providing a full suite of energy services — from day-to-day power market operations through long-term planning — to serve its municipal utility members. The contrast between these approaches is profound and compelling: Humboldt's holistic, integrated and broad suite of power services will from day one achieve a level of sophistication and effectiveness in planning and operations that Marin Clean Energy's CCA has worked for seven years to achieve. The public power non-profit that provides these services operates in close coordination with the Redwood Coast Energy Authority in a transparent fashion, essentially functioning as an extension of local government staff.

Note that adopting this approach will not preclude South Bay Clean Power from developing their own internal staff competence over time for power planning and operations; the Redwood Coast Energy Authority is already beginning to hire staff to do just that.

### *Overview of Expanded Energy Risk Management Services*

These services are provided to the Redwood Coast Energy Authority by a single contractor, working in close coordination with government staff. This allows these functions to be provided in an integrated and streamlined fashion spanning both management and operations, as depicted:

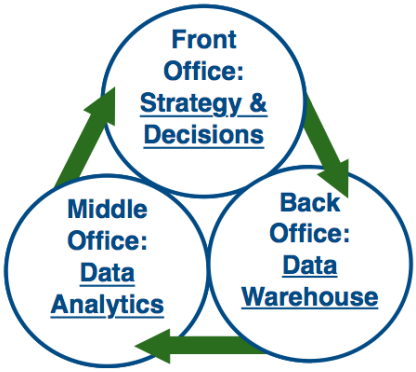



The graphic shows the departmental functions between management activities on the left and operational activities on the right. Going from left to right, this encompasses a range of software and data analytics used to assess procurement requirements and various levels of financial risk under

different planning scenarios. Those exercises directly inform the CCA's contract origination activities, in deciding when to fill open positions, and which types of power contracts or financial hedge contracts need to be negotiated to meet policy objectives (for example, meeting various renewable and greenhouse gas targets, while adhering to the risk management policies established by the Board). Executed contracts then have to be tracked and managed.

Subsequently during operations, the CCA forecasts its load on an hourly basis, and then schedules its power contracts with the wholesale market operator (CAISO in California). Active risk management in operations means that, in both the day-ahead and real-time markets, electricity usage and market prices are being monitored, and unexpected generator outages, transmission constraints, or significant deviations in forecasted versus actual load patterns or market prices triggers pre-established processes to manage risks and minimize costs. That might entail calling on Distributed Energy Resources (such as demand response, battery storage and electric vehicles) or a peaker plant under a tolling agreement, or engaging in trading to buy or sell power with various counterparties, or exercising a financial hedge. Afterwards, all the financial settlements must essentially be audited so that the CCA ensures that it has been charged or credited with the right amounts.

Effective energy services therefore rely on tight coordination between all the various tasks and processes involved. In the energy industry, this alignment is an important conceptual model that is referred to as the "back-, middle- and front-office":




As the graphic above depicts, the **back-office** collects, error-checks and stores all necessary data. That data is then analyzed in a variety of ways for forecasting risk and power planning by the **middle-office** functions, in order to support strategic decisions (such as the approval of certain power contracts over others, or the elements of the CCA's long-term Integrated Resources Plan) by the **front-office**. These actions result in the collection of further data, and the process repeats.

The main takeaway from this conceptual framework is that, for all these complex, interlocking functions to be carried out with the maximum degree of efficacy, all activities should be tightly integrated and overseen by strict process controls. Utilities and energy service companies, for example, typically have quality assurance departments and additionally rely on independent third-party auditors to periodically verify that these activities are being conducted in accordance with agreed-upon methodologies and with an appropriate level of professional diligence.

No operating CCA to date has launched with contracts for these energy service functions in an integrated manner, or to the scope or extent that is being deployed for the Redwood Coast Energy Authority. Instead, they have launched with a limited set of services divided between multiple

consultants, contractors and staff, and subsequently expanded their energy-related functions gradually (over a period of years).

In contrast, the Redwood Coast Energy Authority chose to deploy a full set of energy service functions from the inception of their program, using a single contractor to provide all required services in a pre-integrated fashion. In concert with that approach, the CCA is also hiring staff to assume various responsibilities over time.

This approach provides numerous advantages in minimizing implementation costs and enhancing the quality of the services provided for the CCA – and in turn, for customers. These advantages include:

1) Superior risk analytics for use in long-term planning, ongoing energy procurement and daily management;
2) Continuous monitoring and active management of our energy-related financial risks in wholesale power market operations.
3) Full transparency into all functions, and strong process controls to ensure that activities are being conducted in accordance with agreed-upon methodologies and diligence;
4) Flexibility in selecting functions for which government staff should be hired or trained to assume over time,
5) Facilitating the integration of renewable and distributed energy planning and implementation in a systematic and holistic manner.

## Streamlined Financing

As detailed above, contractors like the one selected by the Redwood Coast Energy Authority have a proven and quantifiable track-record managing financial risk in power planning and operations, and transact hundreds of millions to billions of dollars of energy purchases each year.

Consequently, these contractors enjoy long-standing relationships with established financial counter-parties that understand and operate within the energy sector (e.g. cooperative banks, investment banks, power suppliers that offer financial products, public power entities with excess reserves, et cetera). These relationships provide a substantial expansion for CCAs in terms of access to capital, which can be negotiated in a streamlined and competitive fashion.

Consequently, the Redwood Coast Energy Authority realized that it could rely on its contractors to provide or negotiate all necessary financing and collateral, and did not have to pay for consultants and staff to estimate financial requirements and negotiate financing under a separate (and lengthy) process to do so.

# Distributed Energy Resources

One of the primary goals of South Bay Clean Power's initiative is to maximize the CCA's use of Distributed Energy Resources (DER). As we describe in this chapter, doing so is critical for lowering carbon emissions, is necessary to achieve 100% renewable penetration, and will ultimately have a larger impact than just decarbonizing wholesale electricity generation.

Community Choice is uniquely positioned to help California advance Distributed Energy Resources in various ways, by combining the technical capabilities of a power agency with the inherent authorities of local governments over land use and transportation — which is not an option for the utilities or State regulatory agencies.

To inform our recommendations, we have reviewed the various capabilities and initiatives of existing CCAs, companies that specialize in managing DER for integration into power markets, and Southern California Edison. These case studies provide a number of powerful insights and best practices that have been incorporated into our design for South Bay Clean Power.

## Overview of Distributed Energy Resources

Distributed Energy Resources comprise energy efficiency, distributed renewable generation resources (e.g. rooftop solar photovoltaic), energy storage, electric vehicles, and demand response technologies. These technologies are:

1) Installed on customer's properties and thus interconnected to the grid from "behind the meter";
2) Deployed across a wide variety of different customer types (e.g. single-family houses, apartment complexes, university campuses, cold storage warehouses, data centers, et cetera);
3) Marketed, financed, designed, installed and then monitored and managed by a diverse spectrum of companies that specialize in the various technologies and customer types.

The regulatory rules, market mechanisms, communication and data protocols, financial incentives and funding sources that shape these DER business models and opportunities is defined by dozens of interlocking laws, proceedings, programs and strategies at the municipal, utility, state and Federal level.

The DER segment of the energy industry is simultaneously accelerating in scale and evolving rapidly, driven by cost declines, innovative business models and strong policy support in California. The nature of the market is expanding and becoming more sophisticated, as:

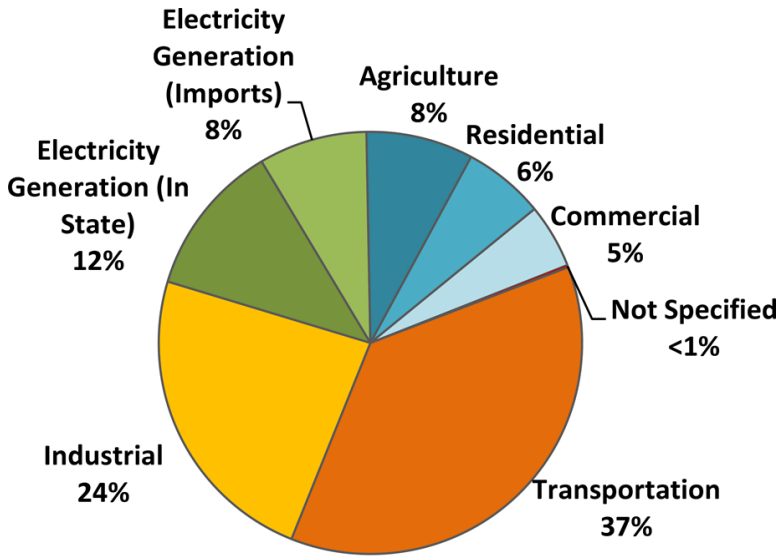
1) Wholesale electricity markets have now begun to allow DER to be aggregated and bid in competition against large-scale power plants;
2) Southern California Edison is increasingly contracting with DER project developers to meet grid reliability procurement goals;
3) The California Public Utilities Commission is now in the early stages of overseeing a systemic transition in how the distribution grid is planned and operated so that DER may both displace utility investments in grid infrastructure and enhance the overall efficiency of the system;
4) Utilities are transitioning all customers to time-varying rates by 2019, to allow retail electricity prices to more closely match wholesale generation price dynamics. For example, electricity usage could be incentivized during daytime hours (when significant volumes of solar are produced) and discouraged in the early morning and evening hours with appropriate price

signals. The ability of customers to respond to these price signals, and to use electricity when it is cheapest, depends to a large extent on the widespread use of enabling technologies such as smart thermostats and appliances, and electric vehicle managed charging.

In part, these advances are designed to allow Distributed Energy Resources to be coordinated and used to help match the generation patterns and balance the intermittency of variable wind and solar generation, which are increasingly impacting the wholesale electricity markets as significant volumes of new resources are brought online to meet California's Renewable Portfolio Standard goal of 50% renewable generation by 2030.

## Distributed Energy Resources and Greenhouse Gas Goals

At a high-level, greenhouse gas emissions in California are primarily caused by fossil fuel combustion in the transportation sector and the burning of natural gas by appliances and industry; as shown in the graph below, the electricity sector only accounts for 20% of California's emissions[2]:

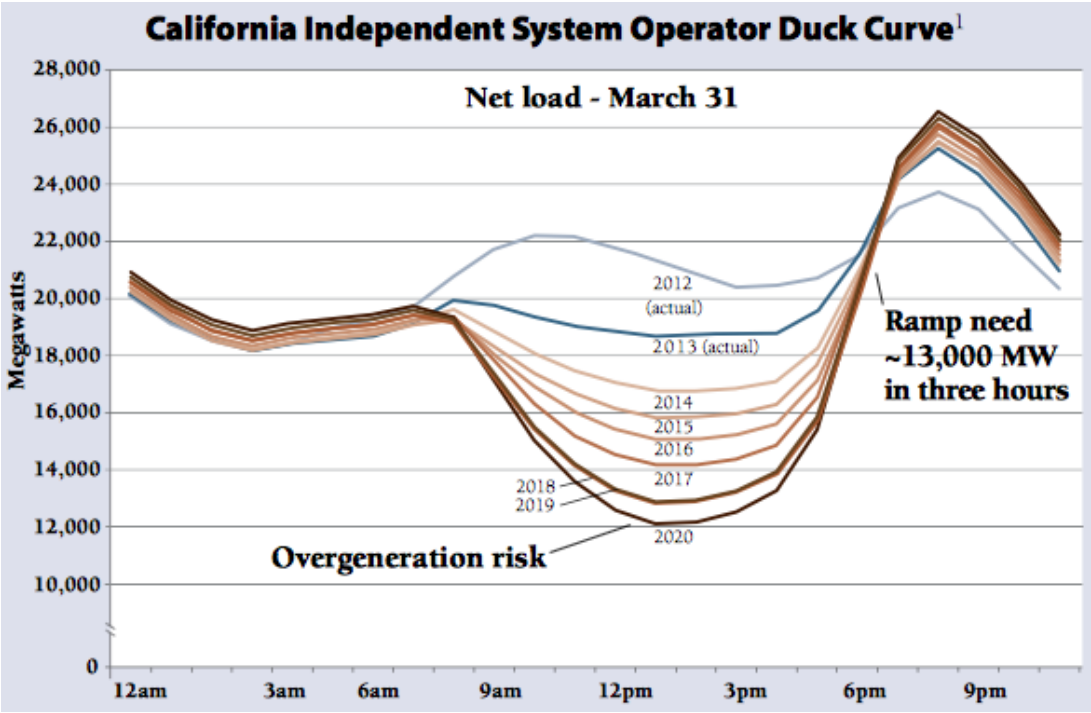



**2014 Total CA Emissions: 441.5 MMTCO2e**

Decarbonizing California's economy depends on aggressively electrifying vehicles and appliances that currently burn natural gas for heating purposes (e.g. space and water heating), while shifting electricity generation to 100% renewables and using DER to balance the grid.

[2] California Air Resources Board, California Greenhouse Gas Emission Inventory - 2016 Edition. Available online at: [https://www.arb.ca.gov/cc/inventory/data/data.htm]

Since wind and solar generation — which comprise the majority of new renewable investments — is inherently intermittent, and because solar generation ramps up quickly in the morning and drops off by the evening, balancing these resources so that power supplies remain stable typically requires natural gas turbines to ramp up and down quickly. The graph below, published by the California Independent System Operator and widely referred to as the "Duck Curve", shows how increasing volumes of solar production in the daytime is significantly changing the pattern of net load (electricity usage minus renewable generation) that power plants must match in order to maintain the stability of the wholesale grid:

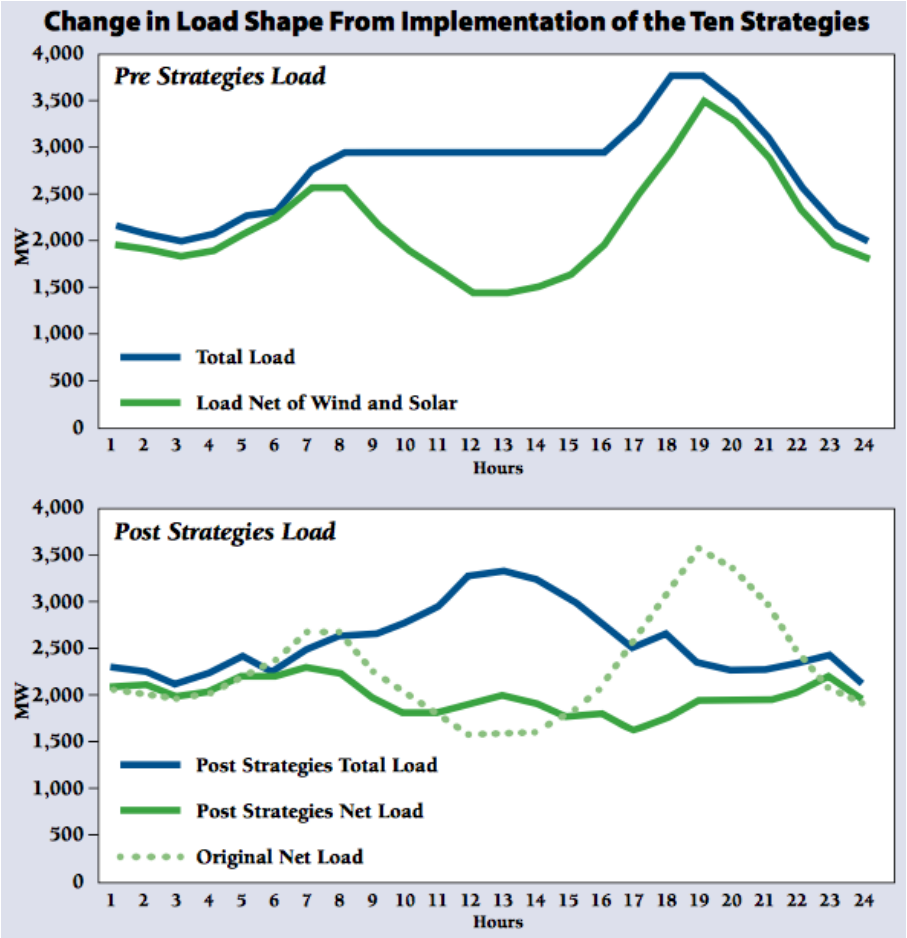



Consequently, managing high volumes of renewables while lowering carbon emissions requires significantly expanding Distributed Energy Resources, integrating these flexible resources into grid operations to replace the use of natural gas turbines for balancing purposes and shifting electricity usage to match solar production more closely.

For example, controlling the charging schedules of numerous electric vehicles in aggregate allows the creation of a "virtual power plant". This is a shapeable, interruptible load that can quickly be ramped up or down — comparable to a natural gas peaker plant but without any carbon emissions. Distributed Energy Resources such as demand response, smart inverters on distributed generation, and battery storage can also be managed as virtual power plants.

Similarly, Distributed Energy Resources can shift portions of electricity consumption from the morning and evening hours to the middle of the day, to more closely match solar generation patterns. These technologies include electric vehicle managed charging, battery storage, smart thermostats and thermal storage (controllable water heaters and heat pumps, and technologies that replace air conditioning and chillers with ice or chilled water storage).

The graph below, from an analysis conducted by the Regulatory Assistance Project (RAP) in response to the California Duck Curve, shows the impact that Distributed Energy Resources can achieve in mitigating these dynamics:[3]




Absent the coordination and integration of Distributed Energy Resources, the wholesale market would rely on natural gas turbines to balance the intermittent generation of renewables. In this manner, the effective coordination of Distributed Energy Resources is critical to achieving California's greenhouse gas emission reduction goals.

## Local Governments Land Use and Transportation Authorities

In contrast to the utilities and California Public Utilities Commission, the local governments that comprise Community Choice programs exercise significant authority over zoning, land use, building codes, permitting, emergency planning, and transportation planning and investments. These

[3] Lazar, J. (2016). Teaching the "Duck" to Fly, Second Edition. Montpelier, VT: The Regulatory Assistance Project. Available at: http://www.raponline.org/document/download/id/7956

authorities are critical for accelerating Distributed Energy Resources and lowering greenhouse-gas emissions.

Uniquely, CCAs are the only load-serving entity that can also leverage local government authorities to accomplish this goal. There is a compelling opportunity to use the technical expertise, customer outreach activities, power procurement and operational responsibilities of a CCA program, and to have the CCA coordinate with Southern California Edison in a variety of ways, to inform and coordinate local government initiatives that support Distributed Energy Resources. In this manner, Community Choice will fundamentally strengthen the ability of California to meet its greenhouse-gas reduction goals in a holistic and coordinated fashion, without relying on natural gas turbines to maintain the stability of the power grid.

Local government initiatives in zoning, land use, building codes, permitting, emergency planning, and transportation can support DER to decrease carbon emissions across multiple sectors of the economy by accelerating:

1) Rooftop solar, electric vehicle chargers, battery storage, demand response and energy efficiency in new construction and building retrofits;
2) The pace by which appliances that burn natural gas are replaced and powered by clean electricity ("fuel-switching");
3) The development of microgrids to power industry, critical facilities and communications infrastructure;
4) The pace of electric vehicle adoption for commuters and public transit ("transportation electrification");
5) Financing mechanisms that support these initiatives, such as Property Assessed Clean Energy (PACE, which utilizes bond financing for DER that is subsequently recouped through property tax assessments).

Community Choice programs to date have begun to explore this holistic approach. As select examples:

- Lancaster Choice Energy is working with local transportation authorities to purchase approximately 90 electric buses, and to integrate these into the CCA's power procurement and operations (through coordinated, managed charging of the vehicle batteries).
- Lancaster also passed an ordinance requiring new residential developments to be solar powered and zero emission, and San Francisco passed a similar ordinance for solar photovoltaics or solar hot water along with energy efficiency requirements for new construction.
- Sonoma Clean Power identified fuel-switching and vehicle electrification as key strategic goals for the CCA, and routinely works with local agencies such as the Sonoma County Transit Authority, Regional Climate Protection Agency and Sonoma County Water Authority on a number of zoning initiatives and code elements to support DER — such as preferred zoning for small-scale solar and Electric Vehicle charging standards for new homes.

  Regarding transportation electrification, the CCA is completing an electric vehicle pilot initiative that deployed 200 vehicles using customized maps to target the most cost-effective "hot spots", combining 1) existing electric vehicle customers, 2) new customer demand for electric vehicles, 3) electrical distribution grid maps showing circuit loads (provided by Pacific Gas and Electric

to help target Distributed Energy Resources). Approximately 30% of this investment went to low-income communities.

The CCA will soon control a network of almost 1,000 electric vehicle charging stations, coordinated in a "virtual power plant" — and has begun to integrate these capabilities into the CCA's long-term planning to help balance high volumes of intermittent renewables.

The practical ability of South Bay Clean Power to ensure that beyond its own cities' efforts, the Los Angeles region also takes a holistic approach to decreasing greenhouse gas emissions by accelerating Distributed Energy Resources depends largely on the governance structure employed for the CCA. Our recommendations in this regard are detailed in the section "South Bay Clean Power Governance Structure" later in this report.

The remainder of this chapter focuses instead on the specialized capabilities that the CCA should employ as a load-serving entity (in power planning, markets and operations) to support Distributed Energy Resources.

## Existing Community Choice Programs & Distributed Energy Resources

For Community Choice programs with goals to accelerate Distributed Energy Resources, the scale of the diversity and pace of change in this segment of the energy industry defies a simple solution or singular pathway. As a result, a comprehensive strategy and practical plan for integrating DER into CCA planning and operations has not been defined by any program to date.

In contrast, the process for a CCA to contract with and manage larger generation assets is far simpler and now routine, as has been described in numerous reports. For example, to contract with utility-scale renewable resources (interconnected to the transmission grid), the CCA would negotiate a standard Power Purchase Agreement (PPA). Or to contract with utility-side renewable distributed generation (smaller power plants, predominantly solar photovoltaic, connected to the distribution grid), the CCA would offer a Feed-in-Tariff (also known as a "standard offer" contract). Designing the CCA's planning, operational and financial activities to rely on these types of large-scale resources has been standard practice to date.

Consequently, from a functional day-to-day perspective, CCAs to date have been designed and operated like relatively traditional, wholesale-centric load-serving entities (i.e. the programs purchase electricity from large power plants and manage the sale of electricity to customers). Advances in CCA program design, as pioneered by Silicon Valley Clean Energy and the Redwood Coast Energy Authority, have focused on deepening these capabilities to allow the CCA to contract for wholesale power from a diverse variety of resources at launch.

Because this has been the initial organizational model design for CCAs to date, the successful initiatives undertaken by CCAs in support of DER have remained largely independent from the primary functions, financial obligations and responsibilities of the CCA as a load-serving entity. For example, a CCA would typically offer an enhanced Net Energy Metering (NEM) tariff that compensates rooftop solar customers for excess generation at a higher rate than the utilities offer, and might petition the CPUC for the right to administer a portion of energy efficiency funds. The Net Energy Metering tariff is a relatively simple financial incentive, while the efficiency programs essentially often could be (or are) implemented by the local governments even without a CCA program (the South Bay REN program is a good example of this, as a government program that

already petitions the CPUC for funding to administer energy efficiency programs in Los Angeles County).

While these initiatives are effective and recommended for South Bay Clean Power, they do not take full advantage of the responsibilities and activities that the CCA has taken over from the utility as a load-serving entity. The opportunity to do so is the key to accelerating DER investments throughout the CCA's territory.

As a load-serving entity, a CCA the size of South Bay Clean Power will determine how hundreds of millions of dollars in energy purchases are spent each year. In order to purchase and manage power sourced from Distributed Energy Resources instead of from large wholesale power plants (including fossil fuel power plants) to the maximum extent possible, the CCA has to first have the practical ability to integrate DER into the core of load-serving entity activities — in power planning, load forecasting, power procurement, contract management, energy market operations and related functions. This necessitates contracting for a specialized set of services.

Outside of those core operations, every other action that a CCA may take in support of DER has a relatively small impact in comparison to effectively utilizing the CCA's authority as a load-serving entity. Doing so allows the CCA to contract with and significantly increase investment in DER throughout its territory — at scale and on a regular basis — and to proactively utilize these resources in energy risk management and market operations.

In fact, CCA stakeholders have discussed this as a goal since the beginning of the CCA industry in California, but no CCA has yet been designed in a manner that would align the program's practical capabilities with this strategic objective. As we detail below, various CCAs have developed certain DER initiatives and capabilities over time, which we have studied to inform our recommendations for South Bay Clean Power at launch.

### *Marin Clean Energy & Distributed Energy Resources*

Recent initiatives have begun to expand the functional capabilities of existing CCAs in anticipation of more actively contracting with and utilizing DER. The leading CCA in this regard is Marin Energy Authority, the first CCA program that launched seven years ago. They have recently:

1) Released an RFP for data management services related to supporting DER programs;
2) Implemented a software platform that automatically estimates the impact of behind-the-meter installations (the OpenEE Meter platform, which is open-source);
3) Launched several demand response and electric vehicle managed charging pilots;
4) Commenced studying regulatory rules that impact Distributed Energy Resources through a grant from the California Energy Commission.

Taken as a whole, these preparatory and exploratory actions are necessary for starting to integrate DER more deeply into the CCA's core operational activities. We provide summaries and analysis of key activities in the sections below. Our analysis of these capabilities will allow South Bay Clean Power to incorporate these advances into the program's design from launch, rather than over a period of years.

### Data Management for DER

Below is the Scope of Work excerpted from Marin Clean Energy's recent RFP for data management services to support DER:

***Data Management Planning Services***

1. *Create an inventory of MCE databases and systems.*
2. *Provide alternatives and recommendations to optimize the architecture of MCE systems and data to enable business optimization.*
3. *Provide cost/benefit analysis and implementation strategy recommendation for enhancements to, or replacement of organization wide CRM.*
4. *Evaluate systems and staffing requirements that would allow better internal data analysis and utilization.*
5. *Evaluate and propose risk management solutions related to data backup options from a cost / benefit perspective.*
6. *Engage with MCE's suppliers and vendors to evaluate the strengths and weaknesses of their systems and its ability to meet MCE's needs.*
7. *Provide an implementation plan including tasks and timelines to accomplish recommended solutions over the short and medium term.*

***Solutions Implementation***

1. *Integrate and use Advanced Meter Infrastructure (AMI) data for energy efficiency programs, pilot programs and optimized load forecasting.*
2. *Integrate residential and commercial building data (eg construction date, size and building type).*
3. *Integrate customer gas usage data.*
4. *Provide CRM/workflow solutions that support energy efficiency and demand side management programs.*
5. *Design and implement systems to manage relationships with non-customer stakeholders such as staff, board members, vendors and community groups within the CRM.*

*This scope is intended to provide MCE with information to develop its systems and relationships with partner vendors to meet the evolving needs of the organization.*

It is important to note that Marin is requesting data management services that are necessary to subsequently support a variety of analytics and workflow processes for different DER initiatives. The CCA further explained its goals in issuing the solicitation by stating:

> "*The CRM [Customer Relationship Management database] provided by Calpine [formerly Noble] is primarily used by the Public Affairs team and call center representatives, who are contracted by Calpine. The existing CRM does not offer functionality needed by the Customer Programs team…MCE's Customer Programs department seeks more streamlined access to data, including a user-friendly interface that ideally integrates customer usage information with parcel level data and other possible data flows (i.e. historical program participation data and third party marketing data.) The Customer Programs team also seeks a high quality CRM which tracks customer interactions, program participation, energy impacts associated with projects, and assists in nudging customer service reps about future opportunities based on criteria established by the MCE team. It would be ideal if this interface had varying levels of access for internal customer support staff as well as external contractors and consultants.*"

In other words, instead of a one-off solution designed with a specific type of DER program in mind, the CCA is implementing a flexible back-office platform (to provide more functionality than their existing data management contractor) as a foundation on which to launch multiple future initiatives in future.

