MRW & Associates, LLC

Response to Request for Information for a Community Choice Energy Feasibility Study

Submitted to
City of Huntington Beach, California

MRW & Associates, LLC
1736 Franklin Street, Suite 700
Oakland, CA 94612
Tel: (510) 834-1999

Contact: Mark Fulmer
510-834-1999, ext. 240
mef@mrwassoc.com

October 18, 2019

Table of Contents

REQUEST FOR PROPOSAL

VENDOR APPLICATION FORM

TYPE OF APPLICANT: ☒ NEW ☐ CURRENT VENDOR

Legal Contractual Name of Corporation: MRW & Associates, LLC

Contact Person for Agreement: Mark Fulmer

Corporate Mailing Address: 1736 Franklin Street, Suite 700

City, State and Zip Code: Oakland, CA 94612

E-Mail Address: mef@mrwassoc.com

Phone: 510-834-1999 Fax: 510-834-0918

Contact Person for Proposals: Mark Fulmer

Title: Principal E-Mail Address: mef@mrwassoc.com

Business Telephone: 510-834-1999 Business Fax: 510-834-0918

Is your business: (check one)

☐ NON PROFIT CORPORATION ☒ FOR PROFIT CORPORATION

Is your business: (check one)

☒ CORPORATION
☐ INDIVIDUAL
☐ PARTNERSHIP
☐ LIMITED LIABILITY PARTNERSHIP
☐ SOLE PROPRIETORSHIP
☐ UNINCORPORATED ASSOCIATION

Names & Titles of Corporate Board Members
(Also list Names & Titles of persons with written authorization/resolution to sign contracts)

Names	Title	Phone
Mark Fulmer	President	510-834-1999
David Howarth	CFO	510-834-1999

Federal Tax Identification Number: 26-4500748

City of Huntington Beach Business License Number: _____
(If none, you must obtain a Huntington Beach Business License upon award of contract.)

City of Huntington Beach Business License Expiration Date: _____

1736 FRANKLIN STREET
SUITE 700
OAKLAND, CALIFORNIA
94612

MRW & ASSOCIATES

TEL 510.834.1999
FAX 510.834.0918
mrw@mrwassoc.com

October 18, 2019

City of Huntington Beach
Via PlanetBid

To Whom It May Concern,

MRW & Associates, LLC, (MRW) is proud to offer this response to the City of Huntington Beach's Request for Information (RFI) seeking a Community Choice Energy (CCE) Feasibility Study. MRW's proposal follows the response structure requested in the RFI:

Section 1. Project Background and Summary. This section describes MRW's understanding of the City, the work requested by the City, and the objectives to be accomplished by this work

Section 2. Methodology. This section describes MRW's recommended approach to complete the Feasibility Study.

Section 3. Qualifications. This section provides references and describes MRW's work on similar projects and the key personnel MRW anticipates assigning to the project.

Section 4. Fee Information. This section presents MRW's price quote and hourly billing rates.

The MRW team is committed to providing the City of Huntington Beach with independent, impartial analysis. MRW has not performed business for any Investor Owned Utility (IOU) in the last 17 years, nor has it ever performed work for Southern California Edison. MRW has conducted no business on behalf of the IOUs since the inception of CCE within California. MRW has performed numerous CCE analyses, not all of which have shown CCEs to be financially viable.

The pricing proposed in MRW's response to the RFI will remain valid for a minimum period of 180 days from the date of submission to the City.

I look forward to hearing from you and welcome the opportunity to work with you on this exciting project.

Best Regards,

Mark Fulmer

1. Project Background and Summary

MRW is pleased to respond to the City's RFI regarding a CCE feasibility study. MRW is familiar with the City's long-standing commitment to sustainability, energy efficiency, and renewable energy technology. With many CCEs already operating or in the process of coming online across the State of California, it is logical for the City to evaluate whether forming a CCE is an appropriate vehicle to pursue its future sustainability and economic goals. MRW has deep experience with CCE formation, operation, and regulatory issues in California and looks forward to assisting the City in its evaluation.

The City's RFI seeks an evaluation of whether implementation of a CCE program makes economic sense and will achieve the City's local objectives. This evaluation follows up on the City's initial inquiry into CCE in 2017, which was tabled for future consideration (now).

Ultimately, this evaluation will turn on whether operating a CCE program subject to constraints for economic savings and/or local energy programs is financially feasible. Assessing the financial feasibility of CCE formation relies on analysis of loads that the CCE would serve, the rates offered by the incumbent investor-owned utility (i.e. SCE) that the CCE must compete against, the cost to the CCE of buying power, and other startup and operating costs to the CCE.

MRW generally understands that the City would like to understand the nature of the loads in several specific customer groups within its potential CCE service area, the current electricity costs for those loads under SCE's electric rates, the financial feasibility of serving this load through a CCE, and the opportunities for partnering with other entities to offer CCE service. The RFI expresses interest in both overall CCE-related cost savings as well as savings for the specific customer groups to be examined in the initial load analysis. In addition, MRW understands that the RFI requires specific information regarding project management approach, project schedule, strategies to ensure client satisfaction, and requirements for City staff support.