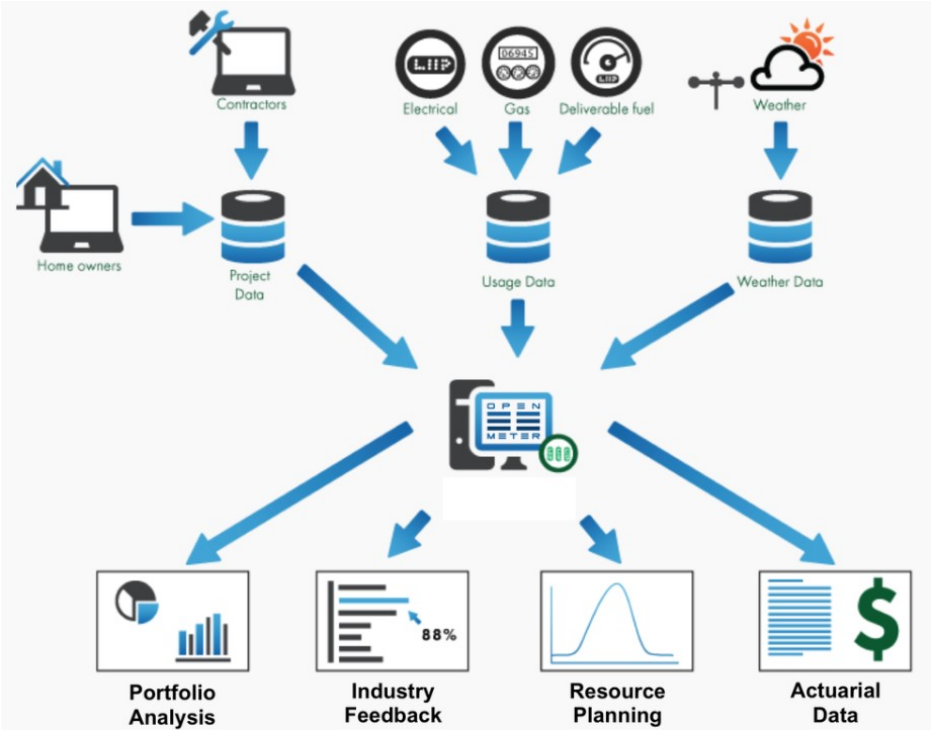
### OpenEE Meter Platform

The OpenEE Meter is an open-source software platform being piloted by Marin Clean Energy (and Pacific Gas & Electric) that relies on smart meter, weather and other data to automatically calculate the impact of DER on electricity usage patterns, for every customer that installs DER. While that may sound esoteric, the lack of reliable hour-by-hour load impact data has in fact been one of the biggest issues that prohibits certain DER (such as energy efficiency retrofits) from being treated as a reliable resource for a CCA's power planning, and for Southern California Edison to use in distribution grid planning, and for CAISO (the California wholesale electricity grid operator) to use in transmission planning.

Until now, the impacts of DER have only been able to be estimated through manual processes that involve statistical sampling of a population of DER retrofit properties, the installation of energy metering equipment and site inspections, and the calculation of energy impacts. These exercises are inherently expensive, subject to inaccuracies in design and execution, and require a long timeline to complete (in other words, the results are outdated by the time results are reported). And often, the results are expressed in total savings rather than in load-profile impacts — which means that the results do not provide the precision necessary for use in power planning.

Consequently, the potential ability of the OpenEE Meter platform to provide reliable, temporally-granular data on a real-time basis and at low-cost may actually revolutionize the DER industry.

A schematic of the software's functionality is shown below:



To calculate how DER impacts a customer's load profile (pattern of electricity usage), the software only needs to be told the date of the DER installation. It then automatically pulls in smart meter data and weather data, and calculates the impact of DER by separating out weather-related impacts (e.g. relatively cold days, etc.). Unusual impacts to energy usage (for example, from students returning home from college for the summer, etc.) can also be flagged and separated out in an automated fashion.

Further data inputs, such as the contractor that installed the project, or specific technologies installed, are optional and can be used to generate additional analytical insights. For example, a company that financed a variety of DER installations (across a range of technology configurations, installed by different contractors across different customer types) would be able to develop ranges of load profile impacts based on each of those parameters. This would allow the company to estimate the cost of installing DER to provide specific capacity products, in other words, decreases in electrical usage at certain times and at specific thresholds of volume. It would also quantify the risk that a specific portfolio of projects in development would exceed or fall short of those specifications.

#### *Forward Capacity Market for DER & "Pay for Performance"*

As described above, the OpenEE Meter platform promises to provide the temporal granularity and performance risk analytics necessary to rely on DER more fully for power planning purposes, and to allow DER developers to be paid based on performance in a transparent, verifiable and automated fashion. It is a data solution that provides an equal playing field for DER — particularly low-cost energy efficiency — to compete against large-scale power plants.

This would allow, as an example, a CCA to issue a solicitation for 100 MW of DER capacity to be provided for a five-year period during specific hours of the day (corresponding to the CCA's open positions), and for companies that finance and develop DER to analyze their portfolio of potential projects under development and commit to bidding fixed prices to satisfy the CCA's procurement requirement (with financial penalties for non-performance).

Real-world results would then be automatically monitored by both the CCA and DER companies involved, and be incorporated into the CCA's load forecasting and power planning and operational risk-management activities. That is the essence of a forward-capacity market for DER — a routine and transparent mechanism that would allow DER to become the default resource for new power procurement instead of large wholesale power plants (including fossil fuel plants).

While the OpenEE Meter software is still in the pilot stage, it is sufficiently promising (and relatively inexpensive, as it is open-source) for inclusion in South Bay Clean Power's initial design.

### Electric Vehicle Managed Charging Pilot

Marin Clean Energy's recent electric vehicle initiative partners the CCA with a company that specializes in managing the charging schedules for electric vehicles. This allows the fleet of managed vehicles to be aggregated, and treated as a "virtual power plant". The benefits are subsequently monetized by:

1) Bidding the DER into capacity auctions managed by PG&E;
2) Bidding the DER into wholesale electricity markets managed by the grid operator (CAISO);

3) Modifying the electric vehicle charging schedules (when possible) so that the CCA purchases power to charge the vehicles at times when market prices are relatively low.

Proceeds from the power market and capacity auction sales are shared with Marin Clean Energy, and in exchange, the CCA is "white-labeling" the program (advertising the program under the Marin Clean Energy brand) and assisting the company with targeting and marketing to prospective customers with electric vehicles. In this manner, the CCA is minimizing its own upfront expense to deploy innovative and beneficial services, relying on a third-party company to assume much of the risk and expense of program deployment, and sharing the subsequent financial benefits under a performance-based contract.

### *Demand Response Auction Mechanism Scheduling Coordinators*

The mechanism that allows Marin Clean Energy to monetize the energy and capacity benefits of their electric vehicle managed charging pilot is called the "Demand Response Auction Mechanism" or DRAM pilot.

In recent years, this program has been developed jointly by the wholesale grid operator CAISO and the CPUC. Under the pilot, the Investor Owned Utilities conduct periodic auctions to contract with DER Aggregators for demand response capacity. Successful auction participants receive capacity payments, also subsequently bid the DER directly into the wholesale electricity markets, and retain any revenues earned.

The necessary ability to aggregate and bid then sell Distributed Energy Resources into California's wholesale electricity markets requires the services of a Scheduling Coordinator, which has been certified by CAISO, and which understands the complexities of the market and evolving rules for DER. The IOUs reimbursed the costs for these specialized services for successful auction participants, and as part of the program, developed specifications and requests for qualifications from companies that could act as Scheduling Coordinators for DER Aggregators.

## *Best Practices for South Bay Clean Power*

This plan incorporates the DER data management and OpenEE Meter specifications from Marin Clean Energy into South Bay Clean Power's design. However, regarding Marin's electric vehicle managed charging pilot, it is not the pilot program itself as much as the functional capabilities of the company that Marin has partnered with that is of interest — as a Scheduling Coordinator under the DRAM pilot. Incorporating these capabilities will allow South Bay Clean Power to fully integrate a range of DER into its power operations, and monetize the capacity and energy benefits of various Distributed Energy Resources.

In other words, this provides the ability for South Bay Clean Power to subsequently aggregate and manage "virtual power plants" composed not only of electric vehicles, but also demand response, energy storage and distributed generation technologies — and to implement a range of programs and procurement mechanisms to do so.

Having the CCA deploy this functionality also avoids a potential shortfall of relying on a variety of contractors to provide these services for each different DER program. Under current market rules, a customer must be registered by a DER aggregator scheduling coordinator and may only be served by that entity. (Though the customer may choose to switch in future, subject to contract terms.)

The main issue is that if a private contractor acts as a DER aggregator scheduling coordinator and registers the customer, then that customer would also have to be managed by that company for any additional DER technology. For example, if a customer was registered to a DER aggregator scheduling coordinator in an electric vehicle program, and then that same customer later installs a smart thermostat, or rooftop solar photovoltaic with battery storage, integrating these resources into wholesale market operations would have to be done through that company. The company may or may not be willing to do so, or may seek non-transparent terms and pricing to do so, or the customer may have to switch DER aggregator scheduling coordinators to fully utilize all the DER technologies deployed by the customer.

Being the DER aggregator scheduling coordinator also entitles that company to all rights associated with that customer in terms of market operations and data, and the CCA's rights to access that data is dependent upon its contract and interface with the company (rather than directly with the power market operator). The company may even choose to cross-sell additional DER technologies to the customer that was originally enrolled in a CCA's DER program without informing the CCA or sharing the future revenues gained.

By having the CCA itself provide the DER aggregator scheduling coordinator services across all DER programs, the CCA will be able to provide oversight over the customer relationship, ensure that contracts entered into by customers are fair, standardize its DER operations, manage multiple DER technologies deployed at each customer site, and do so under fully transparent conditions and full data access.

Doing so will also allow the CCA to more closely integrate the ways in which Distributed Energy Resources across the program's territory are bid into the markets and integrated with the CCA's overall portfolio energy risk management activities, and to continuously improve these strategies and processes over time as the markets and the CCA's portfolio evolve over time.

## Southern California Edison & Distributed Energy Resources

Southern California Edison manages energy efficiency programs and offers Net Energy Metering tariffs (as Marin Clean Energy also does), but additionally has already incorporated Distributed Energy Resources into their power planning, procurement and operational activities in a much more systemic manner than any CCA to date. To do so, SCE has internally:

- Re-organized its energy services department several years ago to holistically encompass all resources (i.e. large-scale and Distributed Energy Resources);
- Is implementing a significant upgrade to its customer outreach, data management and customer information systems to support various DER initiatives;
- Has published detailed whitepapers describing the system architecture, functional capabilities and business processes that the utility anticipates deploying to integrate DER into how the distribution grid is planned and operated. (Refer to appendix "Southern California Edison and Distributed Energy Resources" for details.)

In contracting for and actively using Distributed Energy Resources, Southern California Edison (among other initiatives):

- Manages fourteen demand response programs, encompassing 680,000 customers and 1,200 MW of capacity;

- Is enrolling up to 1.6 million additional customers in demand response programs to help alleviate the risks of rolling blackouts imposed by the closure of the Aliso Canyon natural gas storage facility;
- Contracted for 420 MW of new Distributed Energy Resources to help replace the capacity shortfall from the closure of the SONGS Nuclear power plant;
- Has recently concluded several innovative pilots to study how distribution system planning and operations should integrate Distributed Energy Resources.

What Southern California Edison has done, primarily, is to expand the functional capabilities of its core load-serving entity business model to:

1) Plan for and contract with a variety of companies that install and manage portfolios of Distributed Energy Resources ("DER Aggregators") in place of traditional large-scale power plant developers;
2) Interface with these companies and technologies to control the Distributed Energy Resources on an operational basis.

Because of these activities, Southern California Edison has become the leading utility in the country in terms of actively integrating Distributed Energy Resources into traditional load-serving entity activities.

### *Best Practices for South Bay Clean Power*

While Marin Clean Energy and other CCAs offer several specific innovative practices and capabilities, it is Southern California Edison's overall organizational model that provides the over-arching template for adoption by South Bay Clean Power as a load-serving entity. No existing CCA program offers comparable capabilities in procuring and integrating DER into planning, procurement, contract management, market operations, financial settlements, customer outreach, data management and billing activities.

## South Bay Clean Power & Distributed Energy Resources

Our recommended program design for South Bay Clean Power incorporates a broad range of proven Distributed Energy Resource capabilities and practices into:

1) The CCA's organizational model, integrating DER into every relevant functional capability for the program as a load-serving entity;
2) The program's governance model, to leverage the land use and transportation authorities inherent in local governments to support DER initiatives on a regional scale.

Our recommendations regarding the latter are detailed in the chapter "South Bay Clean Power Governance Structure" (later in this report).

To inform our recommendations on the specialized capabilities that South Bay Clean Power should deploy as a load-serving entity (in power planning, markets and operations) to support Distributed Energy Resources, we have reviewed the DER activities of current CCAs (most notably Marin Clean Energy), companies that specialize in managing DER for integration into power markets (i.e. DER aggregator Scheduling Coordinator capabilities), and Southern California Edison.

In designing the functionality that South Bay Clean Power should deploy at launch, our task is not to specify a comprehensive suite of DER programs targeting specific customer types or DER technologies. Doing so, given the inherent complexity and continuous evolution of the DER industry, would be premature. Instead, we have focused on specifying the functional capabilities that South Bay Clean Power should contract for, which in turn allow the CCA to expeditiously:

1) Design and deploy a variety of programs and procurement mechanisms to accelerate investment into DER in the CCA's territory on a regular, recurring basis;
2) Integrate DER into critical analytical activities such as load forecasting and power planning, daily operations in California's electricity markets including DER aggregator schedule coordination, and the variety of functions required to pro-actively manage DER customer relationships (such as data management and billing, as well as customer outreach and call center activities);
3) Understand how to monetize the benefits created by DER to the greatest extent possible under current regulations and market rules; and
4) Provide the requisite technical expertise to 1) fully leverage local government authorities in land use and transportation and 2) guide the CCA's regulatory engagement strategies to expand opportunities to utilize and monetize DER.

Doing so expands the traditional wholesale-centric load-serving entity functions that typically comprise CCA programs to holistically integrate DER.

### *Functional Capabilities to Support Distributed Energy Resources*

To ensure that South Bay Clean Power will contract for the capabilities necessary to utilize Distributed Energy Resources at launch as a load-serving entity, we have detailed the requisite functions in the CCA's Organizational Model for inclusion in the forthcoming RFP for services.

Functions required to integrated DER into customer engagement, data management and billing activities are included as described in the appendix "Regional JPA Organizational Model".

Functions related to program design and operations that South Bay Clean Power should deploy are sufficiently specialized and critical as to warrant more detailed disclosure here:

1. **Distributed Energy Resources Strategic Initiatives**
   - 1.1. Needs assessment:
     - 1.1.1. Assessment of customer base and potential capacity
     - 1.1.2. Special conditions due to regulatory, geographic and climatological environment
   - 1.2. Valuation and business case assessment
   - 1.3. Program design services
     - 1.3.1. Knowledge of existing programs
       - 1.3.1.1. Program rules
       - 1.3.1.2. Baseline design
       - 1.3.1.3. Financial incentive/penalty rules
     - 1.3.2. Custom program design
     - 1.3.3. Metering and telemetry requirements for DER
     - 1.3.4. Wholesale bidding strategies
     - 1.3.5. Retail engagement, aggregator engagement and contracting strategies
2. **Energy Management & Operations**

2.1. Enrollment process management
  2.1.1. Enrolling customers and registering assets with CAISO (eligibility, meter requirements, approvals, etc.)
2.2. Portfolio implementation services
2.3. Active management of DER operations
  2.3.1. Capacity nominations, event dispatch, outage management, etc.
2.4. Retail rate and tariff impact and optimization
2.5. Wholesale market participation
  2.5.1. Maximize DER investment by bidding resources in applicable markets
    2.5.1.1. Day-ahead
    2.5.1.2. Real-time energy
    2.5.1.3. Ancillary Services
  2.5.2. Resource and bid optimization
  2.5.3. Demand Response Provider (DRP), DERP and Scheduling Coordinator (SC) services
    2.5.3.1. Resource registration
    2.5.3.2. Bidding
    2.5.3.3. Award management
    2.5.3.4. Dispatch
    2.5.3.5. Telemetry
    2.5.3.6. Revenue quality meter data
    2.5.3.7. Settlements and verification
2.6. Performance measurement, validation and settlements
2.7. Integration with other systems (MDMS, etc.)
2.8. Program management reporting ('lessons learned', etc.)

Together, these capabilities will allow South Bay Clean Power to leverage its position as the entity responsible for purchasing energy and capacity for its customers in order to both continue and accelerate Southern California Edison's practice of contracting with and operationally using Distributed Energy Resources. Doing so will, in turn, leverage the existing and diverse industry of innovative companies that develops DER and provide increasing financial stimulus to the market.

### *Southern California Edison & Community Choice as Distributed Energy "Market Makers"*

The customers and businesses that choose to install Distributed Energy Resources, and the companies that finance, construct, aggregate and manage these assets, are creating the new energy infrastructure. As regulations and markets broaden to integrate DER and provide compensation for the system benefits created, these assets will increasingly contract with and sell power products to Southern California Edison as their distribution utility, to South Bay Clean Power as their load-serving entity, and directly into the wholesale electricity market.

The pace of this transformation will partly depend upon how quickly and expertly both Southern California Edison and the CCA facilitate its development. Both entities have ample opportunities to act as "market makers" in analyzing how Distributed Energy Resources could be relied upon and integrated into their respective operations as load-serving entity and distribution utility. The CCA will further expand support for DER by coordinating relevant local government initiatives in land use and zoning, in tandem with DER program initiatives advanced by both the CCA and Southern California Edison.

South Bay Clean Power should proceed with cautious optimism that CCAs and Southern California Edison can collectively navigate this period of change and sharing of responsibilities. Relevant staff and contractors of South Bay Clean Power should be familiar with the concepts, regulatory filings and plans SCE has advanced for DER, and prepared to implement corresponding and complementary initiatives for the CCA while maintaining a high level of engagement with their counterparts at SCE. Collectively, these efforts should reflect a shared understanding on how best to integrate DER into both the CCA's and utility's respective spheres of responsibility in energy planning, operations and customer engagement, and in local government land use and transportation planning initiatives.

## Summary

Rapidly lowering greenhouse gas emissions in California requires electrifying heating and transportation while building out renewable generation and using Distributed Energy Resources to 1) shift electricity usage to match daytime solar production and 2) balancing the wholesale electricity grid without relying on natural gas turbines.

In contrast to the utilities and California Public Utilities Commission, the local governments that comprise Community Choice programs exercise significant authority over zoning, land use, building codes, permitting, emergency planning, and transportation planning and investments. These authorities are critical for accelerating Distributed Energy Resources and electrifying heating and transportation.

Integrating Distributed Energy Resources into power planning and operations requires the CCA to deploy specialized capabilities, which we have summarized in this chapter and included in the design of South Bay Clean Power. By combining the energy expertise and capabilities of the CCA with the authorities of local governments in land use and transportation, and in collaborating proactively with Southern California Edison, South Bay Clean Power will ensure that the Los Angeles region employs a holistic and expanded approach to accelerating Distributed Energy Resources.

By deploying a CCA with these capabilities from day one, South Bay Clean Power will be designed to stimulate the maximum investment into Distributed Energy Resources —and will drive local economic investment and the creation of new jobs in the program's territory in the process.

## South Bay Clean Power Governance Structure

The South Bay Clean Power group is comprised of fourteen municipal governments in the South Bay and West side of Los Angeles. Experience in other CCA territories has proven that when entities join together to launch and manage a CCA, such as in a Joint Powers Agency (JPA), they gain economy-of-scale advantages, both in minimizing shared costs and by achieving shared policy objectives across a larger territory.

Establishing a Joint Powers Agency (JPA) enables multiple governments to jointly manage a single CCA program, while legally separating the debts, liabilities and obligations of the CCA program from the participating local governments, protecting their General Funds from significant financial risk. Consequently, all multi-jurisdictional CCAs in California to date have been established using a JPA, and we recommend this approach for South Bay Clean Power.

The prospective member governments of South Bay Clean Power may choose to form their own JPA, or alternatively elect to form a JPA with the County of Los Angeles and other interested cities. We evaluate the County JPA option, and offer insights into its potential benefits and drawbacks.

In consideration of the advantages that a county-wide JPA represents, we also detail a third option based on a model used by municipal utilities in California, which would allow a regional approach but avoid the potential short-falls we have identified in the County's proposal.

### Option to Form South Bay Clean Power JPA

JPAs exercise authorities inherent in their member governments, as granted to the agency by a Joint Powers Agreement that is approved and signed by all member governments. We have reviewed and analyzed the Joint Powers Agreements for several California CCAs and other public power entities, and have submitted a draft Joint Powers Agreement for South Bay Clean Power's review.

#### *Best Practices for Joint Powers Agreement*

Based on our review and analysis we have incorporated a variety of best practices into our draft JPA agreement, which we have called attention to and explained in comments inserted into the draft, as well as in supporting documentation and presentations to staff and SBCP Advisory Committee members. In brief, we have recommended language to:

1) Provide for an empowered JPA governing board of local elected officials, providing for more control over which responsibilities are delegated to the executive staff in future (through the adoption of bylaws);
2) Increase transparency and public participation, by providing for a regular, independent operational audit as well as a Citizens Advisory Committee with a nominal budget that may determine its own priorities and elect a Chair and Vice-Chair, one of whom will also serve as non-voting 'ex-officio' members on the JPA's governing board;
3) Heighten fiscal responsibility, in clarifying that all revenues are to be used for agreed-upon energy-related purposes, and that the JPA may not be terminated prior to the settlement of all outstanding debts;
4) Clarify the process contingencies and financial responsibilities of members in the unexpected occasion that they choose to withdraw from the JPA in future, or are involuntarily terminated by the other members.

We have also provided a proposed list of Recitals in the JPA document, which reflect the local energy policy goals shared by the prospective member governments of South Bay Clean Power and the most effective language from other JPA documents created by California CCAs.

### *Board Composition and Voting Rights*

To exercise the authorities granted by the Joint Powers Agreement, JPAs are overseen and governed by a board of directors, typically of elected officials appointed from all member governments (or their designated representatives). In the case of South Bay Clean Power, the JPA Board would be composed of one City Council member from each of the participating cities. This ensures that the activities of the CCA reflect the local energy policy goals for its territory as a whole.

Under our proposed governance model, South Bay Clean Power member governments would each appoint one elected official as a director on the CCA Board, as well as an alternate director who does not have to be an elected official (i.e. the alternate may be staff, or a technical expert).

We have proposed a dual voting structure for the Board that is modeled on the structure used by several other CCAs. Under this mechanism, decisions are made based on the votes of directors present unless any director calls for a weighted vote. In that instance, any motion would have to be passed by a majority of directors present as well as a majority vote based on weighted shares.

Each member government's weighted share is based upon the gross revenue their respective territory represents, as a percentage of the CCA's total revenues. (Note that certain motions, as specified in the JPA, will require a two-thirds or three-quarters supermajority vote to pass.)

The goal of this voting mechanism is to provide a balance and fairness between the voting powers of large and small members, by ensuring that that the CCA's large members or a faction of its small members essentially has veto rights to block an action, but cannot carry a motion over the objections of a majority of directors (regardless of the size of the territories those directors represent).

The fourteen prospective member governments of South Bay Clean Power include four governments that represent 70% of the electricity usage and revenue of the entire territory. Our proposed voting mechanism makes certain that a "tyranny of the majority" situation is avoided. In other words, the four largest governments will not be able to impose an action on the ten smaller governments unilaterally, because a majority vote of directors will always be required. Similarly, the ten smaller governments will not be able to impose an action on the four larger governments through a majority vote of directors, because a weighted vote may be called by any director.

Experience with California's JPAs to date has shown a high level of cohesion between all member governments represented on CCA boards — to the extent that most, if not all, votes have been unanimous. This is due to two practices, which we recommend for South Bay Clean Power:

1) All JPAs formed to date to manage CCAs have been composed of governments with shared energy policy objectives (so that there is no disagreement on the program's overall goals, but may occasionally be conflicting opinions on the best way to achieve those goals);
2) Bylaws that CCA boards have adopted established processes and committees to find acceptable solutions to any potentially contentious matter, prior to bringing the issue to the Board for a vote.

For reference, the estimated weighted voting shares of the prospective member governments of South Bay Clean Power are shown below:

**SOUTH BAY CLEAN POWER**
**ANNUAL GROSS REVENUES AND VOTING SHARES**

| Member | Load (MWh) | Gross Revenues | Weighted Voting Share | Director Voting Share |
|---|---|---|---|---|
| Rolling Hills Estates | 58,670 | $3,520,200 | 0.92 | 1 |
| Palos Verdes Estates | 59,267 | $3,556,020 | 0.93 | 1 |
| Lomita | 59,743 | $3,584,580 | 0.94 | 1 |
| Hermosa Beach | 79,251 | $4,755,060 | 1.24 | 1 |
| Rancho Palos Verdes | 193,017 | $11,581,020 | 3.03 | 1 |
| Manhattan Beach | 201,673 | $12,100,380 | 3.16 | 1 |
| Malibu | 207,408 | $12,444,480 | 3.25 | 1 |
| Redondo Beach | 297,652 | $17,859,120 | 4.67 | 1 |
| West Hollywood | 323,687 | $19,421,220 | 5.08 | 1 |
| Culver City | 437,764 | $26,265,840 | 6.87 | 1 |
| Beverly Hills | 662,171 | $39,730,260 | 10.39 | 1 |
| Santa Monica | 922,716 | $55,362,960 | 14.48 | 1 |
| Carson | 1,290,329 | $77,419,740 | 20.25 | 1 |
| Torrance | 1,578,747 | $94,724,820 | 24.78 | 1 |
| **Total** | **6,372,095** | **$382,325,700** | **100** | **14** |

## Option of Joining Los Angeles County's JPA

The prospective member governments of South Bay Clean Power also have the option of joining the County of Los Angeles and other interested cities in the county to establish a JPA to manage a Countywide CCA.

Without question, there are financial and strategic advantages that accompany the economy-of-scale that a county-wide JPA would provide — however, bigger is not always better when it comes to CCA governance. The overall effectiveness, democratic inclusiveness and ultimate stability of the JPA may be compromised if the number of governments involved exceeds the number of board seats that would be practical, and if the policy objectives of the diverse governments involved are not in alignment.

JPAs formed to oversee CCAs should be composed of governments with shared policy objectives. Otherwise, disagreements at the Board level could compromise a) the ability of the CCA to function effectively and achieve policy goals — or in the event member governments depart as a consequence, b) the JPA's long-term stability as a political entity. The alterative — forming a JPA composed of governments with divergent policy goals — is workable in some cases, but only if the JPA structure is sufficiently flexible to allow mutually-exclusive projects to proceed concurrently. Given the practical considerations and trade-offs in managing a power portfolio, a Community Choice program comprised of governments with divergent goals may not be stable.

For example, if a JPA were formed between a number of liberal and conservative local governments, there would likely be disagreements over the extent to which CCA should prioritize the minimization of greenhouse-gas emissions, whether it should contract for new natural gas plants, whether net revenues should be used to lower rates or construct new renewables, whether union labor and apprenticeship programs should be pursued, and to what extent programs should be funded to support distributed generation.

Additionally, there is a practical limitation regarding the number of governments that can form and govern a JPA. A Board that is too large effectively precludes meaningful representation of all but the largest governments involved, or factions of multiple governments. This risks imposing the policy goals of certain governments or factions on all member governments, diminishes the quality of discourse in governance matters, and similarly calls into question the long-term stability of the JPA as a political entity.

This problem is particularly relevant for South Bay Clean Power, as it weighs the option of forming its own JPA or to join with the County of Los Angeles to form a larger program. There are 82 eligible cities and the County itself in Los Angeles County, and a governing board of this size would be practically unworkable.

While the County is still deliberating voting models in consultation with cities, the likely solution would be to impose a representative system of governance, such that multiple cities would be represented by a single Board member. This, and the scale of the other governments involved, presents the same risks we detail above in terms of factionalism, imposition of policy directives, lack of effective discourse, and thus long-term political stability. It would likely also diminish the ability of the CCA to coordinate directly with local governments on land use and transportation initiatives at the local level to support Distributed Energy Resources, as detailed in the section "Local Government Land Use and Transportation Authorities" earlier in this report.

## Option to Form a Regional JPA with Multiple, Independent CCAs in Los Angeles

We have developed a third viable option for South Bay Clean Power and all other CCA initiatives in Los Angeles County, one designed to leverage the benefits of economies of scale while at the same time providing for true local control and local cost allocation on the issues that matter most to local governments. Our proposal is based on the model long proven by the public power industry in California:

- Multiple autonomous and sovereign CCAs (like South Bay Clean Power) are created throughout Los Angeles County, and each determines their own power portfolio choices rates and program elements while retaining full control of their financial policies, revenues and reserve funds;
- These CCAs collectively form a regional JPA to provide economies of scale for its members to share various required services and streamline startup financing, joint-planning and joint procurement exercises (when prudent) and coordinated regulatory and legislative engagement.

Public power entities in California have created similar arrangements under which they effectively operate that can be used as models for South Bay Clean Power: the Northern California Power Agency (NCPA), a JPA of fifteen municipal utilities and cooperatives, and the Southern California Public Power Authority (SCPPA), a JPA of twelve municipal utilities and irrigation districts. Each provides power to approximately five million people.

Both of these public power JPAs facilitate bond issuances, joint energy procurement and the development of power plants for their member utilities, and provide a variety of energy management services. For example:

- NCPA invested in the expert staffing and control centers required to provide energy operations on a continuous basis (24/7/365) for its members;

- SCPPA hired contractors to offer a "menu" of comparable services for its members under standardized contracts and at relatively low-cost, pre-negotiated rates.

We recommend membership in a regional JPA based on this approach for South Bay Clean Power and all other CCA initiatives in Los Angeles County, including LA County's own CCA. In so doing groups of cities with similar policy goals would be enabled to form JPA governing boards of a practical size, and to retain local control over their energy choices, rates, revenues and financial reserves.

Simultaneously, this approach allows CCAs to access the economy of scale inherent in a county-wide Regional JPA, to provide the services necessary to achieve the policy objectives of member CCAs.

As a result, this approach avoids the political and financial issues associated with an all-inclusive Los Angeles County CCA program detailed previously. This option will also ensure that all CCAs which launch in Los Angeles County remain both politically stable and capable of achieving the local energy policy goals of their respective communities over the long-term.

Additionally, as a forum to coordinate the financial policies and planning for member CCAs, the regional JPA could oversee and streamline the credit rating process, to accelerate the joint issuance of revenue bonds in order to finance capital projects and power purchases.

We recommend that this regional JPA provide services to its member CCAs in a manner similar to SCPPA, by contracting for necessary services and building up staff capacity across various management functions. In future, member CCAs may choose to follow the example of NCPA by investing in the internal capacity necessary to self-supply operational services as well, though this is beyond the scope of this report.

### *Advantages that Support Distributed Energy Resources*

While many of our recommendations to accelerate Distributed Energy Resources focus on the specialized capabilities that the CCA will employ as a load-serving entity (in power planning, markets and operations), the governance structure of the program has a distinct but equally-critical role to play in this regard.

Under the Regional JPA governance structure, all local governments throughout the Los Angeles region will be involved with Community Choice on a regular basis, both as board members on their respective CCAs and on committees for the Regional JPA (as detailed below under "Regional JPA Board Composition, Committees and oversight mechanisms").

As detailed in the section "Local Government Land Use and Transportation Authorities" earlier in this report, local governments exercise significant authority over zoning, land use, building codes, permitting, emergency planning, and transportation planning and investments. In various ways, these authorities are all critical to accelerating Distributed Energy Resources and thereby supporting broad, sectoral carbon reductions — not only for electricity generation, but also transportation electrification and fuel-switching of appliances (from natural gas to clean electricity).

The Regional JPA governance structure is designed to support and enhance these local activities, by providing a direct channel of regular communication to share best practices and to coordinate local government initiatives in tandem with both the Regional JPA and with Southern California Edison.

Uniquely, CCAs are the only load-serving entity that can also leverage local government authorities to accomplish this goal.

Consequently, there is a compelling opportunity to use the technical expertise, customer outreach activities, power procurement and operational responsibilities of a CCA program, and to have the Regional JPA coordinate with Southern California Edison in a variety of ways, to subsequently inform and coordinate local government initiatives that support Distributed Energy Resources. In this manner, Community Choice as implemented through the Regional JPA governance structure will fundamentally strengthen the ability of the Los Angeles region to meet distributed energy and greenhouse-gas reduction goals in a holistic and coordinated fashion.

### *Cost Allocation Issues & Member CCA Minimum Size*

The method by which shared costs are allocated between member CCAs of the regional JPA has to be carefully formulated, as unfair cost allocation practices that any individual member CCA finds objectionable may undermine the stability of the agency.

To a large extent, cost allocation issues become much more complex or contentious if member CCAs are significantly disproportionate in size. Imposing a minimum size requirement for membership in the regional JPA may therefore simplify these potential issues. Often the best approach is to ensure that shared costs are apportioned on an energy or gross revenue basis that is proportional to size of the member. Fixed allocations of costs adversely impact small members, often overshadowing the economic benefit available to them as members.

For reference, South Bay Clean Power accounts for approximately 20% of the overall electricity load eligible for CCA service in Los Angeles County, and the equivalent figures for the unincorporated County territory and Long Beach are 13% and 10%, respectively. If the regional JPA is composed of five to eight CCAs of this size, cost allocation issues would be relatively straight-forward.

### Cost Accounting

Costs for contracted services will likely be both pooled and shared proportionally between member CCAs, and also passed through directly to individual CCAs as appropriate. For example, power management require an integrated set of services to be deployed, the costs of which would be shared proportionally with each member. However, the contractor will incur additional costs for serving each CCA, whether it is a founding member of the regional JPA or if a new CCA joins in future. These costs are incurred because each member CCA requires separate cost accounting, planning exercises and market operations to manage the CCA's portfolio (which is separate from the portfolios of other member CCAs' power portfolios). However, the over-arching structure within which these CCA-specific tasks are conducted is already deployed — so the additional cost will be primarily due to increased staff time, and should be marginal.

Tracking these contractor costs appropriately, divided between "base costs" and "marginal costs", should be straight-forward. Similarly, government staff and overhead costs required for operating the regional JPA and managing contractors will be allocated in the same fashion. There will be a minimum level of expense required regardless of the number of member CCAs (base cost), and then additional staff costs to cover the provision of service for each additional member CCA (marginal costs).

Member CCAs may also choose to deploy certain additional services offered by contractors, which other member CCAs may not choose to deploy, or will deploy at a different scale or volume. For example, a call center contractor could offer to make outbound calls to enroll customers in a distributed energy program. One CCA territory may have a much larger distributed energy focus than another — and so would incur greater costs for this call center service. These costs would also be accounted for separately, and billed to the applicable CCA member. We refer to these as "optional" costs.

In summary, there are three categories of costs anticipated to be tracked and allocated to CCA members by the regional JPA:

1) Base costs: the shared costs of providing a minimum level of service, composed of contractor fees and the staffing and overhead costs of the JPA;
2) Marginal costs: the additional fees and staffing expenses associated with providing each CCA member a separate set of services;
3) Optional costs: for services deployed at the discretion of each member CCA.

### Cost Allocation

Since marginal and optional costs are accounted for separately and assigned to each member CCA as appropriate, the remaining question is how to allocate base costs amongst member CCAs.

There are two methodologies and concepts of fairness typically debated in designing these mechanisms:

1) The first is to apportion costs equally between member CCAs. For example, a base operating budget of $10 million would be split equally among five members, such that each CCA would contribute $2 million. This is simple and appears "fair" at a high-level, but can impose relatively unequal burdens if CCAs have different sized customer bases and gross revenue; smaller CCAs would need to devote a higher share of their gross revenues to covering these costs, and larger CCAs would devote a proportionally smaller share of their gross revenues. Consequently, the rates charged to customers for smaller CCAs would have to be higher than for larger CCAs.
2) The second methodology, therefore, is to apportion base costs relative to each member CCA's share of total annual revenue collected by all CCAs in the regional JPA. This methodology is "fair" in that all customers contribute equally (in terms of a percentage of their bills) to funding the base costs of the regional JPA, even though in aggregate, larger CCAs contribute more funding than smaller CCAs under the mechanism. To take the same example, if a $10 million operating budget was split between five CCA members, with two members being half the size of the three larger members, the three larger CCAs would each contribute $2.5 million and the two smaller CCAs would contribute $1.5 million.

We recommend the second cost allocation methodology be used to apportion base costs. This avoids unequal rate burdens for individual customers, who are all paying in aggregate for the same quality of base services. While larger CCA members could be inclined to view this as a type of subsidization of smaller CCA members, it should be noted that by sharing costs, all members are able to afford a superior quality of services through the regional JPA than any single member could individually. By not imposing unequal customer rate pressures on smaller members, this mechanism removes one potential source of political instability for the regional JPA as a whole. Additionally, any perceived

cross-subsidization is contained by accounting for marginal and optional costs separately, and passing these through directly to the member CCAs that cause these costs to be incurred.

Lastly, adopting a policy requiring member CCAs to meet a certain minimum size (such that the regional JPA does not grow to encompass multiple member CCAs which are a small fraction of the size of larger members) will largely avoid this potential source of friction

### *Regional JPA Board Composition, Committees and oversight mechanisms*

NPCA is governed by elected officials while SCPPA has a governing commission composed of the utility managers of each of its members. In consideration of the fact that the regional JPA has no inherent policy mandate, but is organized primarily to provide expert services of a technical nature to its member CCAs, we recommend that SCPPA's governance model be adopted. Under this proposal, the governing Commission of the regional JPA would be composed of the Executive Directors of each CCA member.

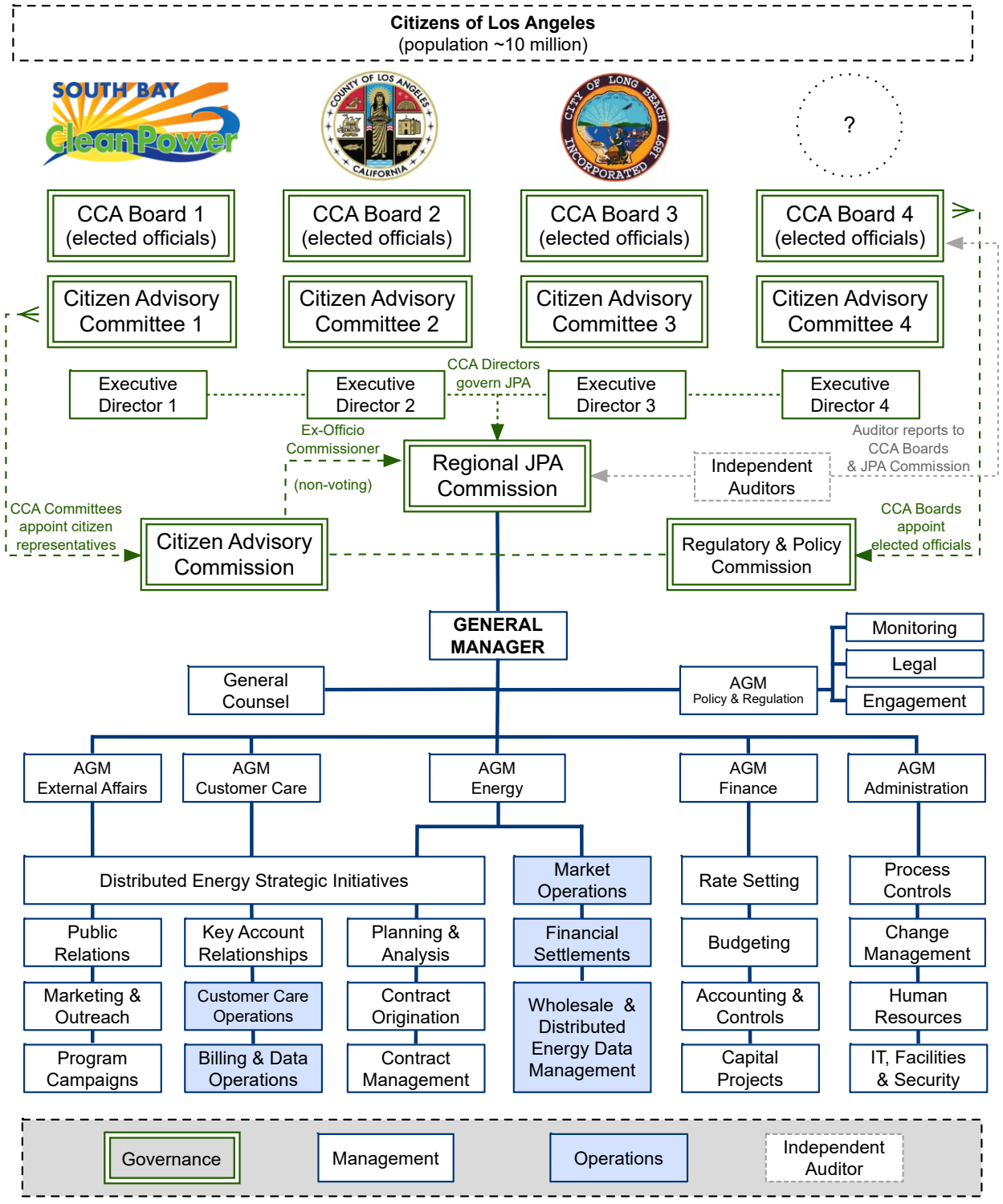
However, cohesion between the local governments that comprise each member CCA in advocating for various legislative and regulatory reforms is a powerful strategic advantage of the regional approach. Additionally, coordinating local government initiatives on land use and transportation to support Distributed Energy Resources, informed by the CCA's technical expertise, is a key strategic goal of the Regional JPA structure. To provide a mechanism that allows local elected officials a direct role in formulating these strategies and communicating with other elected officials in each CCA member territory, we recommend that the regional JPA form a Regulatory and Policy Commission. Elected officials from each member CCA governing board would be appointed to this Commission. This is based upon a similar committee used by NCPA.

Further, to continue the tradition of direct public participation in the governance of CCAs, we recommend that a Citizens Advisory Commission be established by the regional JPA. The Citizens Advisory Committees of each member CCA would elect two of their members to serve on this Commission. As under our proposed JPA for South Bay Clean Power, the elected Chair of the Citizens Advisory Commission will also serve as a non-voting 'ex-officio' members on the governing Commission of the regional JPA. The Citizens Advisory Commission would act as an information-sharing conduit for the CCA Committees, have access to all internal reporting for the Regional JPA, would ensure that the activities of the Regional JPA were transparently communicated to the public (for example, in that meetings and minutes were made available online, etc.) and would provide a regular forum at the Regional JPA for interested members of the public to provide input or seek further information.

Lastly, to provide neutral, third-party oversight, we recommend that an independent audit of the regional JPA's activities be conducted on a regular basis (e.g. every two years), and the results reported directly to the governing Boards of each member CCA.

### *Organization Chart*

The organization chart on the next page shows the governance relationship between the regional JPA and CCA Boards, Citizen Advisory Committees and Executive Directors, the reporting function of the independent auditor, and key staff positions and department activities in management and operational functions.




Note that this chart broadly captures all the functions detailed under the "Regional JPA Managerial and Operational Responsibilities" chapter of this report, and illustrates which departmental head is responsible for overseeing each function (as detailed in the subsequent "South Bay Clean Power & Regional JPA Staffing and Development" section).

## South Bay Clean Power & Regional JPA Staffing and Development

All California CCAs to date have launched with minimal staff and subsequently grown over time. Our recommended best practices are designed to further minimize the staff resources required prior to program launch, provide the CCA with greater program capabilities at launch, and facilitate an accelerated transition of responsibilities to staff during the initial years of our program's operations.

This section provides a narrative description of that process, as well as several charts and tables that depict the overall organization of the CCAs and regional JPA, initial hiring plans, and the detailed transition of responsibilities as the agency grows.

All of the management and technical functions referenced in this section are listed in the proceeding chapter "Regional JPA Managerial and Operational Responsibilities" and described in detail in the appendix "Regional JPA Organizational Model".

Note that our recommendations and framework, as described in this section, broadly applies in the event South Bay Clean Power operates its own CCA unilaterally, or forms a regional JPA to share costs in coordination with other CCAs in Los Angeles. In recognition of the advantages a regional JPA would provide, and because the County and several cities are actively pursuing CCA, we have written this section assuming services are provided through a regional JPA. In the event South Bay Clean Power chooses to unilaterally contract for services and operates its own CCA, there would be a decrease in estimated staff required for certain functions but no diminishment in contracted services.

### Initial Hiring and Staffing Plan

During the design and implementation phases, local government staff required will be limited to existing legal counsel and the newly-hired Executive Director(s) for each CCA as well as a General Manager for the regional JPA. These staff should have substantial experience in managing comparable power enterprises. They will be primarily responsible for finalizing the RFP for services to be issued by the JPA, evaluating bid responses and negotiating service contracts with successful bidders. Subsequently, they will:

1) Oversee the CCA's implementation activities, submit the required filings and authorize all key actions;
2) Hire the JPA's Assistant General Manager (AGM) for Policy and Regulatory Affairs;
3) Liaise with CCA Boards and Community Advisory Committees on implementation activities;
4) Work with CCA Boards and contractors to finalize all CCA Board and JPA Commission policies;
5) Towards the latter stages of implementation, staff will commence the interview and hiring processes for the remaining JPA Assistant General Manager positions (for Energy, Finance, Administration, External Affairs, and Customer Care Departments).

All Assistant General Manager staff will begin work soon after the program launches and will assume working relationships with service contractors. At this same time, they will start hiring support staff to assume increasing management and oversight functions during the first 12 months of CCA program operations.

Contractors will be relied on initially to provide a limited set of necessary management functions and all the operational functions detailed in the proceeding section, under contract structures designed to support the transition of certain responsibilities to staff over time.

## *Staffing Plan*

Key executive staff positions to be filled during program implementation or soon after program launch, departmental responsibilities, and estimates for departmental staff requirements during program operations are shown below:

| STAFFING PLAN | | | |
|---|---|---|---|
| **Executive Staff Positions** | **Hiring Phase** | **Departmental Hires (Full Time Equivalent)*** | **Executive Staff & Departmental Responsibilities (during operations)** |
| **Executive Directors (for each CCA)** | Design | Hire all Assistant General Manager (AGM) positions | Govern the regional JPA, and liaise with CCA Boards and Citizen Advisory Committees to set policies, power portfolio choices, rates and financial reserves. |
| **General Manager (for regional JPA)** | Design | | Oversee the management and operational functions of the regional JPA and strategic regulatory initiatives. |
| **AGM — Policy & Regulatory Affairs** | Implementation | 8 | Monitor and engage in legislative and regulatory affairs, and coordinate across departments in formulating strategies and advising on compliance. |
| **AGM — Administration** | Post-launch | 3 | Provide process control oversight, human resources, information technology, and management of facilities and physical security. |
| **AGM — Finance** | Post-launch | 4 | Conduct rate setting and budgeting exercises, maintain financial controls and accounting standards, and provide financial planning for project development. |
| **AGM — Energy** | Post-launch | 12 | Manage or provide all energy management functions, and oversee energy operational functions. |
| **AGM — External Affairs** | Post-launch | 5 | Conduct general marketing and outreach, manage targeted campaigns to customers, and represent the program in public relations. |
| **AGM — Customer Care** | Post-launch | 8 | Directly manage key accounts and oversee customer care operations (primarily, call center and utility data & billing functions). |

For the Regional JPA, our proposed staffing plan requires seven executive staff to oversee approximately forty support staff, to be hired over the first three years of program operations. This plan is preliminary, designed to support five to eight member CCAs, and largely dependent on the extent that executive staff choose to transition managerial responsibilities in-house (as opposed to remaining wholly dependent on contractors to provide these services) — particularly for energy risk management activities.

Note that transitioning most operational responsibilities (in energy, data and billing, and customer care functions) is beyond the forecast period covered in our report. Doing so may be advantageous in terms of long-term cost savings, but will require significant initial investments in the infrastructure and expert staffing required. Additionally, it may instead be advantageous to continue to outsource some or all operational services, as doing so provides strong incentives for contractors to minimize costs and continue to innovate and improve their service offerings. In the event that the JPA chooses to invest in infrastructure and staff, it may also continue to contract for the underlying software systems on a Software-as-a-Service (SaaS) basis. Doing so minimizes

upfront investment costs (SaaS contracts typically have a lower upfront cost combined with regular subscription payments thereafter) and allows the JPA the flexibility to change software providers in future.

## Transition of Responsibilities

The chart below lists each of the functions across management and operations (are listed in the proceeding chapter "***Regional JPA Managerial and Operational Responsibilities***" and described in detail in the appendix "***Regional JPA Organizational Model"***), and shows the division of responsibilities between staff and contractors during implementation and the initial three years of program operations:

| | | Key: No Activity | Contractor | Joint Responsibility | JPA Staff |
|---|---|---|---|---|---|
| | | Implementation | Year 1 | Year 2 | Year 3 |
| Management Functions | **Administration and Oversight** | | | | |
| | Board and Committee Relations | | | | |
| | Human Resources | | | | |
| | Internal Process Controls | | | | |
| | Information Technology | | | | |
| | Facilities and Security | | | | |
| | **Finance** | | | | |
| | Budget and Financial Planning | | | | |
| | Capital Projects | | | | |
| | Accounting and Controls | | | | |
| | Rate Setting and Revenue Forecasting | | | | |
| | **Policy and Regulatory Affairs** | | | | |
| | Legal and Regulatory Affairs | | | | |
| | Lobbying Activities | | | | |
| | **External Affairs** | | | | |
| | Public Relations, Marketing and Outreach | | | | |
| | **Customer Care** | | | | |
| | Key Account Relationship Management | | | | |
| | **Energy Management Functions** | | | | |
| | Distributed Energy Resource Strategic Initiatives | | | | |
| | Planning and Analysis | | | | |
| | Targeting of Distributed Energy Resources | | | | |
| | Distributed Energy Resource EM&V and Forecasting | | | | |
| | Demand and Price Forecasting | | | | |
| | Fundamental Modeling & Analysis | | | | |
| | Portfolio Development & Valuation | | | | |
| | Portfolio Reporting | | | | |
| | Procurement Policy Analytics | | | | |
| | Integrated Resource Planning | | | | |
| | Contract Origination | | | | |
| | Contract Management | | | | |
| Operational Functions | **Energy Operations** | | | | |
| | Distributed Energy Information and Data Management | | | | |
| | Scheduling, Trading and Market Operations | | | | |
| | Settlements and Operations Services | | | | |
| | Bulk Power Information and Data Management | | | | |
| | **Customer Billing and Data Operations** | | | | |
| | Customer Relationship Management (CRM) Database | | | | |
| | Electronic Data Interchange (EDI) | | | | |
| | Billing and Verification Services | | | | |
| | Internal Reporting and Compliance | | | | |
| | **Customer Care Operations** | | | | |
| | Inbound Call Handling | | | | |
| | Outbound Customer Calling | | | | |
| | Other Customer Channels | | | | |

Because of the advantages of developing in-house staff resources and expertise the JPA will actively plan for and support this transition in their staffing and training program, using the following resources to support the development of internal staff capacity:

1) An "Agency Development Roadmap", delineating the schedule of transitioning increasing program management functions to government staff;
2) A comprehensive guidebook covering all aspects of program management and operation functions (the Business Process Manual, BPM);
3) General training resources and customized training programs, including continuing education for key staff;
4) Online portals for accessing and analyzing energy and customer databases, key reporting and analytical tools, and dispositions of evolving legislation and regulations affecting the CCA.

These intentions and requirements are important to communicate to the contractors hired to provide services, and have been incorporated into our recommended best practices in the section "Contracting for Services" as well as the appendix "Best Practices in RFP Design".

## Evolving Role of Member CCAs

As newly-formed entities, each member CCA will commence with a minimum of staff or resources. The organization chart in the previous chapter shows each member CCA with a governing board of elected officials, a volunteer committee of citizens, and an Executive Director staff position (who serves on the governing Commission of the Regional JPA).

As each member CCA earns net revenues and grows a reserve fund, discretionary budget will be available to develop customized programs or to hire additional staff to provide capabilities beyond those offered through the Regional JPA. The CCA's Executive Director will determine which functions are more efficiently conducted through the Regional JPA, and which would be more cost-effective or appropriate to conduct 'in-house' for the CCA.

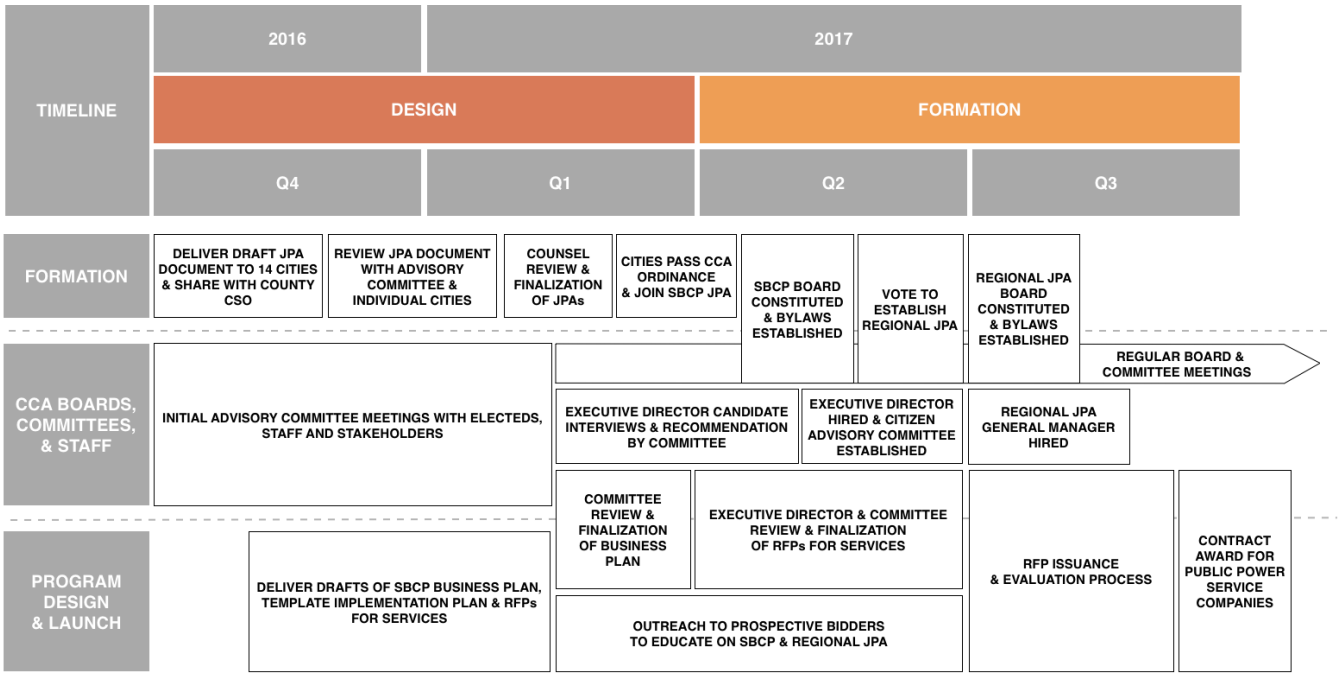
As one example, a member CCA may choose to invest funding or staff time to more heavily market specific DER programs in their territory, the operation of which is more cost-effectively provided by the Regional JPA as a standardized DER program across all member territories.

## Implementation Process and Timeline

The following diagrams forecast the implementation and launch process for South Bay Clean Power and the Regional JPA of CCAs, accompanied by brief narrative descriptions of each phase of the process.

This assumes that at least one other CCA program forms on a comparable timeline with South Bay Clean Power. (In this regard, the County of Los Angeles or the City of Long Beach are current candidates.) Alternatively, South Bay Clean Power could contract for services and launch a CCA program independently; in this case, certain activities related to the establishment of the regional JPA shown below would be unnecessary, but the overall timeline and process would not change substantially. The RFP for services would be issued by South Bay Clean Power directly, instead of through the Regional JPA.

### Implementation Process: Q4 2016 through Q3 2017



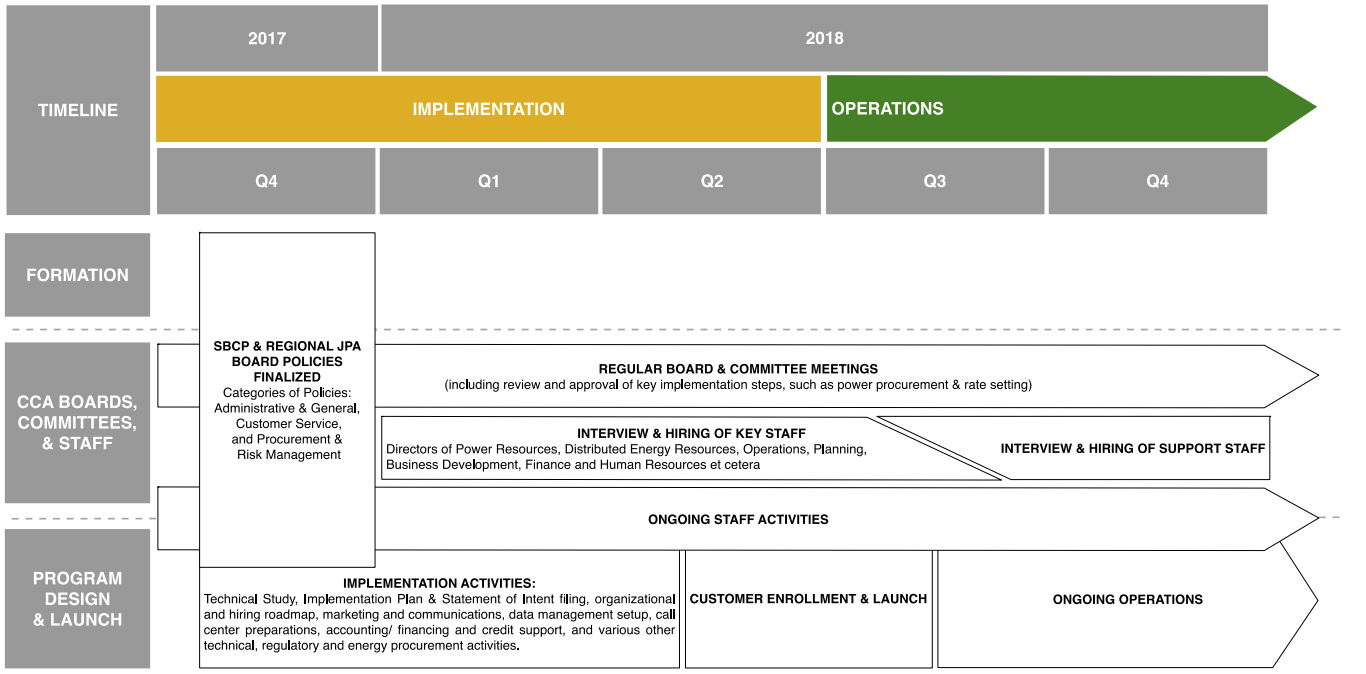

**Q4 2016 to Q1 2017**: the SBCP Advisory Committee will receive drafts of this Business Plan, the Joint Powers Agreement for the SBCP CCA as well as the Regional JPA of CCAs, the Request for Proposals and examples of Implementation Plans for use as templates. Counsel for cities will review and finalize the JPAs in coordination with the Advisory Committee. The Advisory Committee will also finalize the Business Plan, review and submit feedback on the RFPs for services, and begin interviewing candidates for the Executive Director position. Interested cities will pass ordinances to implement CCA and join the South Bay Clean Power JPA.

**Q2 2017:** elected officials from member cities will be appointed to the SBCP JPA board, and subsequently will establish bylaws, consider the recommendations of the Advisory Committee in hiring an Executive Director, vote to establish the Regional JPA of CCAs, and appoint members to the CCA's Citizen Advisory Committee (which will assume the responsibilities of the outgoing SBCP Advisory Committee). The Citizen Advisory Committee and Executive Director will finalize the RFPs

for services, compile a list of prospective bid respondents, and commence educating interested companies about SBCP, the Regional JPA and the forthcoming bid opportunity.

**Q3 2017:** the Executive Directors of the CCAs formed will establish the governing Commission of the regional JPA, establish bylaws, hire a General Manager and issue the RFP for services. The Citizen Advisory Committees of the CCAs will appoint members to the Regional JPA's Citizen Advisory Commission, which will in turn nominate their chair to serve as an ex-officio member of the governing Commission. Both Commissions and General Manager will evaluate bid responses and select winning bidders, who will negotiate service contracts with the General Manger and Counsel; all contracts will be approved by the governing Commission of the Regional JPA.

## Implementation Process: Q4 2017 through Q4 2018




**Q4 2017 to Q1 2018:** implementation activities will commence, with executive staff and contractors working in coordination and regular board, commission and committee meetings overseeing the process. During the initial phase of contracted work, a Technical Study forecasting the CCA's financial performance will be presented by contractors. If accepted by the Regional JPA governing Commission, the implementation process would continue. After this point, the board policies for all CCAs and the regional JPA will be finalized, and the Executive Directors of the CCAs and General Manager of the regional JPA will begin interviews for key executive staff positions (Assistant General Manager positions).

**Q2 to Q4 2018:** in accordance with policies adopted by the CCAs and regional JPA, implementation activities would conclude with the signing of power contracts (approved by the regional JPA governing Commission). Rates would be set as approved by each CCA board, initial customers would be enrolled and served opt-out notices, and the program would commence operations. All key executive staff would be hired soon after launch, and commence interviews to hire support staff positions within their respective departments. Operations would continue, with various management responsibilities transitioned to agency staff as appropriate.

## Regional JPA Managerial and Operational Responsibilities

Defining the managerial and operational functions and capabilities that the Community Choice program intends to deploy is an important step in the program design process. The narrative description of these functions is referred to as an "organizational model". This will essentially determine what the CCA can and cannot do in a practical sense. It is of the utmost importance that the planned capabilities of the CCA anticipate, are aligned with and support the local energy policy goals for South Bay Clean Power. Otherwise, the implementation process will fail to hire contractors with the required skills or services, and the program will subsequently fall short of expectations — potentially for a period of years.

In drafting the program's organizational model, we have broadly relied upon documentation from operational CCA programs for most functions. However, when it comes to energy services, the organizational model pioneered by the Redwood Coast Energy Authority was our primary guide. Redwood's energy services are much broader and more active on a daily basis than CCAs have deployed to date, and more closely resemble the highly-effective abilities employed by utilities.

These expanded energy-service capabilities, recommended for South Bay Clean Power, are summarized in the first chapter of this report, "Case Study: the Redwood Coast Energy Authority" *(*subsection *"*Overview of Expanded Energy Risk Management Services*"*).

Energy services are a CCA's most complex and critical set of functions. The overall effectiveness in energy services will determine how well South Bay Clean Power's CCA, over the long-term, can manage the financial risks associated with the provision of power. At the same time, the CCA's energy services will dictate how well the program achieves state and local policy goals, balancing potentially competing requirements to maintain competitive rates, accrue a strong balance sheet, lower greenhouse gas emissions and increase the CCA's reliance on renewable generation and Distributed Energy Resources. In particular, the organizational model must anticipate the functional specifications required for the CCA to be practically able to integrate Distributed Energy Resources, which are discussed in detail in the previous chapter "***Distributed Energy***".

In defining these new or expanded energy service functions for South Bay Clean Power, we also reviewed the organizational models of the Northern California Power Agency and the Southern California Public Power Authority (both are regional JPAs of municipal utilities) as well as those of Southern California Edison in addition to the Redwood Coast Energy Authority.

Our recommended organization model covers the functions listed below:

1. **MANAGEMENT FUNCTIONS**
   - 1.1. Administration and Oversight
     - 1.1.1. Board and Committee Relations
     - 1.1.2. Human Resources
     - 1.1.3. Internal Process Controls
     - 1.1.4. Information Technology
     - 1.1.5. Facilities and Security
   - 1.2. Finance
     - 1.2.1. Budget and Financial Planning
     - 1.2.2. Capital Projects
     - 1.2.3. Accounting and Controls

1.2.4. Rate Setting and Revenue Forecasting
1.3. Policy and Regulatory Affairs
1.3.1. Legal and Regulatory Affairs
1.3.2. Lobbying Activities
1.4. External Affairs
1.4.1. Public Relations, Marketing and Outreach
1.5. Customer Care
1.5.1. Key Account Relationship Management
1.6. Energy Management Functions
1.6.1. Distributed Energy Resource Strategic Initiatives
1.6.2. Planning and Analysis
1.6.3. Targeting of Distributed Energy Resources
1.6.4. Distributed Energy Resource EM&V and Forecasting
1.6.5. Demand and Price Forecasting
1.6.6. Fundamental Modeling & Analysis
1.6.7. Portfolio Development & Valuation
1.6.8. Portfolio Reporting
1.6.9. Procurement Policy Analytics
1.6.10. Integrated Resource Planning
1.7. Contract Origination
1.8. Contract Management

**2. OPERATIONAL FUNCTIONS**

2.1. Energy Operations
2.1.1. Distributed Energy Information and Data Management
2.1.2. Scheduling, Trading and Market Operations
2.1.3. Settlements and Operations Services
2.1.4. Bulk Power Information and Data Management
2.2. Customer Billing and Data Operations
2.2.1. Customer Relationship Management (CRM) Database
2.2.2. Electronic Data Interchange (EDI)
2.2.3. Billing and Verification Services
2.2.4. Internal Reporting and Compliance
2.3. Customer Care Operations
2.3.1. Inbound Call Handling
2.3.2. Outbound Customer Calling
2.3.3. Other Customer Channels

The above functions are described in a narrative, relatively non-technical manner in the appendix "Regional JPA Organizational Model."

## Financing Program Implementation

The 14 cities of the South Bay Clean Power initiative will sell approximately 6,400,000 MWh of electricity and collect approximately $400,000,000 in revenues at full enrollment. That volume would be phased in over time, based on a customer enrollment strategy recommended by the power management contractor.

At full enrollment, South Bay Clean Power will be twice the size of any other CCA in California under implementation to date. With that size comes considerable financial leverage.

Up until now, local governments have typically executed bank loans to fund the design and implementation of their CCA programs. Directing staff and consultants to negotiate bank loans (and preparing the documentation necessary to do so) prior to commencing with most implementation activities imposes delays in the program launch timeline. Additionally, under this approach, local governments have consequently paid and assumed liability for a significant percentage of the expenditures required to launch the CCA.

In contrast, our recommended strategy recognizes that the CCA industry has progressed beyond the stage when local governments had to task staff and consultants to negotiate financing for program implementation.

As the number of CCA programs in California has grown, many of the activities associated with the launch process become increasingly routine over time. In other words, activities that originally required sizable consulting fees and staff time to "think through" are now widely known and may be duplicated at marginal cost.

The CCA implementation process is now so well understood and manageable that expert contractors are willing to work at-risk to complete all necessary implementation activities and provide or arrange for any necessary financing. In short, a well-designed competitive solicitation for services should substantially minimize the upfront expense of launching a CCA program while lowering costs overall.

Our recommended strategy for South Bay Clean Power, modeled on the success of the Redwood Coast Energy Authority, therefore proposes to:

- Outsource almost all the design and implementation costs to contractors operating at-risk;
- Rely on contractors to propose innovative financing solutions that reduce costs and financial liabilities for the local governments involved;
- Minimize staff and overhead costs until the CCA launches successfully and begins generating positive cash flow.

This chapter first narrates the different CCA program implementation phases and cost drivers, summarizes case studies for five different CCAs operating or under implementation (Sonoma Clean Power, Peninsula Clean Energy, Silicon Valley Clean Power, the County of Los Angeles and the Redwood Coast Energy Authority), contrasts the lessons learned from these case studies (detailing the Redwood Coast Energy Authority in particular), and concludes by summarizing our recommended financing strategy for South Bay Clean Power.

## Program Phases & Cost Drivers

As general context for this chapter, the magnitude, purpose and the timing of necessary expenditures aligns with the following three phases:

### *Design Phase*

Costs during the **design phase** are limited to staff and contractor expenses required to produce and review a Technical Study (or "feasibility study", forecasting the performance of the CCA) and to conduct internal meetings as well as general public outreach and education activities.

### *Implementation Phase*

As the CCA moves into the **implementation phase**, it requires capital and/or credit support for staff and contractor costs, bonds required by regulation, and deposits required to purchase power in advance.

In preparing to launch operations, the CCA will also require additional "working capital" sufficient to pay for expenses (staffing, service fees and power) during the initial "cash conversion cycle". This "cash conversion cycle" refers to the standard two-to-three-month lag time in the billing cycle between a) when operations commence and power (paid for by the CCA) is delivered to customers, and b) when customer bills are sent out, collected and deposited into the CCA's account by SCE. The bulk of the financing for this phase is related to the credit and capital required for power purchases, the volume of which depends upon the portion of the CCA's customer base that is enrolled during the initial implementation period (as opposed to phased in over subsequent months).

To strengthen oversight over power financing, all CCAs to date have employed a mechanism we describe in detail in the appendix "Waterfall Mechanism (Lockbox)". This cash flow waterfall is a restricted bank account that relies on a neutral third-party financial institution (the "Collateral Agent" or "Collateral Trustee") to control CCA revenues after launch such that:

1) Minimum reserves are maintained per executed financing and power supply agreements; and
2) Seniority is honored in the disbursement of funds and in the event of default.

This mechanism provides the maximum level of assurance to the CCA's power suppliers and power management contractor that the CCAs financial obligations for power transactions will be managed strictly in accordance with agreed-upon contracts. In so doing, it lowers the counterparty default risk premium that might otherwise be associated with the CCA and minimizes collateral guarantees and margin call financing for power market transactions.

Granting financial counterparties a lien on these restricted-account funds has also been used in lieu of collateral for several CCAs, to minimize General Fund liability for CCA power financing requirements (such that repayment guarantees are tied to the CCA's future revenues rather than guaranteed by local governments).

### *Operational Phase*

After the CCA is in the **operational phase**, customer rates are then set above costs on an annual basis, at a level that allows the program to not only cover its regular expenses but to additionally accrue a multi-million-dollar reserve fund. Accruing a reserve fund allows the CCA to:

1) Minimize or entirely avoid future financing costs (i.e. the CCA can self-supply additional capital required as the program grows to full enrollment);
2) Stabilize rates in response to market prices swings;
3) Diversify its power supply portfolio.

These activities form the foundation of long-term risk management for a CCA, and thus ensure the stability of the program.

It is also important to note that project developers require a long-term power purchase agreement to be able to finance new renewables. This means that the CCA must be perceived as a stable off-taker of the power for the subsequent 20-year period. Therefore, without a reserve fund, the CCA will not be able to contract for the construction of new renewable resources.

After commencing operations, expanding staff and building up a reserve fund, CCAs to date have been able to negotiate further loans and credit support (lines and letters of credit) without requiring General Fund guarantees and based solely on future revenue forecasts. These mechanisms are used to lower financial costs (as in Sonoma's example below) and manage other, additional financial requirements during operations.

## Community Choice Case Studies

Almost all local governments to date have funded their CCA implementation through a combination of municipal contributions, grants and commercial bank loans negotiated by staff and consultants over the course of several months. A portion of these commercial loans typically must be backed by the local governments, in the form of a guarantee or by depositing funds into an escrow account (to be drawn upon in the event of nonpayment).

This financing strategy was used for Sonoma Clean Power, Peninsula Clean Energy and Silicon Valley Clean Power and also proposed for the County of Los Angeles.

The Redwood Coast Energy Authority in Humboldt County implemented a different financing strategy, which outsourced most of the initial design and implementation expense to contractors (through an innovative at-risk performance contracting strategy) and funded power purchases using a 'credit sleeve' mechanism provided by its power management contractor.

### *Sonoma Clean Power*

Sonoma Clean Power completed its feasibility study in October of 2011 and launched in May of 2014. The CCA supplies approximately 2,000,000 MWh of electricity (less than one-third the size of a potential South Bay Clean Power CCA). The Sonoma County Water Agency contributed $1,700,000 in total startup funds, including $134,000 for a feasibility study; the CCA subsequently executed two loans with a small commercial bank:

1) An initial $2,500,000 loan (of which $2,000,000 was used) to cover continuing design and implementation activities, including various required deposits and non-power related working capital expenses (paying for staff, consulting and other non-energy expenditures prior to the receipt of customer bill payments) and various required deposits that was secured by a General Fund guarantee; and

2) A subsequent $7,500,000 loan (of which $2,900,000 was used) for power collateral and power-related working capital requirements that did not require a general fund guarantee; instead, this larger loan only required a lien on future program revenues in the event of nonpayment.

In other words, once the Sonoma CCA program was prepared to launch, commercial lenders then considered the CCA's forecasted revenue to be a sufficient guarantee for the loan required to purchase the necessary power for the program. But getting to that stage incurred General Fund exposure in the low millions of dollars.

Once Sonoma Clean Power was operational, the CCA put in place a line of credit and standby letters of credit to minimize financing charges (dropping their cost of collateral from the commercial loan rates of 4% to 6% down to 1%-1.5% instead). Sonoma paid off its bank debt in less than 12 months and began building a substantial reserve fund to offset future collateral requirements (with a reserve of $30,000,000 by the end of year two).

It's important to note that achieving this level of financial performance depends primarily on factors outside of the CCA's direct control (e.g. market prices), and cannot be assumed at the outset of any other CCA's implementation.

### *Peninsula Clean Energy*

Peninsula Clean Energy in San Mateo County is a newly-formed CCA that enrolled their first customers in October 2016. The CCA will supply approximately 2,400,000 MWh of electricity annually to customers at full enrollment.

In February 2015, the County government authorized $300,000 to cover the costs of initial CCA exploratory activities, including allocating $150,000 in May 2015 for a feasibility study. Local governments formed a JPA in March 2016. The county loaned the CCA an additional $2,700,0000 for staff, consulting, marketing and overhead expenses during the design and implementation phases and an additional $6,000,000 to be held in escrow. The latter was used as collateral for a subsequent loan from a large commercial bank of $12,000,000, used to fund initial power and working capital requirements.

The interest rate for the commercial loan was 3.1% plus LIBOR (the London Interbank Offered Rate, which fluctuates and averages ~0.5% in 2016), and the interest rate for the county's loan varied according to reports issued by the County Treasurer.

### *Silicon Valley Clean Energy*

Silicon Valley Clean Energy (SVCE) is currently enrolling customers and will eventually serve 210,000 customers and supply 3,700,000 MWh. Local governments began exploring CCA in December 2014, completed the feasibility study in September 2015, and formed a JPA between November 2015 and February 2016.

The four largest local governments shared the $80,000 expense of a feasibility study and contributed an additional $600,000 for various exploratory costs, and all twelve member governments subsequently contributed $2,000,000 to fund staff and consulting implementation costs (budgeting ~$900,000 for consultants and ~$1,100,000 for staffing and overhead expenses, including agreements executed by the JPA with member cities to provide various administrative, fiscal, community engagement and human resource services).

The CCA then executed a non-revolving line of credit (NRLOC) for $2,000,000 and an $18,000,000 revolving line of credit (LOC) for various deposits as well as power purchases and working capital. The smaller line of credit required a full guarantee from the local governments (proportional to their electricity requirements) while the larger line of credit did not (it only required a lien on future CCA revenues, similar to Sonoma Clean Power). Similar to Peninsula Clean Energy, interest rates charged were competitive and tied to LIBOR. The larger line of credit may also be transitioned to a term loan in future, at Silicon Valley Clean Energy's discretion.

### *The County of Los Angeles*

The County of Los Angeles recently funded a feasibility study with a $300,000 budget allocation in September 2015. The study was published in June of 2016, and forecasted a CCA program serving the unincorporated county territory (~300,000 customer accounts and supplying 2,900,000 MWh, or slightly larger than Peninsula Clean Energy).

The study recommended a startup loan of $10,000,000 to implement the CCA (including $1,200,000 in startup staffing and consulting costs) and commence service for municipal accounts, and a subsequent loan of $42,000,000 for working capital required to expand service to non-municipal accounts in the County unincorporated territory. Interest rates were assumed to be between 4% and 6%.

These financing amounts are significantly higher than CCAs of comparable size have experienced to date; note that:

1) The startup loan amount was comparatively high because initial implementation costs were assumed to be much higher than CCAs to date have experienced, particularly regarding:
   a) Power supply working capital costs, as the analysis did not incorporate the effects of various strategies proven by numerous CCAs to lower power supply financing requirements (such as a cash-flow waterfall mechanism or lengthened payment terms negotiated for power supply contracts);
   b) Utility fees and opt-out mailer costs, as the analysis estimated these at a much higher cost than CCAs to date have experienced. For example, if the CCA were to rely on Southern California Edison to send opt-out mailers to customers (as the study assumes), the charge would be $6.80 per customer for a total of four mailers, and ~$2,100,000 in total for the County's projected ~309,000 customers. However, CCAs to date have preferred to rely on private contractors to do this task because of the cost savings and local control; for example, Silicon Valley Clean Energy is paying a total of $1.60 per customer for four mailers. Had the study used this cost assumption, the total cost would be ~$500,000.
2) The $42,000,000 loan was unusually large because the aforementioned power supply working capital errors were compounded by the fact that the County's first phase of customers (~1,700 municipal accounts only) was a much smaller percentage of the overall customer base (~300,000 customers) than other CCAs to date have enrolled during their first phase of operations.

   By lowering the volume of power sold during this first phase, the CCA would not be able to accrue significant excess revenues — and so would require additional capital, far above what is typically expected, for working capital required to enroll subsequent customers.

For Los Angeles County, total General Fund liabilities or expenses prior to launch were assumed between $31,000,000 to $52,000,0000 (the full amount) in the study, depending on whether or not the County provided all forecasted capital requirements or provided collateral sufficient to cover half of the loan amount.

### *The Redwood Coast Energy Authority*

The Redwood Coast Energy Authority (an existing Joint Powers Authority) of Humboldt County issued an RFP for all necessary services and financing to launch and operate a CCA program in December 2015, selected a team of contractors in March of 2016, produced a feasibility study and Implementation Plan in October 2016, and will commence CCA operations in May of 2017.

The contractors agreed to work at no upfront cost, and to recoup all design and implementation costs after program launch. These costs are tracked and capped at $482,500, and are self-financed by contractors at an interest rate of 5% (charged to the CCA until the balance is repaid, like a loan). Power supply financing is provided through a form of "credit sleeve", charged at a rate of $1 per MWh, and did not require any General Fund guarantees.

For power supply financing, the only collateral being required is for Redwood Coast Energy Authority to build up a reasonable reserve fund after launch on a pre-arranged schedule (which all CCAs need do regardless), and to allow the power management contractor to draw upon this fund and incoming revenues as needed to cover contracted power-related expenditures. Past the point when the CCA's financial reserves are sufficient to provide credit and working capital, the power management contractor is no longer paid a fee to cover these requirements and this expense is eliminated.

Redwood Coast staff devoted approximately 1,000 hours (at an expense of ~$75,000) to the RFP design, solicitation issuance, bid evaluation process and contract negotiation as well as ~$25,000 for legal services.

While all necessary services were offered by the team of contractors, the JPA decided during contract negotiations to take certain tasks in-house, including community outreach and engagement and local government relations. Taking these tasks in-house lowered the contractors' quoted price by approximately $400,000. Additionally, Redwood Coast staff became increasingly involved in supporting power planning and portfolio design — particularly regarding the procurement of local renewables.

Staff expense costs during this implementation period are forecasted to be approximately $600,000 through launch, equivalent to three full-time employees plus supporting staff and expenses. These costs were funded with existing JPA reserves until a county economic development grant fund (the "Headwaters Fund") extended a $700,000 line of credit to the JPA in November 2016.

## Lessons Learned from Community Choice Case Studies

The table below shows the amounts within different categories of financing for the CCAs profiled in the case studies, as well as the funds contributed by local governments, the total expenses and liabilities assumed by local governments, and the overall financial liability assumed by each JPA:

| | | | | Financing | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Load (GWh) | Launch Year | Launch Timeline (months) | Non-Energy Design & Launch Costs | Power Supply & Deposit Financing | Total | Government Direct Expense | Government Expense + Liability | JPA Liability |
| **Sonoma** | 2,000 | 2014 | 36 | $2,400,000 | $4,200,000 | $6,600,000 | $1,700,000 | $3,700,000 | $6,600,000 |
| **Peninsula** | 2,400 | 2017 | 18 | $3,000,000 | $12,000,000 | $15,000,000 | $3,000,000 | $9,000,000 | $15,000,000 |
| **Silicon Valley** | 3,700 | 2017 | 24 | $2,680,000 | $20,000,000 | $22,680,000 | $2,680,000 | $4,680,000 | $22,680,000 |
| **Los Angeles** | 2,900 | n/a | n/a | $2,000,000 | $45,000,000 | $47,000,000 | $22.5MM to $47MM | | |
| **Redwood Coast** | 725 | 2017 | 14 | $1,182,500 | $1/MWh sleeve | n/a | $700,000 | $1,182,500 | n/a |

Prior to contrasting the various CCA case studies, it is important to note that:

1) The Redwood Coast utilized a credit sleeve instead of executing loans to provide power supply financing, which makes a comparison of total financing required difficult or misleading to present in the above table format; consequently, certain fields have been labeled "n/a".

   This is likely not relevant, because South Bay Clean Power is significantly larger than the Redwood Coast Energy Authority and would likely be offered debt products (loans or letters of credit) as the least-cost option (as explained below).

2) The Los Angeles County CCA feasibility study, as previously explained under the case study section, made certain miscalculations in cost assumptions and financing strategies that significantly inflated estimated financing requirements.

   For the sake of comparison in the table above, we have corrected certain errors in design and launch costs (such as lowering the cost of opt-out mailers based on the experience of operating CCAs), and estimated power supply and deposit financing to the best of our ability per the methodology described in the study (as exact figures were not disclosed for these financing requirements in the study).

   Our calibrated projections are slightly lower than what was given by the study, which estimated total financing needs at $52,000,000 and government liability in providing or guaranteeing these funds between $31,000,000 to $52,000,0000 (the full amount).

   Overall, this example is provided for the sake of illustration, and does not adhere to the best practices we recommend for South Bay Clean Power. It is therefore not discussed in the sections below.

### *Comparison of Design & Launch Costs (non-energy)*

Sonoma Clean Power, Peninsula Clean Energy and Silicon Valley Clean Energy each incurred comparable expenses during the design and implementation phase, which lasted between 18 and 36 months for the CCAs (from initial contracting for technical services — i.e. a feasibility study — through program launch).

The Redwood Coast Energy Authority, in contrast, will take only 14 months (the CCA launches in May 2017) and will do so at lower cost and financial exposure for its local governments. What their experience proved was that by inducing competition for all the services required to launch a CCA — by issuing a single, transparent RFP — and by requiring contractors to delay receiving payment until after the CCA launches successfully, expert contractors can launch a CCA faster and at lower cost compared to the standard implementation approach used by all other CCAs to date.

Moreover, as detailed under the sections "Expanded Energy Risk Management Capabilities" *and* "Contracting for Superior Energy Risk Management Services" earlier in this report, the Redwood Coast Energy Authority is deploying a CCA with more sophisticated capabilities compared to any CCA to date, particularly in regards to energy risk management services. Fundamentally, this approach will ensure that the CCA is more fiscally stable, and able to maintain competitive rates while satisfying financial obligations and local policy objectives.

Further details regarding how the Redwood Coast Energy Authority has successfully lowered startup costs while accelerating its launch timeline are provided below:

### The Redwood Coast Energy Authority

Humboldt's team of expert contractors assumed responsibility for the majority of the CCA's design and implementation costs, with Redwood Coast Energy Authority's CCA staff opting to conduct public outreach, local government relations, and some power planning — particularly to support local renewable efforts.

Most significantly, the contractors also agreed to delay repayment for their expenses until after the CCA program launches successfully. Contractors agreed to self-finance their implementation activities to launch the CCA at a rate of 5%, to be repaid over the first two years of program operations. This absolved the local government from funding consultants and devoting staff time to negotiating design and implementation financing, and removed the delay this would have imposed from the program implementation timeline.

Additionally, the total deferred implementation service fees during this period amount to $482,500 — which is less than half of what the County of Los Angeles' feasibility study forecast in consulting fees alone, and significantly lower than what the other CCAs profiled in the case studies paid for comparable services.

As detailed under the section "At-Risk Contracting" in this report, the Redwood Coast Energy Authority has no financial liability until after it approves the contractors' CCA feasibility study. If the JPA were to cancel the contract after this point, it would only liable for contractors' expenses incurred up until that date (capped at the $482,500 amount).

Up until the Humboldt CCA's effort, only data management and call center operations had been provided to CCAs under at-risk contracts. The Redwood Coast Energy Authority recognized that the market had matured to the point where they were able to extend at-risk contracts as a requirement on all other aspects of implementation.

This "Outsourcing Risk" strategy essentially transfers a portion of the financial risk from the local government to its contractors during a crucial period of development, and allows competition and innovation to dramatically minimize costs.

Doing so also provides a strong price signal that motivates contractors to accelerate the program implementation timeline (because the contractors are not paid until after program launch), in contrast to the strategy under which local governments task staff and pay consultants out of pocket for implementation activities over a comparatively protracted timeline. This strategy is both appropriate and optimal, as the contractors 1) have a more expert understanding of the financial risks and tasks involved in launching a CCA and 2) can use their expertise to streamline those tasks (lowering costs and accelerating the launch timeline) while mitigating any additional sources of risk.

Accelerating the launch timeline in and of itself is impressive, but it is particularly important when the potential net revenues the CCA could be accruing are considered. Put another way, each month that the CCA does not launch means a month of foregone net revenues, which can represent a considerable amount of funding.

#### *Best Practices for South Bay Clean Power*

We recommend the Redwood Coast Energy Authority's contracting approach for South Bay Clean Power (with some modifications for best practices and lessons learned). Doing so is the most powerful mechanism local governments have available to them to minimize startup costs, avoid separate processes to negotiate financing, accelerate the implementation timeline, lower financial liabilities for local governments, and deploy a model of CCA with sophisticated energy risk management capabilities.

Much of the remainder of the report is devoted to explaining how to do implement this approach: the chapter "Contracting for Services" and appendix "Best Practices in RFP Design" provide a practical step-by-step process manual on how to do so.

### *Comparison of Power Supply & Deposit Financing*

Note that Sonoma Clean Power required a significantly lower amount of financing for power supplies, but this is because the CCA chose to phase in its customer base relatively slowly, which lowered its initial power supply financing requirements and liabilities. This reflects the early stage of the industry (Sonoma launched in 2014) and the CCA's subsequently cautious approach to implementing the program. This facet of the case study is not relevant for South Bay Clean Power.

In the sections below, we first describe the Redwood Coast Energy Authority's financing mechanism (which, in contrast to their implementation and contracting strategy, is likely of limited use for South Bay Clean Power) before contrasting and drawing lessons-learned from the remaining case studies.

#### The Redwood Coast Energy Authority

The Redwood Coast Energy Authority employed a unique approach to financing deposits and power requirements as compared to all CCAs to date. The program's power management contractor offered the CCA full credit and working capital support at a rate of $1.00 per MWh (a form of "credit sleeve"), and did not require any General Fund guarantees to do so. The only collateral being required is for Redwood Coast Energy Authority to build up a reasonable reserve fund on a pre-arranged schedule (which all CCAs need do regardless), and to allow the power management contractor to draw upon this fund and incoming revenues as needed to cover contracted power-related expenditures.

Past the point when the CCA's financial reserves are sufficient to provide credit and working capital, the power management contractor is no longer paid a fee to cover these requirements and this expense is eliminated.

At first glance, the financing terms that Humboldt committed to were more costly than debt-financing options. For example, the CCA's total annual power costs are approximately $40 million to purchase ~725,000 MWh of electricity. Collateral and working capital requirements may be estimated at approximately $10 million for the sake of this example. A loan in this amount at a 5% interest rate to cover his amount would cost $500,000 in interest payments annually. A $1/MWh financing charge would cost $725,000 over the same period — or an additional $225,000. (For the sake of simplicity in this example, we ignore the decrease in financing charges from paying down the loan or self-supplying collateral under either mechanism.)

However, the Redwood Coast Energy Authority is utilizing this financing product to phase in all of the CCA's customers at launch. This contrasts with how CCAs to date have structured their phase-in of customers — by enrolling approximately a third to half of their customer base initially, and then growing to full enrollment over the course of one to two years. Partially, this is done to lower the perceived risk profile for financiers that have loaned the CCA funds. Using debt financing to enroll all customers at launch would likely require the local governments (not just the JPA) to guarantee all or part of the loan.

The advantage to phasing in all customers at launch is that it doubles or triples power supply revenues for the CCA at launch as compared to phasing in customers. The program charges more than its costs in order to accrue a reserve fund. Therefore, Humboldt's CCA is doubling or tripling its net revenues during this first year. In so doing, the CCA will accrue approximately $4 million in net revenues (which is a conservative estimate).

In other words, Humboldt's $1/ MWh financing option may cost an additional $225,000 for the first year, but in exchange the CCA is making an additional $2 million to $2.6 million (or more) — critically, without requiring local governments assuming any financial risk in the transaction.

All else being equal, as compared to a CCA financed using debt and a slower customer phase-in strategy, Humboldt's CCA will more rapidly accrue net revenues and be able to self-supply the required financing (either through reserve funds or by executing relatively low-cost lines of credit after program launch).

### *Best Practices for South Bay Clean Power*

South Bay Clean Power is nine times the size of the Redwood Coast Energy Authority. The form of financial product detailed above (the "credit sleeve") may not be offered for a CCA of this size, or may be offered at a greater expense.

Regardless, debt financing may be the most cost-effective option, considering that South Bay Clean Power will likely phase-in its customer base over time because of its size and the need to coordinate with Southern California Edison to manage the transition to CCA service (as previously touched upon in the section "Enabling Coordination between Southern California Edison & Community Choice" and explained in detail in the section below "Power Supply Financing Strategy").

However, it is worth noting that the Redwood Coast Energy Authority was also offered debt products by other power management contractors during the solicitation process. We have

incorporated this insight into our recommended contracting process and RFP design for South Bay Clean Power.

The types of power management companies that responded to the Redwood Coast Energy Authority's RFP have a proven and quantifiable track-record managing financial risk in power planning and operations. These companies transact hundreds of millions to billions of dollars of energy purchases each year. Consequently, these contractors enjoy long-standing relationships with established financial counterparties that understand and operate within the energy sector (e.g. cooperative banks, investment banks, power suppliers that offer financial products, public power entities with excess reserves, et cetera).

These relationships represent a substantial expansion for CCAs in terms of access to capital, which to date has only been offered by four to five commercial banks with varying levels of power sector expertise. Humboldt's approach allowed power management contractors to provide innovative financial solutions, negotiated in a streamlined and competitive fashion on the CCA's behalf.

While the financial product chosen by the Redwood Coast Energy Authority may not prove to be appropriate or ideal for South Bay Clean Power, we recommend that South Bay Clean Power take advantage of the approach pioneered by the Redwood Coast Energy Authority to work with best-in-class power industry contractors. Doing so will streamline the process and present the CCA with multiple financing options from which to choose.

### Sonoma Clean Power, Peninsula Clean Energy & Silicon Valley Clean Energy

Peninsula Clean Energy and Silicon Valley Clean Energy incurred comparable power supply financing requirements (when the difference in their respective sizes is taken into consideration). However, Silicon Valley limited local government guarantees for power supply financing to $2,000,000 as compared to Peninsula's $6,000,000 — despite the fact that Peninsula is two-thirds the size of Silicon Valley.

Similarly, Sonoma Clean Power successfully precluded any local government financial guarantees for the power supply portion of financing requirements. Repayment guarantees were limited to a lien on expected future program revenues through the JPA.

Silicon Valley Clean Energy issued an RFP for banking services and financing relatively late in its implementation process, in December 2016, after significant work had been conducted to commence negotiations with power suppliers and structure the CCA's portfolio. In other words, the financiers evaluating the solicitation opportunity could clearly understand the CCA's governance and managerial structure, the experience of staff and contractors involved, and the program's approach to managing energy related price risks.

#### *Best Practices for South Bay Clean Power*

The overall lesson-learned is that once a CCA has been competently designed and is preparing to launch, commercial lenders consider the CCA's forecasted revenue to be a sufficient guarantee for the loan required to purchase the necessary power for the program. We apply this insight to our recommendations for South Bay Clean Power.

## South Bay Clean Power Financing Strategy

Our recommended financing strategy combines the Redwood Coast Energy Authority's contracting approach (of issuing a single RFP for services to minimize and outsource implementation costs to contractors) with Silicon Valley's strategy of negotiating power supply financing later during the implementation process to yield competitive financing that requires minimal to no guarantees from local governments.

### *Design & Launch Costs Financing Strategy*

In adopting the approach pioneered by the Redwood Coast Energy Authority — in issuing a single RFP for all necessary services — the local governments involved with launching South Bay Clean Power will limit their financial liabilities and expenses to:

- Direct staff and legal costs associated with JPA formation and RFP issuance, bid evaluation and contract negotiations, and for overseeing implementation activities;
- Liability for contractor expenses during implementation, beginning only after the point in time when local governments have accepted the CCA Technical Study produced during the design phase (from that point on, implementation costs are tracked and either repaid as a lump-sum if the contract is canceled by the JPA prior to program launch, or otherwise repaid in regular installments over the course of the first few years of operations);

Contractors will be relied upon to self-provide financing required for all other activities and requirements associated with their respective scope of work.

Note that power supply financing, as detailed in the next section, will be negotiated by the CCA's chosen power management contractor later during the implementation process. This portion of financing should require little, if any, guarantee from local governments.

#### Direct Costs for South Bay Clean Power Member Governments

Direct staff and legal costs could be funded by the member governments of South Bay Clean Power directly. Alternatively, the RFP for services could request a nominal line of credit to fund these expenses — though given the early stage of implementation, this would require a guarantee from local governments. Additionally, loans may be available through labor unions that support the CCA effort, and if the County of Los Angeles joins South Bay Clean Power in forming the Regional JPA, the county has indicated that it could provide significant funding to cover or partially guarantee any initial financing requirements.

As detailed under the section "Initial Hiring and Staffing Plan", South Bay Clean Power's staffing requirements during the implementation phase are limited to an Executive Director, plus legal support for contract negotiations (for contractor services, not power supplies, which may be provided by existing counsel). If the Regional JPA approach is adopted, additional staff is limited to a General Manager and Assistant General Manager for Regulatory and Policy Affairs (who is hired later in the implementation process). South Bay Clean Power's member governments would be expected to fund these positions proportionally with any other CCAs that joined the Regional JPA.

By employing only senior staff in contractor and planning oversight as well as government relation roles, this initial staffing strategy is more limited than the Redwood Coast Energy Authority (the staff of which also provided significant public outreach). However, as previously mentioned under

that CCA's case study, contractors were willing to provide all necessary services to launch the CCA for additional fees (which were competitively priced) if staff were not available to do so.

South Bay Clean Power as a standalone CCA or as a member of the Regional JPA could also elect to employ further staff, if funding or financing is available, and to decrease the scope of work requested of contractors during the implementation phase (as the Redwood Coast Energy Authority has done).

### *Power Supply Financing Strategy*

South Bay Clean Power is unique in being the largest CCA under implementation to date in California — and if the Regional JPA governance model is employed, total load served under CCA throughout the Los Angeles region will eventually assume responsibility for one-third of Southern California Edison's load. Community Choice programs to date have accounted for a much smaller percentage of utility load. This has an important impact on our recommended financing strategy for South Bay Clean Power.

Whether the Regional JPA approach is employed or South Bay Clean Power launches as a standalone CCA, this scale of transition to CCA service necessitates close collaboration with SCE to manage effectively. As previously detailed under the section "Enabling Coordination between Southern California Edison & Community Choice", SCE has entered into numerous power-supply contracts on behalf of the customers that will be enrolled in the CCA. At this scale, the manner in which South Bay Clean Power's initial power procurement is structured requires incorporating the energy and financial impact of many of these contracts, particularly for renewable resources that supply the CCA's future customers (or are currently under construction to do so).

In terms of the financing process and timeline, this requires South Bay Clean Power to first hire a power management contractor in advance of structuring financing for power supplies, in order to:

1) Create a customer phase-in schedule appropriate to this scale of transition;
2) Work collaboratively with Southern California Edison (under confidentiality) to structure the CCA's remaining power portfolio.

In other words, no contractor will be able to accurately assess South Bay Clean Power's power supply or financing requirements (or propose financing) prior to this point in time during the implementation process.

The implementation and contracting approach pioneered by the Redwood Coast Energy Authority is uniquely suited to this task. That CCA, in contrast to all others, has hired a power management contractor with the requisite capabilities to coordinate with SCE in this manner.

This approach should also result in the lowest cost power financing for South Bay Clean Power with the minimum financial liability for local governments. The energy products transferred from SCE to the CCA will in fact lower the CCA's remaining power obligations. Additionally, power management contractors like the one hired by the Redwood Coast Energy Authority routinely tailor and minimize financing requirements through negotiations with power suppliers and directly with power plants. Strategies employed include negotiating delayed payment terms with suppliers (to more closely align payment cycles with when CCA customer revenues are received), to minimize required collateral deposits by inducing competition amongst suppliers, and to utilize a secured revenue account (a "waterfall" mechanism). Each supplier and power plant can have different credit requirements and risk profiles, and expert negotiation is the key to minimizing overall collateral

requirements for the CCA while structuring a diversified portfolio. This is a necessity for a CCA the size of South Bay Clean Power, as previously detailed under the section "Expanded Energy Risk Management Capabilities" in the Executive Summary chapter.

Similarly to how Silicon Valley Clean Energy waited until their CCA's implementation was well underway and had commenced negotiations with suppliers to arrange power financing and banking services, this approach will allow prospective financiers full insight into the structure and competence of the CCA prior to offering power financing and to structure appropriate financial mechanisms and banking services (as detailed in the appendix "Waterfall Mechanism (Lockbox)").

An additional advantage to hiring the type of power management contractor recommended in this report is that these contractors can leverage their existing relationships with a variety of financiers and knowledge of the power industry to structure innovative financing options on an expeditious timeline for South Bay Clean Power. By incorporating this task into the contractors' at-risk scope of work, the contractor will be fully incentivized to structure financing acceptable to South Bay Clean Power on an expeditious timeline with minimal, if any, delay to the program launch timeline.

South Bay Clean Power will likely be presented with several types of power financing options, including but not limited to:

1) One similar to the option selected by the Redwood Coast Energy Authority, as described above.
2) Debt-financing, sufficient to cover customer enrollment on an appropriate (preferably, expedited) enrollment schedule, that only requires the JPA to guarantee the loan (by providing a lien on future CCA revenues). This may be the most cost-effective and desirable option.
3) Debt financing options that may require local governments (and not just the JPA) to guarantee a portion of the financing required as security in addition to a lien on expected future program revenues. We note this here as an option that some bid respondents may propose, though Sonoma Clean Power was not required to do so, and the local governments that comprise Silicon Valley Power secured $20 million of financing and only guaranteed a $2 million portion. In this event, the local governments that comprise South Bay Clean Power would evaluate this option on its merits and overall cost, and would not assume any financial liability until late in the implementation stage (when such financing would be required for JPA-approved power purchases).

Required guarantees for this portion of the financing will likely be limited to a lien on expected future revenues from the CCA (i.e. the JPA itself will be liable for repayment, but not the local government members of the JPA).

The best power supply financing option must be evaluated in the context of whether the financing terms expose local governments to financial risk, what the profile of that risk is (which the power management contractor will advise on), how quickly all customers may be enrolled (to increase net revenues, which far outweighs any additional financing charges), and what the overall cost of the financing is in these scenarios.

## Contracting for Services

The most important stage in the development of a CCA is how local governments structure and manage the solicitation process and subsequent contract negotiations for the services required to launch and operate the program. The process is complex, has a relatively short timeline, requires expert judgement and coordination to manage effectively, and determines the contractual relationship with various contractors to provide necessary services for a period of years. In other words, this process largely determines the capabilities of the program and timeline by which the CCA can change course or assign certain responsibilities to CCA staff.

This section starts off with "Key Concepts & Enhancements", to provide the high-level context for the subsequent section "Competitive Solicitation Process", which details in a narrative fashion each of the following sequential activities:

1) Drafting of a request for proposals (RFP for services) and accompanying documentation;
2) Issuance of the RFP and advertisement of solicitation opportunity;
3) Informational webinar;
4) Written questions and answers (Q&A) process;
5) Internal committee bid review process;
6) Announcement of short-listed bidders;
7) Interviews with short-listed bidders;
8) Announcement of award;
9) Partnering process;
10) Contract negotiation and contract execution.

Lastly, there are a number of best-practices that should be taken into account in the first step listed above (designing the RFP). We have summarized this material in our technical appendix "Best Practices in RFP Design".

Significant opportunities now exist for improving and streamlining current practices. Based on our existing industry expertise and extensive interviews we have conducted with CCA staff, stakeholders and contractors involved in recent solicitations, we have defined the following best practices to ensure the solicitation is transparent, fair and ultimately results in the most competitive proposals.

The key goals of these best practices are to:

1) Contract for services that match or exceed those of Southern California Edison for comparable operations;
2) Use at-risk and performance-based contracting mechanisms to implement the program at no upfront cost to local governments on an accelerated timeline, and align contractor performance with remuneration throughout program operations;
3) Induce a greater number of qualified companies to bid to supply services;
4) Clarify stages of the review process and enhance its overall effectiveness in selecting the best contractors;

5) Ensure that the structure of the contracts anticipate and actively support the growth of the CCA agency's staff capabilities and increasing responsibilities over time.

These best practices are designed to significantly improve the competitive solicitation process, and to enhance the resulting contractual relationships such that contractors' financial incentives are aligned with an expedited and cost-effective program launch, and support the CCA's subsequent growth in terms of expert staffing, capacity and overall capabilities.

## Key Concepts & Enhancements

Certain best practices require some explication and case studies to convey fully; this section details three such key concepts that are either unintuitive (the section "Enabling Supplier Diversity") or complex (the sections "Contracting for Self-Management Power Capabilities" and "Including At-Risk and Performance-Based Contracting").

Our other recommendations are intended to be self-explanatory or require a minimum of explication. These are included in the subsequent section "Competitive Solicitation Process" that details each stage in the competitive solicitation process as well as in the appendix "Best Practices in RFP Design".

### *Enabling Supplier Diversity*

Most of the services that we will be requesting, and in fact all the CCA's core services, are not specific and unique to the CCA market. Consequently, the solicitation for services should not give undue and unwise preference to bidders because of their direct experience with serving only CCAs.

We have found this to be among the most powerful and advantageous best practices to apply for South Bay Clean Power moving forward, because favoring only bidders that have previously served CCAs, while seemingly prudent, unfairly disadvantages companies that are otherwise demonstrably qualified and credentialed — and consequently harms the development of a true competitive market for expert services in our industry.

Recent experience is instructive. Two RFPs for CCA services that were released in 2016 (for Alameda County and the City of Davis) didn't just give preference to bidders with CCA experience, they further mandated that all respondents must have such experience for certain tasks to be considered at all. Both governments subsequently had to issue amendments to this language removing the requirement (i.e. after companies had begun to prepare their bids), when it was pointed out that this would effectively preclude all but a handful of firms from submitting proposals.

Several notable firms decided not to participate in these solicitations, as they rightly perceived that it precludes competition by arbitrarily limiting capable companies from entering the CCA market. South Bay Clean Power does not want to risk reducing the potential scope and expertise of services offered to the CCA, or suffer from higher costs as a result.

It may seem counterintuitive that CCA-specific qualifications may not be a strong indicator of the bidders' overall capabilities. We include details from several examples below to help clarify this issue:

1) While there are facets of regulation and business processes that are specific for CCAs in areas such as data management and call center operations, and in reporting requirements for power portfolio management, these are minor and somewhat trivial considerations when compared to

the overall scope of services. These CCA-specific aspects of service are well-understood and can be confirmed and implemented significantly in advance of program launch, in coordination with regulators and utility staff. Thus, comparable experience in providing similar services to other load serving entities (such as utilities, cooperatives and energy service providers) should be considered as equivalent to having CCA-specific qualifications.

2) The drafting of an Implementation Plan for CCA service is a relatively straight-forward task. The requirements of the document are well established in law and regulation, staff at the CPUC and other CCAs are readily available for reference, and there are numerous similar documents from established CCAs to use as templates. Thus, bidders who have previously prepared CCA Implementation Plans should be given no significant scoring advantage over qualified firms that have conducted similar energy planning and regulatory engagement exercises in the broader utility industry.

3) The energy and financial modeling at the core of CCA "feasibility" or "technical" studies is referred to as "cost of service" modeling in the broader industry. The methodologies and software typically employed in such studies are well established and widely accepted. In fact, many of the models prepared to date for CCA programs in California have not adhered to these methodologies, and consequently have not been very accurate or replicable. Thus, in favoring bidders that have previously produced CCA feasibility studies over companies that have prepared true cost of service models for utilities and other load serving entities, the CCA industry to date has not had the benefit of more reliable information and has dissuaded more qualified companies from entering the market.

### *Contracting for Self-Management Power Capabilities*

RFPs issued for CCA services to date have not to this point provided a level of detail for power services as compared to similar solicitations issued by municipal utilities or cooperatives. South Bay Clean Power's RFP will provide that level of detail.

Requested services should include, for example:

- Power portfolio modeling and strategy;
- Short-to-long-term load forecasting;
- Origination;
- Contract management;
- Trading controls;
- Asset modeling & optimization;
- Fuel strategy & management;
- Management of congestion revenue rights, scheduling and settlements;
- Various capabilities related to the integration of DER;
- Associated advisory and regulatory services (such as regulatory reporting, counterparty credit and credit assurance monitoring, regulatory and market monitoring, price modeling, development of risk policies, procedures and practices, et cetera).

Fortunately, these services are typically provided by a single contractor as an integrated service, and do not all have to be requested separately.

To date however, most of these services are not specifically requested by other CCAs and as a result, we have observed CCAs to date experiencing significant challenges in having to devise and implement appropriate business processes to integrate various processes and 'fill gaps' on an ad-hoc basis. Those operational and management challenges can be avoided entirely by deploying a comprehensive and integrated set of power services at launch.

From a process perspective, we believe the reason why no CCA to date has deployed all the above services as we intend to is because local governments have hired a consultant to conduct a CCA Feasibility Study as an initial first step. The consultants design the CCA as part of this feasibility process.

Following the consultants' recommendations, the local government then continues to employ the consultants to provide power planning and procurement services for the CCA, and then contracts with a primary energy supplier (a process the consultant also oversees) to provide both electricity and a limited set of power operation services.

In other words, in contrast with the best practices of public power industry, CCA implementations to date have followed design recommendations that 1) do not include a full range of utility-grade power services and 2) have bifurcated the limited set of included power services between two or more separate contractors. The CCAs subsequently hire staff and expand their internal operational and planning capabilities gradually, over a period of years.

Likewise, diligence in reviewing proposals for critical services to date have not taken advantage of industry-standard best practices as South Bay Clean Power can now do.

For example, evaluating the software and methodologies that underlie key forecasting exercises have never been part of the bid review process. In fact, this will be a key focus for South Bay Clean Power, given the importance (and potential financial impact) of exercises like forecasting electricity usage patterns and volumes, constructing portfolios power contracts, and estimating the risk of financial performance over a variety of changing market conditions (which is what allows the CCA to set rates accurately to adequately cover future conditions).

The methodologies and software used in exercises like these should meet certain industry standards for transparency, commercial-acceptance and widespread use. South Bay Clean Power will include these standards in the CCA RFPs and bid review processes. We seek to avoid the practice of other CCAs to date who employ a variety of non-standard models — none of which are transparent, none of which are used by other utilities or cooperatives, and the accuracy of which have not been tested over a variety of market conditions.

### *Including At-Risk and Performance-Based Contracting*

Two of the most powerful tools available to South Bay Clean Power are at-risk and performance-based contracting. These terms refer to several contracting structures and strategies applicable to the CCA and all others in development. In general:

- **At-risk contracting** requires contractors to perform work "at risk" in advance of program launch, and delays payment for their services until after the program is operational and generating cashflow (and subsequently spreads repayment out over a period of months or years);

- **Performance-based contracting** refers to two practices: 1) performance-based service contracting (PBSC) under which contractors are only paid after achieving certain goals or 2) performance fees, under which contractors are paid on a fixed fee or volumetric basis while a) imposing certain benchmarks and metrics for contractors to meet or exceed in the provision of their services and b) imposing penalties or bonuses based on failing, meeting or exceeding these metrics.

Both mechanisms are designed to financially incentivize contractors to perform their services to the best of their abilities, by shifting the financial risk of under-performance from the government to the contractors – either completely (under at-risk contracts) or in part (under performance-based contracts). Doing so ensures that the party with the capabilities to best understand, manage and mitigate factors of risk is fully incentivized to do so in a timely and proactive manner.

When designing and implementing these contracting strategies, it is critical that our governments don't seek to shift financial risks to our contracting counterparties in a manner that is unfair or exceeds the contractors' tolerance for financial risk. Doing so will likely cause most best-in-class companies to avoid the solicitation process. To attract the best candidates, we must appreciate the necessity of understanding the perspective of potential contractors' commercial positions, practices and professional partnerships.

### At-Risk Contracting

In the context of launching a new CCA program at no upfront cost to local governments, at-risk contracting involves some contractors who will invest significant resources to perform critical startup services commencing up to a year in advance of program launch. It also engages other contractors that will only need to perform a minimal amount of upfront services in support of the CCA launch effort. These implementation activities will occur in well-defined sequential phases. This distinction is important to understand and communicate clearly because the companies in the latter category will:

1) Likely not have a comprehensive understanding of how a CCA program launches, and their acceptance of these terms will consequently be predicated on understanding that the contractors hired to perform the bulk of implementation work are 1) highly qualified and 2) financially motivated under at-risk contracts to complete their work on schedule.
2) May only have to work at-risk several months in advance of program launch (at which point, the risk of the program not launching is minimal); these companies may not be willing to forgo payment for a full year, but would be amenable to a shorter delay in remuneration if they clearly understand how their activities fit into the overall program implementation timeline.

In anticipation of these dynamics, our competitive solicitation documents must clearly communicate the program implementation timeline and the responsibilities and discrete tasks of staff and contractors involved. This allows each contractor to understand where they fit in to our overall process, the counterparties with which they will coordinate, and at what points they are expected to commit resources at-risk.

The next four subsections detail how core and support services should be delineated, various considerations therein, and case studies detailing relevant best practices from the Redwood Coast Energy Authority.

### *At-Risk Contracting for Critical Services*

These three services comprise the bulk of commercial activity required to design and launch a CCA program:

- Power management;
- Data management;
- Customer care (primarily, call center operations).

Data management and customer care services have always been implemented for CCAs on an at-risk basis, and need no further explication here. However, performance based contracting for power services has only been implemented by the Redwood Coast Energy Authority to date, and the contracting process revealed that it is necessary to make explicit:

1) The level of commitment to CCA on the part of local governments;
2) Any "off-ramps" or conditions that would cause the local government to decide not to launch the CCA;
3) Remuneration for the contractor in this event.

Contractors that supply these core services will understandably only operate at-risk during the program implementation phase if these parameters are clearly defined and reasonable.

### *The Redwood Coast Energy Authority — Phased Approach & Off-Ramp Provisions for Power Services*

The Redwood Coast Energy Authority provides a useful template to follow in this regard. Their power services provider was tasked with providing services during three consecutive phases, each with the following agreements regarding cost liabilities:

1) **Planning:** this first phase covers initial preparatory activities and produces a Technical Study forecasting the CCA's cost of service and comparing the rates and portfolio content to the incumbent utility. The contract could be terminated up to 30 days after submission of this report with no financial liability.
2) **Implementation:** during which the contractor would commence various implementation activities; if the contract were terminated during this time by the local government, the contractor would be owed either a fixed fee or a reimbursement of recorded hours (per a defined billing rate table) depending on various factors.
3) **Operations:** past the point at which power is procured and program operations commence, the contract would not be able to be terminated prior to its term length except under explicit conditions of default; costs incurred by the contractor for the implementation phases will be recouped on an agreed-upon schedule over the life of the contract.

Each successive contract phase provided the Redwood Coast Energy Authority with off-ramp provisions to ensure that the program could be terminated at no cost or at a nominal cost, while incentivizing the contractor to assume responsibility for various costs and risks that it could manage with a high degree of competence. The end result was a contract structure that yielded the least-cost and most accelerated approach to implementing a CCA, with highly transparent fee schedules and timelines and an overall level of sophistication in services that serves as the model for South Bay Clean Power and exceeds those of other CCA programs to date.

### *At-Risk Contracting for Support Services*

These services comprise support activities that either represent a much lower commitment of time and resources, and/or which only commence shortly prior to program launch:

- Accounting;
- Marketing & outreach;
- DER services;
- Integrated Resource Planning;
- Regulatory and legislative intelligence;
- Legal advice and regulatory engagement;
- Lobbying.

Contractors that provide these services will need to understand at which stage of the implementation process and at what level they are expected to commit resources.

For example, Integrated Resource Planning services would commence toward the latter stages of implementation, when South Bay Clean Power's initial power has been procured and the CCA's launch date is set. We understand that this long-term planning process typically involves significant staff and stakeholder input over a period of months, and is separate from the shorter-term forecasting exercises used to procure the initial power necessary to launch the CCA. Practically speaking, the Integrated Resource Planning services contractor will judge the risk of non-payment (from program termination prior to launch) to be mitigated, and will essentially only be expected to delay payment for their initial services for a matter of months.

Services like accounting, or marketing and outreach, will commence at an earlier date, but after the initial phase when the local governments have accepted the results of the Technical Study and have demonstrated a strong commitment to proceeding with program implementation activities.

A key dynamic here is that these contractors are relying upon the assumption that the local government and contractors providing core services are firmly committed and properly motivated to launch the CCA and to do so on schedule. It is therefore critical for us to hire accomplished providers for core services and provide sufficient contextual information during the competitive solicitation and subsequent contract negotiations. Doing so allows contractors providing support services to make an informed judgement on whether to commit resources at-risk.

### *The Redwood Coast Energy Authority —Contract Term Length for At-Risk Cost Recovery*

The Redwood Coast Energy Authority executed three separate contracts for services, each covering:

1) Power management and related services;
2) Data management and call center services;
3) Various support services, including advising on formation activities, program management, marketing and outreach, and regulatory affairs.

The first two contracts above had a term length of five years, while the support services had a two-year term length; for all contracts, it was understood that the first year would comprise at-risk implementation activities, the cost of which would be recouped over the subsequent years of program operations (i.e. four years for core services and one year for support services).

Based on our interviews and understanding of the market, we believe that the term length for South Bay Clean Power's core service contracts may be shortened to four years in duration (i.e. for the first three years of operations) without imposing financial difficulties for contractors or the CCA program.

### Performance-Based Service Contracting (PBSC)

The Performance-based service contracting (PBSC) approach South Bay Clean Power intends to employ is beginning to be used by at least one CCA (Marin Clean Energy) to support DER integration activities. PBSC pays contractors for achieving a certain action rather than by specifying the manner in which the work is to be conducted. It therefore fully aligns payment with performance while:

- Outsourcing the financial risks of implementation and operation to the contractor;
- Minimizing process-oriented requirements (i.e. specification by the CCA regarding work plans, staffing, etc.)
- Allowing flexibility for contractors to determine how best to achieve the goal.

For example, instead of paying for a contractor a fee to design and implement an electric vehicle managed charging program, a PBSC could be used under which the CCA agrees to jointly market the program and then splits the resulting revenue gained through operations (thereby incentivizing the contractor to take on the financial risk of signing up customers, installing any necessary hardware, commencing operations, etc.).

### Performance Fees

Performance fees are of a similar though lessor nature than PBSC, and only impose nominal decreases in regular fees for contractors that fail to maintain a certain level of performance (penalties) or incentives for exceeding a certain level (rewards). This mechanism has not been used in the California CCA market to date: while certain contracts have included mandatory performance standards with defined metrics, there is no financial reward or penalty for contractors that exceed or fail to meet these metrics. In the broader energy industry however, such contracting structures are increasingly utilized to enhance the provision of certain services and South Bay Clean Power intends to use this tool to the same advantage.

It is important to note that performance fee penalties should not be designed to impose significant financial risk on contractors, but should be sufficient to ensure there is a meaningful, direct price signal tied to performance. Additionally, it may be appropriate to allow the contractor to 'earn back' the penalty if performance in subsequent months improves. In this regard, well-designed mechanisms should not dissuade potential contractors from providing services or induce a hostile working relationship at any point. Rather, the mechanism should be understood as providing a financial incentive to maintain or continuously improve the quality of service that the contractor expects to achieve under its normal course of business operations. As such, the inclusion of performance fees should not be expected to induce contractors to build in any risk premiums into their overall fee (which would increase costs for the CCA).

South Bay Clean Power performance fee bonuses will not reward contractors for meeting an expected level of performance, but will rather incentivize the continuous improvement of key services provided to us. Additionally, any bonus amount should not exceed the total value of the

benefits the CCA would derive from the gain in service quality. To be meaningful, reward incentives will need to reflect the additional effort required to provide a superior level of service.

Note that performance fees are only appropriate when the activity is under the contractor's full and direct control. Examples in which it would be appropriate to employ performance fees include requiring:

1) A call center operator to meet an average wait-time for inbound customer inquiries over the course of any month (which ensures that the contractor plans for adequate staff capacity to field all calls in an expeditious manner);
2) A data manager to submit customer bills to the utility during the appropriate submission window, excepting instances in which the utility is at fault for any delays (which could otherwise cause a delay in program cash flow);
3) A power services manager to achieve a certain accuracy in the forecasting of day-ahead electricity load over the course of a month (which incentivizes the implementation of business processes or software to automatically error-check and calibrate this critical forecasting function).

An example of where performance fees are not appropriate would be penalizing a contractor for projecting power market prices that fail to meet a certain measurement of accuracy. The reason is that, given the complexity of the power market and underlying volatility of key price drivers (like availability of hydroelectric power, incidence of heat waves, and natural gas prices), a contractor could use widely-accepted models and methodologies and still produce inaccurate forecasts on occasion.

### *Quality Assurance Plans for Performance Fees*

To implement performance fees, a quality assurance plan that defines the methodology for the penalties or rewards needs to be agreed upon, capturing the specific metrics, definitions, expected level of performance, regular period over which performance is measured, and specifically how it is measured. These quality assurance plans should employ commercial or industry-wide performance standards (where available) and will vary by service. Since this mechanism entails some level of reporting and oversight burden for management, it should only be applied to key activities.

The partnering process step may be used to define the quality assurance plans and related contract language after the competitive solicitation award. In the event that quality assurance plans cannot be agreed upon during the initial competitive solicitation, performance fees for certain services may be delayed until after the initial contract term (i.e. when contracts are set to be renegotiated or the services put out to bid again). At this point, a historic workload analysis can be performed by CCA staff to derive the insights necessary to structure an appropriate quality assurance plan. Note that existing CCAs may have able to advise on their respective contractors' historic performance in order to create initial quality assurance plans.

## Competitive Solicitation Process

In this section, we summarize recommendations and best practices for each sequential step South Bay Clean Power will be taking in the competitive solicitation, bid evaluation and contracting process.

### *Drafting of the request for proposals (RFP for services) and accompanying documentation*

A well-structured Request for Proposals (RFP) ensures that services proposed are appropriate and complete, facilitates the efficient review of proposals and subsequent contract negotiations with successful respondents, and ensures that the contractors hired are reliable and do not have any conflicts of interest in providing services.

The RFP is typically drafted by a technical expert, reviewed and finalized by committee and counsel, and presented to the JPA Board for subsequent approval and issuance.

In covering all aspects of CCA implementation and operation, the RFP is a necessarily complex document. The sections below do not provide a narrative description of every clause that should be included in the RFP, but rather detail our recommendations for best practices to enhance the RFP used by Humboldt's Redwood Coast Energy Authority, which will be incorporated into the forthcoming draft RFP for South Bay Clean Power.

Humboldt's recent CCA implementation provides a useful RFP template, and was structured using the following sections:

1) General Information: regarding the context, structure, characteristics and goals of the CCA and objectives in issuing the RFP;
2) Scope of Services: capturing the various program phases and requested services;
3) Proposal Process: disclosing the solicitation schedule and process for any communications between bidders and staff;
4) Proposal Contents and Submittal: detailing how proposals should be structured and submitted;
5) Proposal Evaluation and Schedule: summarizing the process and methodology by which bids will be reviewed and scored, and awards given (though retaining the right to award based on discretion).
6) Contract Negotiation: summarizing the anticipated process to finalize contracts with successful bidders.
7) Proposal Considerations: containing various clarifications of a legal nature (e.g. rights, conduct, considerations, disclaimers, confidentiality, etc.)
8) Attachments: of any required forms, templates, data or contextual information.

The appendix "***Best Practices in RFP Design***" explain our recommendations that will be applied to drafting South Bay Clean Power's RFP; the appendix is organized under the above section headings.

### *Issuance of RFPs and advertisement of solicitation opportunity*

The RFP and any supporting documentation should be posted electronically on a local government website.

To facilitate competition, the solicitation should be widely advertised in appropriate trade forums, publications and associations, and sent directly to as many companies or entities that provide the requested services as possible. Creation and maintenance of a list of such companies should be part of this process (existing CCAs and CCA trade associations will be able to provide initial recommendations).

### *Informational webinar*

A webinar for prospective bidders should be conducted soon after the release of the Request for Proposals and prior to the deadline to submit written questions. Its purpose is to assist prospective bidders in reviewing and interpreting the solicitation documents, by providing a tutorial or overview on key subjects.

To provide high-level context, the presentation will include the genesis, timeline and milestones of the CCA initiative to date, relevant local energy policy goals, the program's governance structure and operational model, and how the agency is expected to grow over time. It will also review the overall structure and requirements of the RFP, any key concepts, and the scope of work requested.

### *Written questions and answers (Q&A) process*

Bidders will be allowed to submit written questions prior to a specific date. Note that questions regarding the scope of work can reveal sensitive details about the services, methodologies and overall approach of an individual contractor to its competitors. Consequently, many questions which contractors would ask, absent this concern, are often not submitted. The practical result is that contractors are forced to prepare their bids without clarifications that would enhance their proposals. Therefore, questions regarding the scope of work should be held as confidential if requested by the contractor, so that contractors feel free to request the clarifications necessary to enhance their proposals. Broader questions not seeking clarification on the scope of work (e.g. contracting or contextual clarifications) should not be treated as confidential, and answers to these types of questions should be disseminated to the entire group of bidders.

### *Internal committee bid review process*

The committee responsible for reviewing bids and interviewing respondents will include both government staff and members of the public, who should sign non-disclosure and prohibition against conflicts-of-interest agreements.

Individuals with relevant industry experience are necessary on the committee, and identifying and soliciting their involvement will be a priority. To evaluate proposals to provide core services, care will be taken not to confuse non-relevant or narrow energy industry experience (such as in solar development or green building) with experience applicable to evaluating the services detailed in the proposals (such as in managing comparable operations for other CCAs, utilities or cooperatives). Members will be provided with:

1) Clear guidelines and templates for how bids are to be systematically reviewed, evaluated and scored in adherence with the criteria and methodology disclosed in the RFP.
2) A timeline of the review process deadlines, conference calls and in-person meeting dates;
3) The division of responsibilities and level of commitment expected;

4) Protocols governing the handling of any bids (particularly confidential material) and communications within the committee (direct communications with bidders should be prohibited, and limited to a single local government staffer).

The references listed by bidders should be contacted soon after the submission of bids and asked to provide a description of the scope of work provided, evaluation of performance (qualitatively and on a 1-to-10 scale) and overall recommendation for the CCA. More specific follow-up questions may be prepared by subject matter experts on the review committee, depending on the service being offered. If any references fail to respond in a timely fashion, the bidder should be given the opportunity to provide an alternate reference.

While much of the review may be done individually and remotely, the process should include several conference calls and in-person meetings to review findings and discuss any areas of substantial disagreement in interpretations or rankings.

Any remaining questions or necessary clarifications, the answer to which might impact whether a contractor is included on the short-list for further consideration, should then be issued in writing to the contractor. Note that if a bidder has failed to meet the requirements of the RFP due to an easily-corrected error or omission, and would otherwise be competitive, the bidder should be given the opportunity to submit any necessary documentation or clarifications.

These responses should be taken under consideration prior to finalizing rankings.

### *Announcement of short-listed bid respondents*

The announcement of short-listed bidders should be publicly released.

Bidders that fail to meet the requirements of the RFP, or are judged not sufficiently competitive in comparison to other bidders, should be contacted directly, thanked for their participation, and given a brief qualitative description of their performance and recommendations for areas of improvement in writing.

### *Interviews with short-listed bid respondents*

A written list of questions, requests for further clarifications, and/or areas that are of particular interest for discussion should be provided to each contractor at least one week in advance of their interview date.

The format of the interview should be agreed upon with each contractor. If bidders will be providing software to be used by program staff, a live demonstration of the software should be mandatory.

Sufficient time should be allotted to fully interview each contractor. For core services, this process may take up to four hours.

Contractors should attend in-person, but may have subject matter staff experts attend the interview remotely, particularly for companies providing core services (that require a broad team). Consequently, adequate audio and webinar conferencing should be set-up and tested prior to the interview, such that remote attendees can clearly hear and be heard by everybody in the room.

Written questions or requests for clarifications that remain after the interview, which may impact the award of the contract, should be issued in writing to the contractor.

Note that CCA RFPs have included language giving broad authority to award contracts at the local government's discretion; in other words, regardless of the ranking criteria used to score proposals and short-list bidders, if the interview process elevates the committee's opinion of one bidder over its competitors in a manner that is not appropriately captured by the ranking criteria, there is no prohibition against the committee recommending that the contract be awarded to that bidder.

### *Announcement of award*

The announcement of the award of contracts should be accompanied with a complete list of bidders, a detailed scoring (by criteria and overall) of each short-listed bidder, and a qualitative summary of the committee's recommendation and reasoning. This should be released publicly, along with all proposals submitted (redacted as appropriate for confidential sections).

Each short-listed respondent should be contacted individually, thanked for their participation, and given a qualitative description of their performance and recommendations for areas of improvement in writing.

This process should demonstrate that the committee has conducted their review with an appropriate level of professional diligence. It also maintains relationships with runner-up bidders, whose services may still be required if contract negotiations with the awardee fail for any reason.

### *Partnering process*

After contract award, each contractor should attend a partnering interview in-person. Under this process, the contractor and local government meet and discuss their respective expectations. They mutually develop the specifics of any applicable quality assurance plans, proactively identify potential sources of conflict, and agree upon cooperative ways to resolve any issues that may arise. This process identifies and provides guidance on any potentially problematic of contract negotiations, and should be attended by counsel.

### *Contract negotiation*

Contractors will submit their proposed scope of work, budget, payment terms and standard contract language to counsel, who will subsequently include any language required or desired by the JPA. An iterative process is then to be expected, under which counsel and contractors will identify areas in need of clarification or potential conflict, and mutually-agreeable terms and mitigating language.

### *Contract execution*

Contracts for approval should be presented to the JPA Board accompanied by a staff report summarizing the proposal, review process and committee recommendation.

## Conclusion

That a Community Choice Aggregation program for the cities of the South Bay and West side of Los Angele is feasible has never been in question. Based on the success of the current programs, it is also evident that Community Choice has the potential to advance the goals and objectives that the South Bay Clean Power working group has pursued since 2014.

What has been in question is how such a CCA should be designed and implemented to maximize the pace and scale in achieving these goals. This Business Plan has been written to address questions such as:

- What is the optimal governance and organizational structure of the program, both for South Bay Clean Power and in terms of a county-wide approach to implementing Community Choice?
- What practical capabilities will the CCA deploy, to align the program's operational activities with its strategic goals?
- In order to maximize local economic development and job creation in Los Angeles, how will this design ensure that the CCA can accelerate Distributed Energy Resources (energy efficiency, distributed renewable generation, energy storage, electric vehicles, and demand response technologies), both in its power planning and market operations and by leveraging the land use and transportation authorities of local governments?
- Does the size of South Bay Clean Power (twice as large as any CCA under formation to date) impact how the CCA should approach power planning and energy risk management activities?
- Does this scale, and the broader transition to Community Choice service throughout the Los Angeles region (and much of Southern California Edison's territory) necessitate closer collaboration with the utility than smaller CCA's to date have experienced? How does this impact the design of the CCA?
- What is the most transparent and competitive process to use in contracting for all necessary services, which capabilities should transition to staff over time, and how can this process be accelerated?
- Given the complex nature of launching a CCA, how should at-risk and performance-based contracting strategies be applied to incentivize expert contractors and enhance the overall quality of services provided to the CCA?
- What is the best strategy to finance the CCA, while lowering local government upfront expenses and overall financial liability?
- What are the best practices and lessons-learned from the existing CCAs and other public power initiatives in California that should be applied for South Bay Clean Power?

In answering these questions, we surveyed the experience and design of operational CCAs, CCAs under implementation, municipal utilities, investor-owned utilities, and private sector companies with relevant capabilities. This Business Plan has synthesized the resulting best practices and lessons learned to define a program design for South Bay Clean Power that incorporates:

1) The implementation process and many of the program design elements pioneered by the Redwood Coast Energy Authority (such as the enhanced energy risk management capabilities), with key improvements based on lessons-learned;

2) A financing strategy combining the approaches used successfully by the Redwood Coast Energy Authority and Silicon Valley Clean Energy;
3) A proven, regional governance model for South Bay Clean Power and all other CCAs in Los Angeles County based on the Northern California Power Agency and Southern California Public Power Authority (Joint Power Agencies of municipal utilities, irrigation districts and power cooperatives);
4) Expanded Distributed Energy Resource capabilities that synthesize the best-practices of operational CCAs, companies that specialize in managing the integration of Distributed Energy Resources into wholesale electricity markets, and the recent industry-leading practices of Southern California Edison that have allowed the utility to increasingly procure Distributed Energy Resources instead of traditional wholesale generation.

The end result is an explanatory, step-by-step guide that — when combined with our draft Joint Powers Agreement and forthcoming RFP for services — will allow local government staff, elected officials, and the citizen advisory stakeholders of South Bay Clean Power to launch the largest, most scalable and most advanced CCA to date with a minimum of effort or upfront expense.

Owing to its size — South Bay Clean Power will be twice as large as the largest CCA under implementation to date — launching the CCA requires a program design that more closely resembles utility operations, particularly in energy risk management capabilities.

Specifically, and in contrast to how most CCA programs have launched, South Bay Clean Power will need to procure power supplies from multiple different counterparties from the outset. Additionally, the CCA will need to work collaboratively with Southern California Edison to create its initial portfolio of power contracts, because the utility has already entered into certain contracts on behalf of customers who will be served by South Bay Clean Power and has proposed to credit the CCA for certain obligations that these contracts fulfill.

Both of these requirements necessitate that South Bay Clean Power contract for more comprehensive energy risk management services at launch as compared to how most CCAs have been designed to date. Fortunately, the implementation and contracting approach pioneered by the Redwood Coast Energy Authority is uniquely suited to this task. That CCA, in contrast to all others, has hired a power management contractor with the requisite capabilities to coordinate with SCE in this manner.

The timing of South Bay Clean Power's initiative is fortuitous on many levels, as the Redwood Coast Energy Authority has provided the proof of concept and core template necessary for a new CCA to employ this proven model. Simultaneously, more companies have entered the CCA market to provide best-in-class services, and the availability and cost of renewable energy on the market has never been more favorable than it is today.

By issuing a single RFP for all required services, implementation can be accomplished with minimal staff time or government funding while outsourcing risk and expenses to expert contractors. This report includes numerous refinements based on interviews with Redwood Coast staff and other industry experts, while explaining the considerations and inherent advantages of this approach. Based on the direction offered in this plan, the cost of implementation can be cut in half while the program development and launch timeline is rapidly accelerated.

An additional benefit of this approach is that it allows South Bay Clean Power to have full transparency and oversight into every power plant that the CCA will contract with, and how all aspects of its power operations will be conducted. This transparency and comprehensive approach will allow South Bay Clean Power to fully integrate Distributed Energy Resources — such as energy efficiency, distributed renewable generation resources (e.g. rooftop solar photovoltaic), energy storage, electric vehicles, and demand response technologies — into the CCA's managerial and operational activities and to maximize local workforce and economic development by doing so.

In order to create a highly effective and stable governance model for not only a South Bay Clean Power CCA but also other CCAs in Los Angeles County, this Business Plan concludes that it is in the best interests of municipalities with similar goals to form CCAs to exercise local control over their communities' energy choices, program elements, rates and financial reserves, while also forming a Regional "JPA of CCAs" to provide an economy of scale for joint services and power purchases and to participate in collaborative planning, regulatory engagement and legislative lobbying. To make that possible, this report recommends and details the organization of the Regional JPA and member CCAs and accompanying staffing requirements, and the allocation of responsibilities between staff and program contractors at launch and over time as the Regional JPA and CCAs develop in internal capacity.

In implementing these recommendations, South Bay Clean Power would be embracing the logical progression and advancement of the Community Choice Aggregation model as it enters its next stage of market maturity. Far from a radical departure, this updated model is based on the fundamentals of the public power industry's long-held best practices and experience with energy risk management and regional collaboration.

South Bay Clean Power can create and launch a powerfully effective Community Choice Aggregation program that operates more reliably and economically than any offered to date. As implemented under the stable, regional governance model detailed in this report, this approach will allow all CCA programs that launch in the Los Angeles region to benefit from the leadership and innovations pioneered by South Bay Clean Power. In particular, this model will ensure that all CCAs in the Los Angeles region collaborate effectively in a holistic manner to accelerate the transition to Distributed Energy Resources, and that the accompanying benefits of local economic development, job creation and workforce development are achieved at scale throughout the county.

# Appendix: Regional JPA Organizational Model

This appendix provides a narrative, relatively non-technical summary of the CCA's functional capabilities and activities comprising management and operations after program launch. This is referred to as an "organizational model".

For the purposes of this section, we broadly define "operations" as continuous or near-continuous activities, the delay of which at any given moment could cause significant difficulties for the program. Examples of operational functions include power market operations, data and billing communications with SCE, and customer call centers. "Management" comprises all remaining functions that are not as time-sensitive.

Various other functions are categorized under different subheadings. Note that the organization of these functions will vary based upon the contractors selected to provide services and how those systems and processes are best integrated. However, all functions are anticipated to be provided in some fashion.

## Management Functions

The management functions outlined below comprise the ongoing activities of the CCA after launch. These functions are less time-sensitive than operational activities, and they generally provide the oversight, analytics, intelligence and strategic decisions that determine the evolution and success of the program over time.

### *Business Operations: Administration and Oversight*

#### Board and Committee Relations

Provide regular reports and updates to the JPA governing Commission and any committees in public and closed sessions, interact with members to formulate and refine strategic initiatives, and coordinate with various management and operational functions to update relevant Board policies.

#### Human Resources

Oversee employment practices in compliance with labor laws and adopted policies, administer employee benefits, manage relations and performance issues, maintain continuing education programs, and plan for, solicit, hire and provide for the training of employees as the CCA grows.

Note that as a startup agency, the CCA will expand key and support staff positions significantly over the initial years of operations to assume control over increasing aspects of both management and operations.

#### Internal Process Controls

##### *Business Process Controls*

Ensure operating procedures and practices meet current and planned business process and continuity assurance requirements set by policy, and that decision-making in management and operations is based on the best available information sourced across various functions.

#### *Data Management Process Controls*

Ensure that the significant volumes of data collected by the CCA from various sources is maintained in a fashion that meets the extant and planned business process requirements of the program, facilitates data interchange between the CCA and operational counterparties, and complies with law and regulation governing security and privacy (particularly for customer data).

Note that this function is particularly complex and critical, as the effective handling and subsequent analysis of large volumes of data is what provides the foundation for effective decision making and operational capabilities of the CCA. Additionally, there is ongoing development in data exchange protocols for distributed resources, which the CCA should anticipate and integrate as necessary to support related management and operation functions.

#### *Compliance Process Controls*

Ensure internal processes comply with evolving policies, rules and regulations, manage compliance reporting obligations and filings, and investigate and resolve non-compliance events.

### Information Technology

Provide and maintain the information technology infrastructure required for reliable and secure provision of service, in accordance with applicable frameworks and industry practices (e.g. Critical Infrastructure protection, CIP) and managed by a Security Information and Event Management (SIEM) system to harden cybersecurity across all network levels.

### Facilities and Security

Provide and provision adequate office space, and arrange for physical security.

## *Accounting & Finance*

### Budget and Financial Planning

Prepare annual budgets for Board approval, working across functions as necessary and satisfying the revenue requirements and financial policies of the program.

### Capital Projects

Advise and implement the process of applying for a credit rating, and subsequently to prepare the issuance of revenue bonds to support capital project finance. Thereafter, to maintain bond indenture compliance and to satisfy investor and participant information requests.

### Accounting and Controls

Maintain accounting records and processes to provide accurate and timely financial information to management and for routine financial statements and in preparation of audits (in accordance with accounting standards and adopted policies), assist in budgeting exercises and monitor expenditures for budget compliance, process payroll, monitor compliance with the fiscal provisions of vendor contracts, file annual returns and manage treasury functions.

### Rate Setting and Revenue Forecasting

Utilize a rate engine, database of historic customer usage, and load forecasting to simulate expected utility service fees, revenue inflows to and customer payments from the CCA (under extant and

future rate and tariff schedules), and provide comparisons to extant and forecasted utility rate schedules. This function supports both rate-setting and budgeting exercises.

### *Legal and Regulatory Advice, Representation and Intelligence*

Monitor the numerous legislative initiatives and regulatory proceedings (at the CPUC and CAISO, primarily) which could impact the CCA's obligations and authorities, provide legal advice and strategies, and represent the CCA in these forums. Note that this function will be provided by multiple contractors and staff, as the subject matter and required expertise is necessarily broad.

For example, there may be over sixty regulatory proceedings to be monitored, dozens of related in-depth workshops and meetings, and numerous filings and testimonies required over the course of a year.

### *Lobbying Activities*

Identify and facilitate communications with key legislators and staff involved in proposed laws that could impact the CCA's obligations and authorities.

### *External Affairs: Public Relations, Marketing and Outreach*

Provide and disseminate multi-lingual print and digital marketing materials for the CCA, update the program's website and social media content, evolve the CCA's brand strategy as required, communicate with members of the press, conduct opinion surveys, represent the CCA at public events, and to communicate CCA initiatives as needed to customers and communities through a variety of channels (direct mail, email and paid/earned targeted social media, newsletters, radio and online ads, retail merchandising, in-store displays, etc.).

These functions require sensitivities to customer demographics, and incorporate customer feedback to refine and advance branding and campaign strategies as well as to implement new functionality and features of operational Customer Care services. Note that campaigns may rely on additional consultants, marketing vendors and contract labor.

### *Customer Care: Key Account Relationship Management*

Establish and maintain relationships with key accounts, and work with other management functions to offer customized services and rate structures. Note that in any CCA territory, there will be a number of very large, sophisticated commercial and industrial customers which will employ energy managers who are tasked with monitoring and minimizing or stabilizing energy costs. These customers should be assigned an account manager by the CCA, and may request specialized rate structures, such as real-time pricing or customized hedging, and/or installation of Distributed Energy Resources that could be supported by or integrated with the CCA's activities.

### *Energy Management*

#### Distributed Energy Resource Strategic Initiatives

Keep pace with the rapidly-evolving landscape of distributed energy technologies, business models and programs as well as related developments in regulations, market rules, and funding or financing sources and mechanisms, to evaluate new customer-facing products and services in terms of policy alignment, customer value and financial viability, and to coordinate with various departments to continuously integrate distributed energy into the CCA's energy management (planning,

procurement, contract management and operations), customer care, data management and regulatory engagement functions in a systematic fashion.

### Planning and Analysis

#### *Targeting of Distributed Energy Resources*

Analyze customer data and other data to identify specific customers that present distinct opportunities for Distributed Energy Resources. Note that this is an evolving area that both utilities and CCAs in California have implemented to varying degrees.

#### *Distributed Energy Resource EM&V (Evaluation, Measurement & Verification) and Forecasting*

Collect and analyze the hourly or sub-hourly impact of energy efficiency and distributed energy resource installations based on project attribute data and GreenButton smart meter usage data (on an automated basis) for integration into forecasting, planning and procurement functions. Note that this is an evolving area of capabilities that several utilities and CCAs are piloting in California through the implementation of OpenEE Meter (an open-source technology), which may allow pay-for-performance DER programs and eventually the forward procurement of shaped blocks of energy provided by DER.

#### *Demand and Price Forecasting*

Prepare a variety of short- to long-term forecasts of electricity usage patterns and electricity and natural gas market prices using technical models and customized algorithms, examining various potential future scenarios and identifying key areas of variability or uncertainty. These support a variety of subsequent planning and operational activities (trading, valuation, etc.).

#### *Fundamental Modeling & Analysis*

Use "fundamental" models, i.e. production cost dispatch models that simulate the structure of the physical electricity grid (including transmission lines, substations and existing and planned generation assets), capture wholesale market rules, and develop various forecasts required as model inputs in order to forecast (deterministically and stochastically) the performance of the CCA's portfolio of assets and contracts across a variety of future scenarios.

Simulations capture the California market and the broader Western Electricity Coordinating Council (WECC) region to capture import and export dynamics. Power flows, supply, demand, market prices, climactic conditions, new generation and distributed resource development, CCA costs and potential market rule changes are considered in a holistic manner to assess the financial impact of different scenarios across the planning horizon (typically, up to twenty years).

Note that this function would develop similar forecasts based on available data for SCE's portfolio, to inform regulatory engagements and strategic planning associated with non-bypassable charges (PCIA and CAM).

#### *Portfolio Development & Valuation*

Support the development of competitive procurement strategies (bilateral contracts, competitive solicitations, open season, etc.) that meet regulatory and local policy goals over the medium- to long-term. A variety of supporting tools are developed and maintained to support the valuation of different power products and offers.

### *Portfolio Reporting*

Prepare reports and forecasts for internal use on a regular basis (e.g. daily, monthly, annual) on the CCA's expenses, risk and cost drivers, and open positions for different power products to be filled by procurement activities.

### *Procurement Policy Analytics*

Monitor and analyze the impact of state and Federal policies impacting the CCA's procurement costs and processes, maintain compliance with the CCA's local policy goals and objectives, and to educate and coordinate amongst different departments to do so and to advise on emerging technologies, markets and products and corresponding procurement strategies.

### *Integrated Resource Planning*

Incorporate feedback from CCA management and involved stakeholder groups on the various assumptions and methodologies involved in long-term planning, and to produce an annual Integrated Resources Plan (IRP). This function draws upon many of the "Planning and Analysis" functions detailed above, particularly "fundamental modeling", and should conform to IRP guidelines being defined by CCAs, the CPUC, CEC and CARB in accordance with the intent of SB350 (which seeks to harmonize and coordinate long-term planning in California across the agencies and load-serving entities involved).

### Contract Origination

Oversee competitive solicitations and bilateral transactions for required physical and financial products, and negotiate short-, medium- and long-term power purchase agreements (PPAs), enabling agreements and structured transactions in compliance with the CCA's internal policies and procedures. Products are sourced from various distributed resources (demand response, energy storage, combined heat and power, etc.), renewables, conventional sources, other suppliers and exchanges, and include energy, capacity, tolling arrangements, natural gas transportation and storage, emissions compliance products, transmission rights, and various financial products.

### Contract Management

Administer energy-related contracts and conduct supporting activities such as counterparty credit monitoring, verification of collateral and compliance with contract terms, exercising of contract options, renegotiation of contracts, dispute resolution, invoice verification and payment processing in accordance with contract terms.

## Operational Functions

The provision of these activities is extremely time-sensitive, in that any delay may directly impact the performance of the CCA (i.e. incurring unplanned costs, failing to satisfy customer inquiries, delaying receipt of revenues, or hindering management functions).

### *Energy Operations*

### Distributed Energy Information and Data Management

Interface with a variety of Distributed Energy Resources and aggregators to predict, track and verify capacity and other performance attributes of DER for operational use. For example, solar generation

output based on weather forecast and irradiance data, capacity available for dispatch from microgrids, demand response and electric vehicle managed charging aggregators, etc. This data may be sourced via SCE, CCA installed telemetry or third-party gateways and use proprietary or industry standards (many of which are evolving). This functions supports the integration of distributed energy into a variety of management and operation functions (such as scheduling and contract management).

#### *Renewable Generation Data and Reporting*

Act as QRE (Qualified Reporting Entity) for small-scale renewable generators and report revenue quality meter data to WREGIS (the Western Renewable Energy Generation Information System).

### Scheduling, Trading and Market Operations

Provide day-ahead and real-time schedule coordination and/or scheduling agent services in the coordination and submission of bids for CCA loads, bids, ancillary services and various other transactions in CAISO markets. This includes forecasting, scheduling and dispatch, outage management, asset optimization, development of bidding strategies, physical and financial trading and short-term contracts including the re-marketing of excess power, management of emission-compliance products, and related compliance activities.

This function requires the maintenance of primary and backup dispatch centers that operate on a real-time, continuous (24/7/365) basis. Note that separate contractors will likely be used to provide and coordinate wholesale generation and Distributed Energy Resource functions (given the specialized nature of the latter).

### Settlements and Operations Services

Validate energy transactions (contract and CAISO market receipts and payments) under the terms of contract or tariff provisions, identify issues or discrepancies, and initiate and resolve disputes. This function requires, for verifying CAISO market transactions, shadow settlement software to independently calculate charges based on data published by CAISO and compare the results to settlement statements, as well as analytical capabilities to identify and investigate any differences. This is necessary to verify that the CCA's incurred costs and received revenues are correct.

### Bulk Power Information and Data Management

Interface with CAISO and collect and maintain a database of wholesale market data, documentation and records, develop and implement various analytical and reporting tools, and support energy-related settlement, compliance, reporting and information requirements.

## *Customer Billing and Data Operations*

### Customer Relationship Management (CRM) Database

Receive, error check and securely store customer data (individual account, usage, billing and customer contact attributes, as well as summary datasets for the CCA territory) using a variety of data exchange protocols and data formats. Sources of data include:

- Electronic Data Interchange (detailed below, EDI is a monthly summary of each customer's usage and the primary format used for billing and compliance purposes);

- GreenButton (a summary of Smart Meter data revealing customer usage on a 15 minute or hourly basis, i.e. more granular than EDI format);
- CCA INFO Tariff (summary datasets available to the CCA and updated as requested under specialized tariffs from SCE;
- Information from Customer Care functions related to distributed energy and communications with the customer;
- Data relevant to Distributed Energy Resources from a variety of sources, including gas usage and account data, building data (e.g. size, type of building and date of construction), commercial real estate data (lease types, occupancy, business type, etc.), and weather and climactic data.

Note that this requires integration with Customer Care operations, and the data collected supports a variety of management and operation functions.

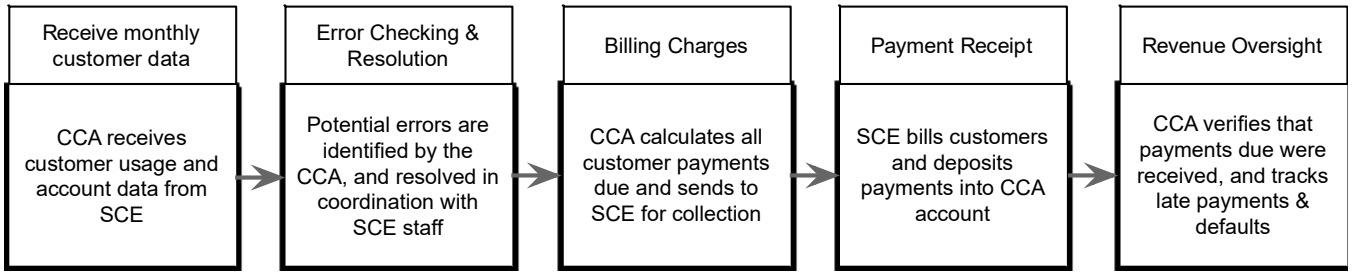
### Electronic Data Interchange (EDI)

Routinely and securely exchange data relating to customer accounts, usage and bills with SCE using a third-party Value Added Network (VAN). VANs are private network providers that lease communication lines to subscribers (e.g. CCAs), and provide specialized services to ensure the security of the data transactions.

### Billing and Verification Services

Receive monthly customer usage and account data from SCE on a rolling basis, identify and resolve any errors in the data supplied (often in coordination with relevant SCE staff), calculate all customer charges and provide to SCE for collection, and verify that payments due were received (or otherwise to identify and track any incidents of non-payment).

Note that this process requires automated software processes, quality controls and staff capacity sufficient to resolve discrepancies and submit billing statements to SCE on a relatively tight timeline; bills for individual customers that are not received within SCE's "billing window" will be delayed until the next billing cycle (a month later). These processes are summarized in the graph below:




Additionally, this process may be required to integrate billing determinants associated with Distributed Energy Resources that may come from third-parties other than SCE.

### Internal Reporting and Compliance

Analyze and prepare datasets to support business processes and oversight functions and to prepare compliance filings (Federal, state and CAISO) that rely on customer data.

## Customer Call Center

### *Inbound Call Handling*

Field customer call inquiries in an expeditious manner and in accordance with established scripts and issue escalation procedures, to establish IVR (interactive voice recording) as required, and to refer customers to SCE for certain inquiries. Scripting should employ proven customer retention strategies. This function requires coordination with SCE customer service representatives to facilitate and enhance the joint responsibilities CCAs and utilities share in fielding customer inquiries.

### *Outbound Customer Calling*

Actively solicit customers for enrollment in programs and rate options, as instructed by CCA management and in accordance with established scripts. For example, customers may be targeted for enrollment in demand response or other distributed energy programs and offerings. Additionally, to employ 'win-back' strategies for re-enrolling customers that have opted-out.

## Other Customer Channels

Initiate or respond to customer inquiries in an expert and timely fashion received via email, online chat and other social media channels.

# Appendix: Best Practices in RFP Design

This appendix details our recommendations that will be applied to drafting South Bay Clean Power's RFP; the appendix is organized under the following RFP section headings, based upon the Redwood Coast Energy Authority's RFP as a template:

1) General Information: regarding the context, structure, characteristics and goals of the CCA and objectives in issuing the RFP;
2) Scope of Services: capturing the various program phases and requested services;
3) Proposal Process: disclosing the solicitation schedule and process for any communications between bidders and staff;
4) Proposal Contents and Submittal: detailing how proposals should be structured and submitted;
5) Proposal Evaluation and Schedule: summarizing the process and methodology by which bids will be reviewed and scored, and awards given (though retaining the right to award based on discretion).
6) Contract Negotiation: summarizing the anticipated process to finalize contracts with successful bidders.
7) Proposal Considerations: containing various clarifications of a legal nature (e.g. rights, conduct, considerations, disclaimers, confidentiality, etc.)
8) Attachments: of any required forms, templates, data or contextual information.

## General Information

***Regarding the context, structure, characteristics and goals of the CCA and objectives in issuing the RFP:***

Care should be taken to provide sufficient contextual information to potential bidders, such that comprehensive responses are prepared by the maximum number of appropriate companies or entities.

Potential bidders are being asked to invest non-trivial resources in the preparation of their bids; many may not have a comprehensive understanding of the local context, potential size, goals of the program, or level of commitment by participating governments.

Providing this type of information up-front and in a readily-accessible format will allow companies to focus their resources on bid preparation rather than due diligence, and should enhance the overall quality of bids submitted as well as increase the number of companies that decide to participate in the solicitation.

As such, this section should detail (either completely, or in summary form and included in appendices) the following:

1) A description of the governance structure to be utilized for the Community Choice program (for example, the Joint Powers Agreement should be summarized, and included in an appendix).
2) A description, and supporting documentation if appropriate, of customer preferences and the timeline of actions of local governments regarding energy policy goals and the history of CCA exploration to date.

3) At least one year's worth of monthly account and usage data specified by customer class;

4) That all services necessary to implement and operate the CCA are being requested under at-risk and performance-based contracting structures, to be detailed as appropriate under the "***Scope of Services***" and "***Proposal Contents and Submittal***" sections.

5) A clear description of the anticipated growth of the agency, and division of responsibility between government staff and contractors during program formation, launch and operational phases of the contract; jurisdictions vary in their preference for employing government staff to cover various functions, and this should be made explicit (so that bidders do not have to make assumptions based on their experience in other jurisdictions).

    a) Note that bidders should be informed that, in order to accelerate the expertise and responsibilities of CCA staff, it is not desirable that a fixed set of services be provided at 'arm's length' for a set number of years, but that the services are provided within a contractual framework that:

        i) Provides CCA staff technical training and direct access to underlying software systems (in other words, contractors should expect to assist the agency in growing internal staff capacity and expertise);

        ii) Is fully transparent in defining the business processes used to manage and operate the CCA;

        iii) Is flexible in terms of pricing, as certain responsibilities are transitioned to CCA staff.

6) Any additional documentation that allows respondents to gain a deeper understanding of the Community Choice program's goals (such as this Business Plan and the accompanying technical appendices).

## Scope of Services

***Capturing the various program phases and requested services:***

The Scope of Services should be divided between the service categories listed below, and within each category the requested services should be ordered by program phase (planning, implementation and operation):

Core Services

1) Power management
2) Data management
3) Customer care (primarily, call center operations)

Support Services

4) Accounting
5) Marketing & outreach
6) DER services
7) Integrated Resource Planning
8) Regulatory and legislative intelligence
9) Legal advice and regulatory engagement

10) Lobbying

When constructing the above service categories and detailing the scope of services required by each, the following guidelines should be taken into account:

1) Services that are dissimilar in terms of the scope of work and expertise required should not be combined and requested (or allowed to be bid) as a single service under a single fee structure. Doing so precludes competition and obscures the cost structure of the separate lines of service. For example:
   a) The most notable example of this in the CCA industry is data management and call center services, which have been previously been requested as a single service.
   b) The process of running a call center that interfaces directly with customers and receiving, analyzing, and sending data to and from the utility (and engaging with utility staff on a routine basis to do so) are completely distinct services.
   c) In the broader industry, both are most often contracted for separately. Some amount of software integration is necessary between both, as customer-specific data must be accessible to the call center operators, but integrating these systems and processes is a routine matter for the companies involved.
2) Similarly, categories of services that are typically provided by a single company and are not dissimilar in terms of the scope of work and expertise required should not be arbitrarily split into one or more service categories.
   a) The most notable example of this in the CCA industry is the bifurcation between the contractor hired to manage power planning and procurement, and the contractor hired to provide power operations on a 24/7/365 basis.
   b) Contractors that have the capacity to provide power operations on a 24/7/365 basis necessarily have the expertise to conduct planning and procurement functions. In fact, because power operations require continuous monitoring, analysis and forecasting of power markets, fuel prices, and project development activities, these contractors maintain a level of sophistication in terms of software, existing business processes, staff expertise and access to data that is unrivaled, and could provide better and more cost-effective procurement and planning services to CCAs.
   c) By separating these service categories, the contractor providing procurement and planning does not have access to the systems and experts that the power operations contractor maintains, and subsequently provides these services at a lower quality than would otherwise be expected.
   d) Thus, combining these functions into a single service category streamlines power service processes for CCAs in a holistic, integrated fashion, and consequently allows superior services to be contracted for at a lower cost.
      i) Note that "planning" functions for a CCA covers various time periods, and long-term "Integrated Resource Planning" is sufficiently specialized that it is advantageous to request as a separate service category from "Power Management" services, though companies that provide the latter may often bid to provide both service categories.
3) Lastly, certain services could pose conflicts of interest if combined into service categories. For example, lobbying, legal advice and regulatory engagement, and accounting services each

require the contractor to act strictly in the interests of the CCA, and should be provided without consideration of the contractor's interests.

   a) The complexity of the energy sector must be appreciated here. For example, a company providing core services will have expert insights into regulatory issues relevant to their services and maintain active regulatory engagement. However, allowing it to represent the interests of the CCA would not be appropriate, since the contractor may advocate for positions that serve its own interests without regard to, or in spite of, the impact on the CCA.

4) Thus, care should be taken to design each service category appropriately, and each service category should be evaluated on its own merits and priced separately.

Further best practices to apply regarding the language and structure of this section are below:

1) Bid respondents should be able to submit proposals that provide multiple service categories, except in cases where doing so would pose a conflict of interest (e.g. lobbying, legal advice and regulatory engagement, and accounting services) and provided that each service category is responded to and priced separately in their proposal (as detailed in section "***Proposal Contents and Submittal***" section below).
2) For each service category, requirements for at-risk or performance-based service contracting and expectation of performance fees should be detailed (and appropriate for the service category). For each phase of the scope of work, the responsibilities and discrete tasks of staff and contractors should be made explicit. Refer to the section "***Including At-Risk and Performance-Based Contracting***" for further context.
3) Detailed descriptions of the services that are being requested should be provided, using industry-standard nomenclature to avoid any confusion or 'grey areas' (including distributed energy services). Note that these should be specified as the minimum set of required services, so that respondents are free to propose additional services and fees that enhance their overall proposal.
4) A requirement should be included that all services to be performed will be summarized by and conducted in accordance with a Business Process Manual (delineating business requirements, roles, responsibilities, internal reporting, methodologies and change management for executing all aspects of program management and operations). Each contractor should be responsible for drafting and maintaining, in coordination with staff and other contractors (as applicable), their respective elements of this document.
5) Whether and to what extent training of CCA staff is requested within each service category should be made explicit.

## Proposal Process

***Disclosing the solicitation schedule & process for communications between bidders and staff:***

A timeline of each phase of the solicitation and contract review process should be disclosed; sufficient time should be allowed for respondents to pose questions, receive clarifications, and prepare comprehensive responses (e.g. six to eight weeks). Note that it is preferable to adopt a conservative timeline at the outset, instead of having to lengthen the response deadline during the solicitation by publishing an addendum to the bid (by which point, certain companies may have already decided not to participate due to not having a sufficient period of time).

## Proposal Contents and Submittal

***Detailing how proposals should be structured and submitted:***

The Redwood Coast Energy Authority again here provides a useful template, which we have modified based on our interviews with staff. Specifically, we have re-organized the structure such that fees, key staff and scope of services are given for each category of service offered. We recommend the following structure:

1) Cover Letter: capturing various prescriptive required statements and disclosures.
2) Executive Summary: a brief summary of the proposal (2 pages).
3) Company Description: following a set template, to be completed by the prime contractor and for any subcontractors included on the proposal.
4) Technical Response to the Scope of Service: for each service category, proposed services are to be organized by program phase (planning, implementation and operations), along with the cost proposal, sample projects and references, qualifications of key staff and subcontractors.
5) Anti-collusion Statement: testifying that the respondent has not colluded or otherwise rigged the bid.
6) Conflict of Interest Statement: disclosing any current or prior contractual or personal relationship between the respondent and the local government agency, staff and officials.
7) Appendix of Additional Information (optional): other relevant information or data to accompany the proposal.

Further best practices to rely upon when drafting this section are listed below:

1) Templates for capturing company background information, key staff and subcontractor resumes, references and project descriptions for prior clients, and fee structures should be provided. This supports the efficient review and comparison f proposals.
2) Within a proposal, each service category under the Scope of Work should be responded to separately, and should follow the corresponding template for the scope of services, fees, key staff and references.
    a) In other words, a team or single company should not be allowed to propose multiple service categories in a substantially different format than two separate companies bidding in isolation, and a team or single company should not be allowed to aggregate the fees for multiple service categories.
    b) Clear guidance on the local government's requirements or preferences for the contracting structure should be explicit here.
3) The mandatory template of the fee structure required for each service category should distinguish between program phases and, if appropriate, tasks within phases. Note that:
    a) Within each service category, requirements for at-risk or performance-based service contracting and expectation of performance fees should be detailed (and appropriate for the service category). Further:
        i) For each service category and phase, any "off-ramps" or conditions that would cause the local government to decide not to launch the CCA should be made explicit, and

mechanisms for payment to the contractor in the event the local government cancels the contract should be proposed (if applicable for the service category).

ii) The contract term length (over which at-risk costs may be amortized and recovered) should be four years for core service and two years for support services (inclusive of the one year of implementation activity).

iii) Refer to the section "***Including At-Risk and Performance-Based Contracting***" for further context.

b) The option to include a specified percentage annual escalator should be included. Doing so allows companies to compete on price without including assumptions of future inflation costs in their fees (which can be non-trivial over a multi-year contract term).

c) The fee structure should anticipate growth of the CCA program over time, as new territories are added; consequently, certain services should be expected to decrease in cost on a volumetric basis.

d) The fee structure will be different for various service categories;

i) For example, certain tasks may be provided at a fixed fee (i.e. preparation of an annual Integrated Resources Plan and quarterly updates, or a monthly fee for power services) while others will depend on the number of customers served (i.e. call center and data management services), or be set on a performance basis (detailed under the section "***At Risk and Performance Based Contracting***").

ii) Certain fees should be allowed to decrease or change over the term of the contract, triggered by when program staff take over specific services (as applicable). For example:

(1) A call center service may be fully outsourced at program launch and charge on a $/account-month basis, but offer the option of transitioning to a fixed-rate Software-as-a-Service (SaaS) fee if the CCA wishes to staff its own call center in subsequent years and continue to use the same software that supports the outsourced call center's staff.

(2) Similarly, a data manager may propose that the CCA could switch at a future date to a fee set on a $/transaction basis, rather than the typical $/customer-month basis. Since the number of transactions is what drives the costs for the data manager, and it is estimating the number of transactions per customer per month to calculate its fee under the mandatory fee structure, this may allow costs to be lowered in future. (I.e. after the CCA has the real-world data to understand how many transactions per month its operations cause.)

e) Respondents should also be allowed to submit innovative, alternative pricing structures in addition to the mandatory fee structure, provided with an explanation of how this flexibility should benefit the program.

f) Respondents should provide a fee schedule for hourly staff rates for services beyond those captured by the discrete scope of work requested.

## Proposal Evaluation and Schedule

***Summarizing the process and methodology by which bids will be reviewed and scored, and awards given (though retaining the right to award based on discretion):***

The scoring criteria that will be used to rank respondents should be disclosed (i.e. a list of characteristics, scoring methodology, and percentage weighting); note that:

1) Undue preference should not be given to bidders based on their direct experience with serving CCAs alone, as the ranking criteria should also consider respondents' broader experience with comparably-sized load-serving entities.
2) For operationally-critical services (i.e. power operations, data management and customer care services), the following should be taken into account:
    a) Whether the contractor maintains adequate physical and cyber security, 24/7/365 capabilities (as appropriate), and business continuity contingency plans in the event of service disruptions; respondents should be expected to detail how they meet or exceed any relevant regulatory requirements or industry-standard practices.
    b) Whether the contractor commissions Service Organization Controls (SOC) audits and maintains Standard Operating Procedures (SOP) to ensure the integrity and performance of its internal process controls.
3) Regardless of the scoring criteria and weights, this section should state that the local government retains the right to award a contract based on its sole discretion. This may be useful during the bid evaluation process, if advantages that bidders offer come to light that were not anticipated and captured in the initial ranking criteria.

## Contract Negotiation

***Summarizing the anticipated process to finalize contracts with successful bidders:***

A partnering process should be employed during this phase in advance of the actual contract negotiation process. After contract award, each contractor should attend a partnering interview in-person. Under this process, the contractor and local government meet and discuss their respective expectations. They mutually develop the specifics of any applicable quality assurance plans, proactively identify potential sources of conflict, and agree upon cooperative ways to resolve any issues that may arise. This process identifies and provides guidance on any potentially problematic of contract negotiations, and should be attended by counsel.

## Proposal Considerations

***Containing various clarifications of a legal nature (e.g. rights, conduct, considerations, disclaimers, confidentiality, etc.):***

This section should make clear that the inclusion of confidential information included in bid responses is permitted, but should be minimal. The Humboldt RFP provides reference language for this that we recommend, stating essentially that the information disclosed under confidentiality should not be a determining factor in the award of the contract.

Contractors may form teaming arrangements to provide a single or multiple service categories, arranged such that one company is the prime contractor for the purposes of bid submission. Note that:

1) If subcontractors proposed within a service category would be able to satisfy the service category scope of work independently of the prime contractor, the local government should retain the option of contracting separately with that subcontractor. The exception being in cases where having a prime contractor commit to fulfill the scope of work regardless of the future performance of the subcontractor is desirable (for example, if the prime contractor is a much larger company than the subcontractor, provides necessary managerial oversight functions, et cetera).
2) Lobbying, legal advice and regulatory engagement, and accounting service categories should not be permitted under a subcontracting arrangement, as doing so may pose conflicts of interest.
3) Companies proposed as subcontractors for a certain service category should not be allowed to submit standalone proposals for the same service category.

## Attachments

***Any required forms, templates, data or contextual information:***

These documents serve to provide additional context for the CCA, solicitation opportunity and local energy policy goals.

## Appendix: Redwood Coast Energy Authority Implementation Documents

The Redwood Coast Energy Authority has posted online the documents listed below, which detail the process and status of their CCA implementation:

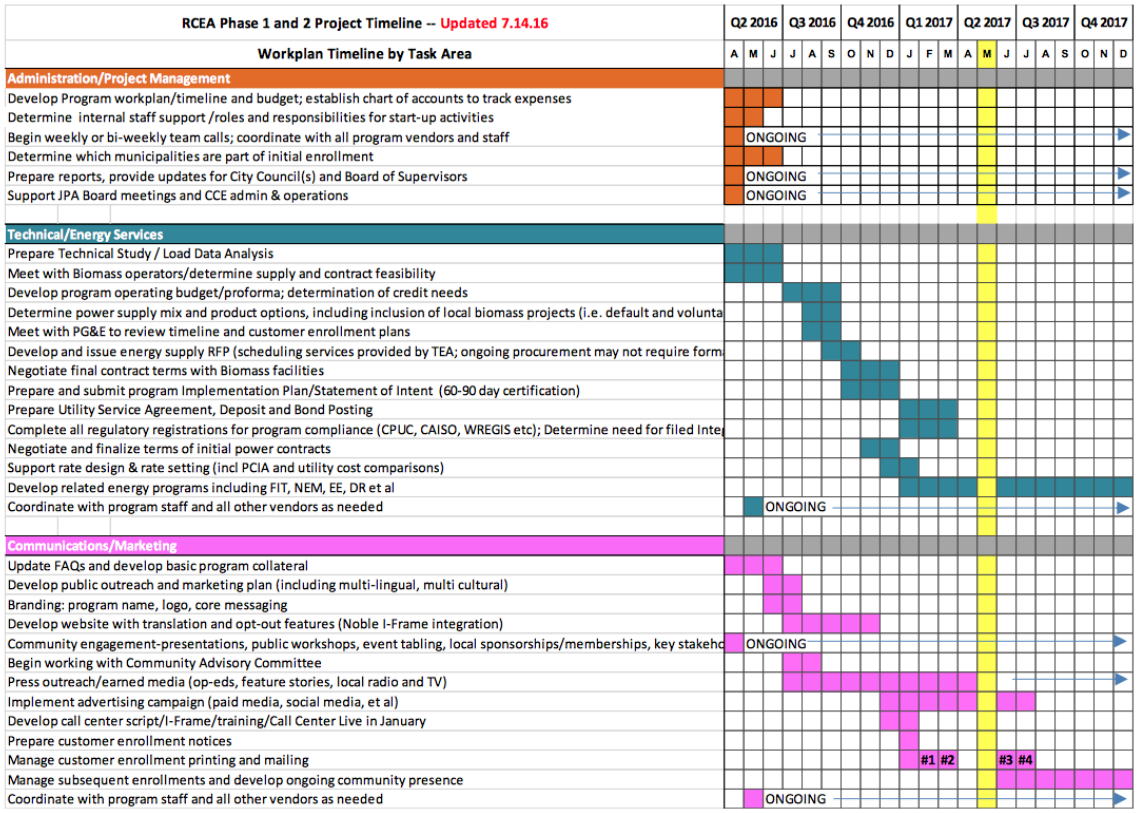
1) Humboldt County Community Choice Energy Roadmap
2) Amended Joint Powers Agreement
3) Request for Proposals for Humboldt County Community Choice Aggregation Development and Operations Services
   a) Notice of Proposed Award
   b) RFP Response from the selected consultant: TEA - The Energy Authority: Part 1 / Part 2
4) Technical Study
5) Implementation Plan
6) Process Guidelines for Development of a Request for Offers for Local Biomass Power
7) Guidelines for Community Energy Program Launch-period Power Portfolio Strategy and Targets

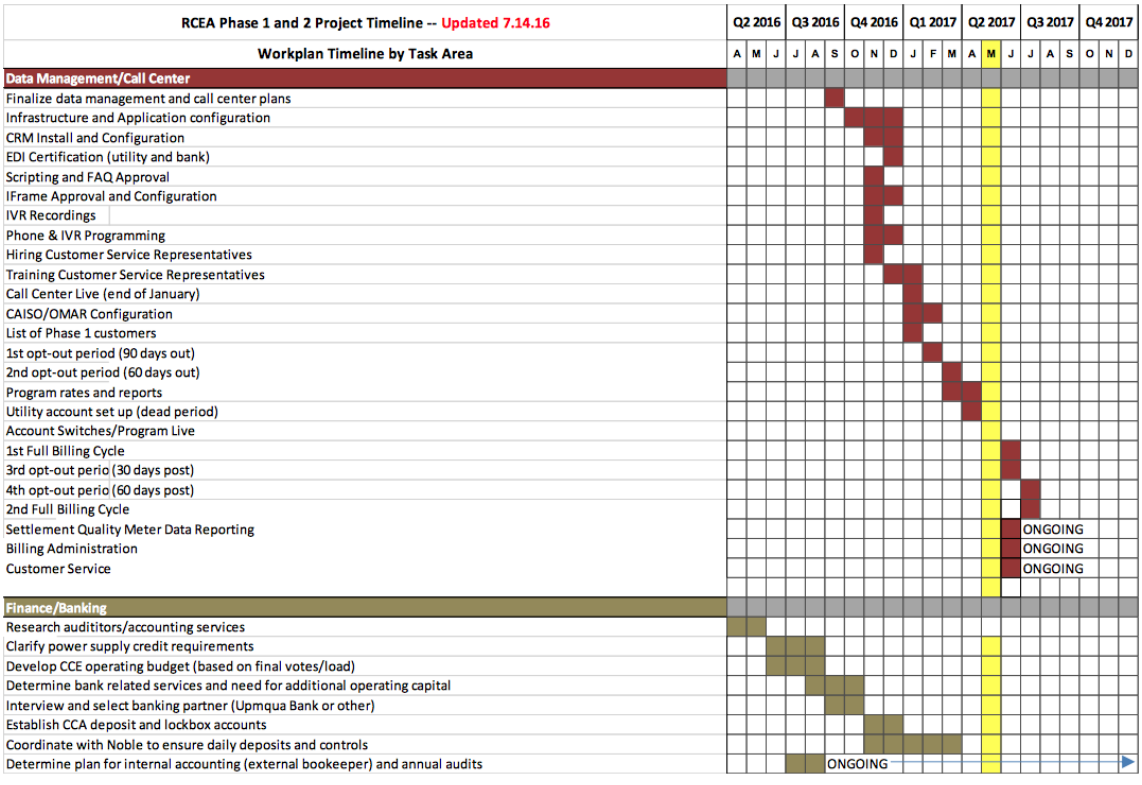
These documents are available online from:

☼ [http://www.redwoodenergy.org/community-energy/formation-docs]

The next appendix provides screenshots of their CCA implementation process, which is the most detailed released to date in the California market, taken from their Technical Study.

# Appendix: Redwood Coast Energy Authority Implementation Timeline



# Appendix: Waterfall Mechanism ("Lockbox")

A cash flow waterfall is a restricted bank account, used by all CCAs to date (including the Redwood Coast Energy Authority), that relies on a neutral third-party financial institution (the "Collateral Agent" or "Collateral Trustee" in the chart below) to control CCA revenues such that:

1) Minimum reserves are maintained per executed agreements; and
2) Seniority is honored in the disbursement of funds.

This provides the maximum level of assurance to the CCA's power suppliers and power management contractor that the CCAs financial obligations for power transactions will be managed in accordance with agreed-upon contracts. In so doing, it lowers any counterparty default risk premium that would otherwise be associated with the CCA and minimizes collateral guarantees or margin call financing.

## Best Practices in Waterfall Design

CCA waterfall mechanisms have evolved since first being used by Marin Clean Energy, as subsequent CCAs incorporated lessons-learned into the design process. We summarize these evolutions below, and propose further design features tailoring the waterfall to South Bay Clean Power's requirements.

### *Anticipation of Supplier Diversification*

The graph below depicts a mechanism based off the one developed by Lancaster Energy Authority, which allows multiple power suppliers to be assigned separate revenue deposit accounts within the waterfall. This is an important design enhancement, because Southern California Edison will only deposit CCA customer revenues into a single account (if a Regional JPA is used to provide services, each CCA will receive one revenue stream from SCE); therefore, this design allows each CCA to add suppliers to the lockbox mechanism in future.

### *Integration of DER Cash Flow Requirements*

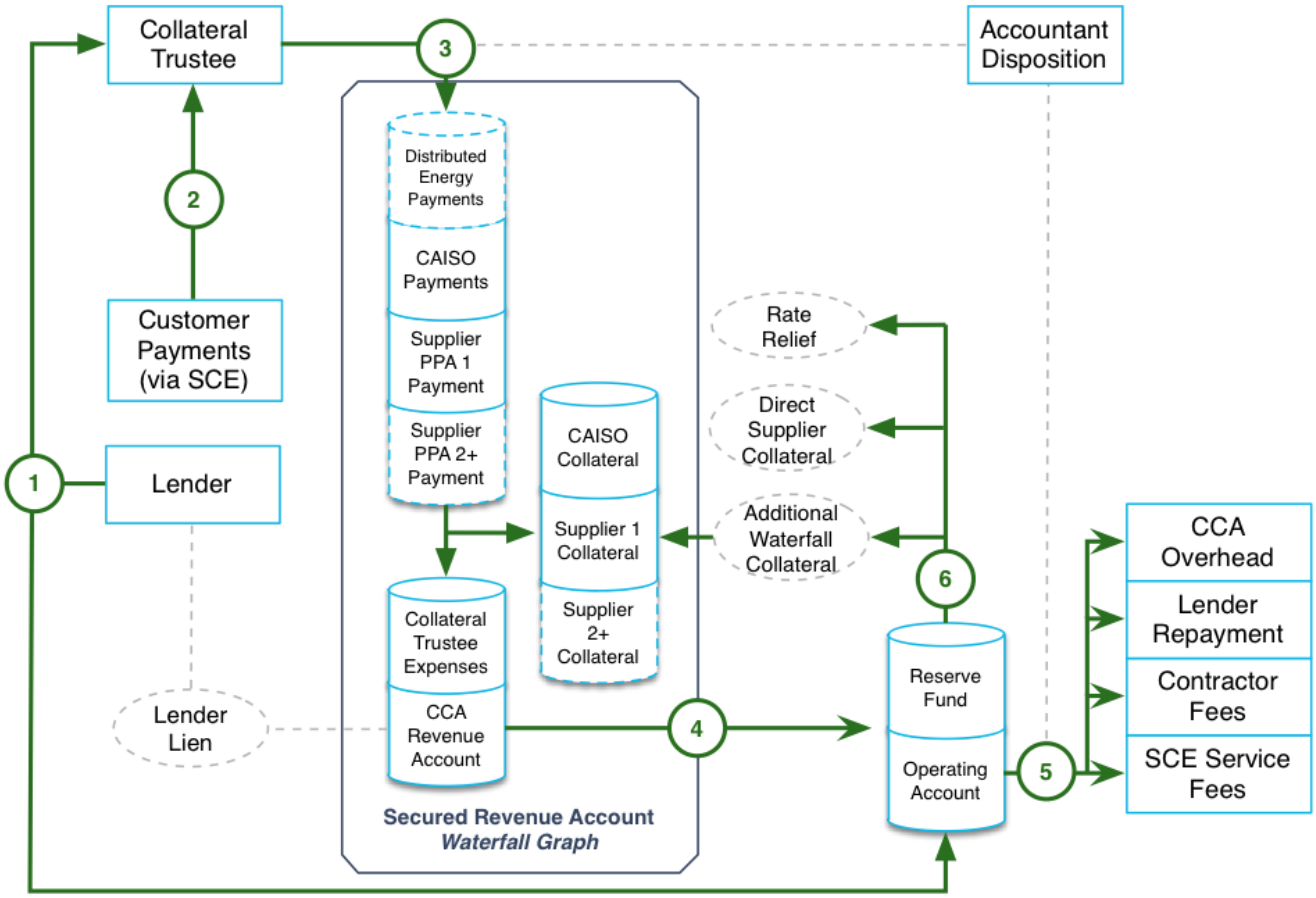
Additionally, Lancaster's design anticipated the seniority of a future on-bill repayment mechanism, in which loans are used to finance Distributed Energy Resources and repaid over time by customer bill payments.

We recommend this mechanism be expanded to also permit a broader range of DER-related repayment mechanisms: for example, Marin Clean Energy recently executed an agreement with a battery storage project developer, which had executed an agreement with a customer to split the savings derived from the use of the batteries on the customer's facility. (A common use for batteries is to be discharged at the right time of the month to subsequently lower peak demand charges.) The CCA is facilitating this payment by charging the customer directly for the payment owed to the project developer (i.e. a portion of the customer's bill savings in given month), receiving the payment collected by the utility, and reimbursing the project developer.

### *Anticipation of Self-Management Cash Flow Requirements*

We have further incorporated features developed by the Redwood Coast Energy authority which add accounts satisfying the collateral and regular payment obligations that occur when the CCA or its power management contractor is transacting in the CAISO market.

## *Representative Waterfall and CCA Cash Flow Diagram*




Note that certain collateral accounts may also be maintained independently of this waterfall and managed through separate inter-creditor agreements, but are included here for the sake of illustration.

The following narrative corresponds to the sequential numbered stages in the chart above:

1) The initial lender capitalizes the operating account and secured revenue account, as managed by the Collateral Trustee, to provide for any deposits required by suppliers under contract to the CCA to provide future. Most CCAs have executed bank loans for this capital; South Bay Clean Power will be requiring the power management contractor to provide or arrange for this capital.
2) Subsequent payments received from SCE from CCA customers are deposited directly into this account on a rolling, ongoing basis.
3) The Collateral Trustee then ensures that funds received are distributed into the secured accounts in line with seniority and contracted minimum requirements. These accounts satisfy collateral obligations or are revenue accounts that are disbursed (down to contracted minimum balances) to cover monthly payment obligations.
4) Excess funds are then collected in the CCA's secured revenue account, and subsequently disbursed outside the waterfall, deposited into the reserve fund or operating account controlled directly by the CCA.

5) The operating fund is then drawn down to pay contractors, SCE service fees, debt payments and overhead expenses.
6) The reserve fund may be used to fund collateral obligations for new suppliers, either within the waterfall or through alternate arrangements with suppliers, or for customer rate relief.

Note that:

1) These transactions are regularly confirmed and approved by the CCA using dispositions from its accountant and power management contractor (or staff): invoices from suppliers will be reviewed and verified, the CCA will provide a distribution certificate instructing the Collateral Trustee to disburse an amount will be provided to suppliers for review, any disagreements will be negotiated in good faith and resolved in accordance with supply contracts, and the certificate will be sent to the Collateral Trustee, which will release the funds owed.
2) While the initial lender lacks a secured revenue account devoted to debt repayment, the lender is granted a lien on the CCA's revenue account (to be exercised in the event of nonpayment from the CCA-controlled operating account).
3) The CCA will be required to execute a deposit account control agreement which directs SCE to deposit any payments directly into the secured revenue account.
4) A first priority security interest in and lien upon the various relevant secured accounts will be given to the power management contractor and suppliers.
5) The contracts governing each secured account should anticipate reassessments on the minimum balances to be maintained, as the CCAs portfolio and credit exposure evolve or fluctuate over time.

## Appendix: Southern California Edison "CCA Handbook"

Southern California Edison, uniquely among California's investor-owned utilities, has summarized and maintains a "CCA Handbook" that details how a CCA is implemented and operated in coordination with the utility.

Southern California Edison's CCA Handbook is divided into the following chapters:

Chapter 1: Welcome, Preface, & CCA Overview

Chapter 2: Open Season

Chapter 3: Establishing Community Choice Aggregation Service

Chapter 4: Enrollment - Completing SCE's Forms

Chapter 5: Setting Up Electronic Communications & Compliance Testing

Chapter 6: CCASRs & Customer Notifications

Chapter 7: Metering Under CCA

Chapter 8: Information Guides for Electronic Transactions

Chapter 9: Billing Under CCA

Chapter 10: Payments and Remittances in CCA

Chapter 11: Terminating CCA Service – Voluntary or Involuntary

Chapter 12: Load Profiling & Distribution Loss Factors

Chapter 13: Usage Data Reconciliation

Chapter 14: Special Conditions

Chapter 15: Service Fees and Non-Energy Billing

Chapter 16: Resolving Disputes

Chapter 17: Post-Enrollment Opt-Out, Re-Entry, and Switching Exemptions

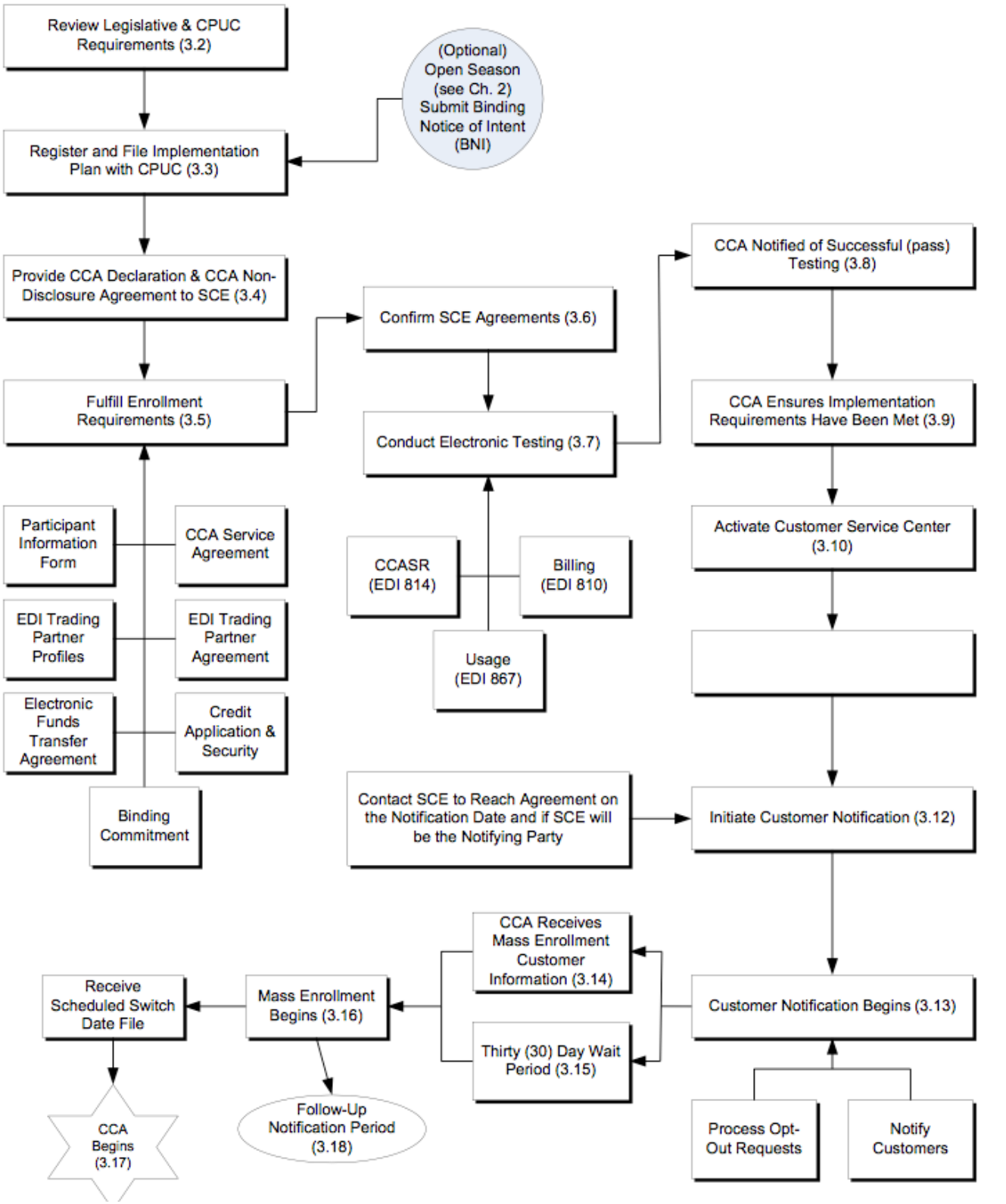
Chapter 18: Credit Policy for CCA's

The CCA Handbook is available online, and accompanied by a variety of additional supporting information and documentation (i.e. template forms, tariffs that are relevant for CCAs, etc.):

- [https://www.sce.com/wps/portal/home/partners/partnerships/community-choice-aggregation/getting-started]

As an example of the detailed nature of the content, below is a diagram showing the various tasks necessary to establish CCA service:

## Diagram Overview of Establishing Service in Southern California Edison Territory



## Appendix: Southern California Edison & Distributed Energy Resources

Distributed Energy Resources comprise distributed renewable generation resources, energy efficiency, energy storage, electric vehicles, and demand response technologies. These technologies are installed "behind the meter", in other words on customer properties.

The customers and businesses that choose to install Distributed Energy Resources, and the companies that finance, construct, aggregate and manage these assets, are creating the new energy infrastructure. They will sell power products to Southern California Edison as our distribution utility, to the South Bay Clean Power CCA, and directly into the wholesale electricity market overseen by CAISO — and create great value in so doing.

To effectively plan for and manage this long-term transition, South Bay Clean Power's staff and contractors and their counterparts at Southern California Edison will need to collaborate on a number of initiatives, collectively designed to:

1) Accelerate the transition to renewable resources while minimizing the investment in traditional fossil-fuel plants and transmission lines.
2) Simultaneously accelerate the build-out of intelligently-managed Distributed Energy and the upgraded, well-designed distribution grid necessary to support this evolution.

Southern California Edison has recently published a number of detailed documents mapping out the key concepts and detailed functionality required to integrate Distributed Energy Resources into the utility's planning and operations.

Two of the most detailed documents are referenced below, first published in early 2016:

"Grid Modernization Distribution System Concept of Operations" available online at:

- [https://www.edison.com/content/dam/eix/documents/innovation/SCE%20Grid%20Modernization%20Concept%20of%20Operations%201.17.16b.pdf]

"Grid Modernization Initiative: Grid Management System Architecture", available online at:

- [https://www.edison.com/content/dam/eix/documents/innovation/SCE%20Grid%20Management%20System%20Architecture%202.1.16b.pdf]

Southern California Edison is also engaged in two key regulatory proceedings and accompanying pilot initiatives on the integration of Distributed Energy Resources:

- "Distribution Resources Planning" — Rulemaking 14-08-013
- "Integrated Distributed Energy Resources" — Rulemaking 14-10-003

South Bay Clean Power should proceed with cautious optimism that CCAs and SCE can collectively navigate this period of change. Relevant staff and contractors of South Bay Clean Power should be familiar with these concepts, proceedings and plans, and prepared to implement corresponding and complimentary initiatives for the CCA while maintaining a high level of engagement with their counterparts at Southern California Edison that reflects a shared understanding on how best to integrate Distributed Energy into both parties' respective spheres of responsibility in energy planning and operations.

## Appendix: CCA Regulatory Issues & Utility Non-Bypassable Charges

The projected acceleration in load departing to Community Choice promises to impact many aspects of California's power sector, particularly in coordination on reliability planning and distributed energy programs, cost recovery and State regulatory oversight of CCAs. The California Public Utilities Commission (CPUC) recently convened an 'en banc' workshop to discuss these and other issues. The agenda and recording is available online at:

- [http://www.adminmonitor.com/ca/cpuc/en_banc/20170201/]

A particularly important issue is that the CPUC is under statutory obligation to ensure that CCA departing load does not impose additional costs on bundled service customers who remain with the utilities.

The Commission currently does so by assigning volumetric charges directly to CCA customers to recover estimated utility stranded costs (above-market costs for generation, particularly RPS contracts), through a mechanism called the "Power Charge Indifference Adjustment" (PCIA). This is set annually as part of the utilities' annual Energy Resource Recovery Account (ERRA) proceedings. CCA customers are not liable for above-market costs from contracts entered into after their departure from utility service; to track the contracts applicable to each CCA, utility portfolios are "vintaged" by year and the PCIA calculation conducted for each vintage. The utilities are also allowed to recover costs for capacity investments that benefit CCA customers (either prior to or after departure to CCA service) by directly charging CCA customers through the Cost Allocation Mechanism (CAM). These are areas of some contention, currently being discussed in regulatory workshops.

As the volume of load departing to CCA service grows, at some point CCAs will need to purchase power and dispatch facilities currently owned by or under contract with the utilities. There is no regulatory process to govern this, which may become a barrier to the practical launch of new CCA programs, or to the gradual enrollment of customers in large CCA programs, at some point in the near future.

The CPUC has recently convened a "PCIA Working Group" to discuss these and other issues. Meetings are ongoing, with reports back to the CPUC expected in April of 2016.

For further context and detailed information, the "PCIA Homework" filing submitted on behalf of the County of Los Angeles by Community Choice Partners provides an overview of these issues. It is available online at:

- [http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=10569]

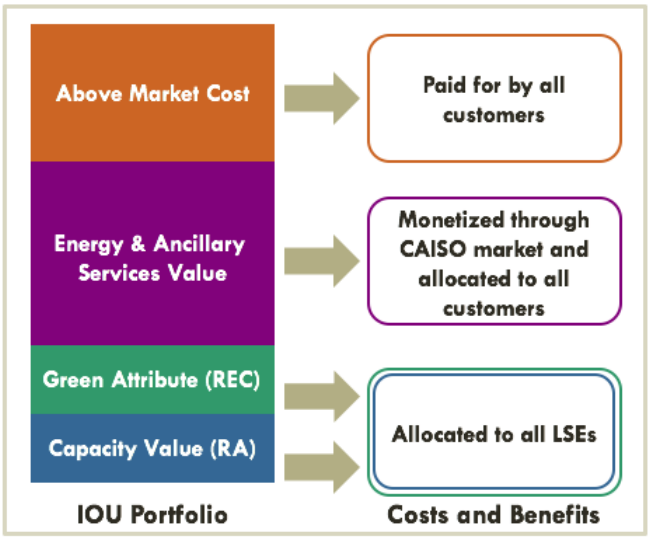
The PCIA calculation relies on administratively set benchmarks to estimate the value of RPS and RA attributes of utility contracts. At a high level, the estimated indifference charge recouped from CCA customers is calculated on a year-ahead basis, and estimates stranded costs by subtracting forecasted energy market prices and administratively set benchmark prices for RPS and RA attributes from the utility's portfolio cost. There is no true-up mechanism, and these benchmarks and price forecasts may be inaccurate — as such, the PCIA is contentious for all parties involved.

To reform the PCIA in advance of significant volumes of load departing to CCA service, the utilities have recently proposed the "Portfolio Allocation Methodology" (PAM). Under the mechanism, CCAs would be allocated their customers' proportional share of RPS and RA attributes from PCIA-eligible

utility contracts. This would decrease CCA procurement obligations. The energy would be sold onto the day-ahead market. The indifference cost, proportionally allocated directly to CCA customers through a nonbypassable charge, would be forecasted as the difference between the contract price held by the utility and the price received from the market, and then trued-up annually based on actual costs and received market prices. The slides below summarizes this mechanism:

| | |
|---|---|
| **OBJECTIVE** | The Portfolio Allocation Methodology (PAM) approach is intended to replace the "above-market" construct, which is based on administratively-set benchmarks, in order to ensure bundled customer indifference. |
| **MARKET-BASED DETERMINATION OF ACTUAL COSTS** | Pro-rated net costs allocated to customers would be determined on a vintaged portfolio basis, based on forecast portfolio costs and market revenues, and would be trued up to reflect actual costs and revenues. |
| **EQUITABLE ALLOCATION OF ACTUAL BENEFITS** | Load Serving Entities (LSEs) would receive a pro-rated allocation of resource attributes, including Resource Adequacy (RA), Renewable Energy Credits (RECs), and any future attributes. |

## PAM OVERVIEW




**BENEFITS**

- Eliminates administratively-set benchmarks
- Clear, transparent, and effective
  - ☑ *No longer based on confidential data and market estimates*
- Includes a true-up to reflect actual costs and value
- Meets statutory indifference requirement

**A Portfolio Allocation Methodology (PAM) replaces inaccurate and contentious administrative prices with true market valuation and an allocation of attributes. It is consistent with State Law, equitable to all customers and is effective at any level of load departure.**

# RESOURCES

## INCLUDED RESOURCES

- Contracts
  - PPAs that are ineligible for CAM (ex: RPS)
  - New contracts > 1 year
  - CTC-Eligible Contracts
    - Pre-1996 QF Legacy
    - Legacy Water district contracts
- UOG Facilities
  - Pre-1997 (Nuclear & Hydro)
  - Post-2002 (Fossil, Solar, Fuel Cells, Non-Distribution storage)

## EXCLUDED RESOURCES

- CAM Resources
- Contracts ≤ 1 year
- Resources eligible for broad allocation (e.g., BioRAM/Tree Mortality)

**SUMMARY:** Include all resources in bundled service generation portfolio, including CTC-eligible resources; exclude CAM-eligible resources.

# CALCULATION OF NET COSTS

## COSTS

- Contract Costs
  - PPA costs
  - GHG compliance instrument costs
- Indirect Costs
  - Fuel (e.g., natural gas, water, etc.)
  - Hedging
- UOG Costs
  - Capital
  - O&M
  - New Capital Upgrades

**Excluded Costs:**

- Congestion Revenue Rights
- Gas Storage

## Market Revenues

- Energy and Ancillary Service Revenues (all markets)
- Net CAISO grid management revenues/costs, unit commitment revenues/costs, and "make whole" revenues/costs

**SUMMARY:** Initial rate based on forecast of resource costs and revenues/charges from CAISO market; trued-up annually.

## Appendix: CCA Service Contractors

South Bay Clean Power should compile and maintain a list of prospective companies which may bid to provide services to the CCA. Existing public power entities, such as local municipal utilities in Los Angeles County, operating CCAs, and the Southern California Public Power Authority (SCPPA) maintain lists of such companies, and should be contacted by staff.

A preliminary list of companies is shown below:

1) The Northern California Power Agency (NCPA)
2) The Energy Authority (TEA)
3) Alliance for Cooperative Energy Services Power Marketing (ACES)
4) ZGlobal Power Engineering & Energy Solutions
5) Tenaska Power Services Co.
6) 3 Phases
7) APX, Inc.
8) EDF Energy Services, LLC
9) Customized Energy Solutions, Ltd. and Galt Power
10) Pilot Power Group, Inc. & EDMS, LLC
11) Calpine Energy Services (formerly Noble Americas Energy Solutions)
12) AGR Group, Inc.
13) Enghouse Interactive
14) Gas and Power Technologies, Inc.
15) Energy Exemplar, Ltd.
16) Olivine, Inc.
17) DNV GL
18) Comverge, Inc.
19) EnerNoc, Inc.
20) Public Financial Management, Inc.
21) Willdan Financial Services
22) EQ Research
23) Keyes, Fox & Wiedman LLP
24) Braun, Blaising, Mclaughlin & Smith PC
25) Open Energy Efficiency, LLC
26) C3 IoT
27) Schneider Electric USA
28) Maher Accountancy
29) EnerNex, Inc.
30) Robertson-Bryan, Inc.

31) MRW & Associates, LLC
32) EES Consulting
33) The Local Energy Aggregation Network (LEAN)
34) Pacific Energy Advisors, Inc.
35) Green Ideals
36) MIG, Inc.
37) Print2Assist
38) AD-Vantage Marketing, Inc.