The project laid out in the RFI is complex in that it contains a number of components that all impact the estimated community savings due to CCE implementation. Understanding the interrelationships of all the components and using consistent and coherent assumptions throughout are critical to delivering a quality work product.

For example, a critical component is that the wholesale power market and price assumptions are consistent between the CCE and SCE. While there are reasons that one might have lower or higher costs than the other for a particular product (e.g., CCEs can use tax-free debt to finance generation projects while the utilities cannot), both will participate in the wider western US gas and power markets and therefore will be subject to the same underlying market forces. To decouple these assumptions, such as simply escalating utility rates while deriving the CCE rates using a bottoms-up approach, will result in erroneous results.

Beyond the core load and SCE rate analysis, there are other significant factors to consider as well. The parameters that constrain the CCE's supply portfolio (*e.g.* specific renewable

technology preferences or preferences to exclude unbundled renewable energy credits (unbundled RECs)) will in turn impact the CCE's energy supply costs. Additional factors such as staffing size, CCE bond requirements, and SCE surcharges (*e.g.* the Power Charge Indifference Adjustment (PCIA)) all impact the CCE program's costs. A litany of market and policy related risks must also be weighed to assess the lasting feasibility of the potential CCE program.

MRW is aware that the City's 2017 General Plan Update included greenhouse gas reduction strategies, including CCE formation and other energy-related efforts.[1] This feasibility study would be an opportune time for the City to examine greenhouse gas reduction targets for the CCE through analysis of energy supply options and their impact on the savings analysis. As discussed in detail in Section 3, MRW is able to incorporate multiple energy supply scenarios and can customize the energy supply portfolios used to reflect specific resource procurement or greenhouse gas reduction targets that the City may have. Furthermore, MRW is aware that the City has already taken measures to pursue clean energy opportunities that it may wish to integrate into a City CCE's planning activities. For example, both the City's Property Assessed Clean Energy (PACE) program and its Advanced Energy Community project may directly inform the City's plans to offer energy efficiency and/or local clean energy generation opportunities through its CCE. MRW is able to incorporate specific City plans or projections regarding these resources into its feasibility analysis.

While the RFI requests a comparison between SCE rates and market prices to determine potential CCE savings, MRW strongly recommends that the City consider the additional factors described above in a pro forma financial analysis based on MRW's prior experiences with CCE implementation in California. The Section 3 below discusses MRW's proposed approach to this analysis in detail.

[1] https://www.huntingtonbeachca.gov/files/users/planning/HB-GPU_Adopted-October-2017.pdf and https://www.huntingtonbeachca.gov/files/users/planning/Volume-III-Appendix-G-GHG-ReductionProgram.pdf

2. Methodology

A. Description of Project Plan

MRW proposes to perform the work requested by the City as described in the subsections below. MRW proposes to prepare a report describing the data, analytical approaches, and results used in assessing the City's electric loads and potential CCE savings, along with the requested discussion of potential CCE partnerships and list of CPUC CCE Implementation Plan filing requirements.

B. Scope of Work

1. Load Study and Forecast

Per the RFI, MRW will analyze monthly customer load data with the City of Huntington Beach as provided by Southern California Edison (SCE). The first step is acquiring the data. This requires the Mayor or City Manager to formally request the data. SCE typically takes 4 to 8 weeks to respond. Therefore, MRW recommends that this request be made as soon as possible, before the City retains a consult, so that MRW or the selected consultant can begin work upon execution of the contract. MRW can assist, if needed, with drafting the data request, pro bono.

SCE will provide data by rate class only; it does not provide data on individual customers or "customer types." Therefore, MRW will work with the City to estimate or acquire load data for detailed market segments such as City facilities, other governmental facilities, and hospitals. MRW assumes that the City has information on its own loads. While SCE provides a mechanism for 3rd parties such as MRW or the City to access loads for other customers, MRW has found it to be cumbersome and not likely to be useful. Other options would be to estimate the usage based on other metrics such as typical energy use by square foot of space or building type.

The load study will translate the retail loads into an aggregate load profile for the CCE which the energy supply portfolio must serve. Because MRW expects SCE to only provide monthly load data, MRW will have to rely on SCE's class-average hourly load profiles, which will be aggregated into an overall CCE load profile.

Next, MRW will develop a load forecast based on the load data provided by SCE. MRW will forecast growth rates based on the California Energy Commission's annual electric demand forecast. Additionally, MRW will coordinate with the City Planning Department to acquire any city-specific growth projections or economic activity forecasts that might exist. MRW can also work with City staff to incorporate specific energy efficiency or customer-sited distributed generation targets or projections the City has developed.

MRW will also account for loads associated with direct access customers, as well as include an input to explore the changes in load with differing CCE opt-out percentages.

This load analysis feeds into the rest of the project in two ways: first, it provides the customer base over which all the CCE's costs must be collected. That is, one needs to know the sales estimates in order to develop a CCE rate. Second, the load analysis is the foundation upon which the supply scenarios are built. It specifies when power will be needed so that the unique output characteristics of renewable generating supplies—and other supplies—can be best used to meet the CCE's load.

2. Economic Analysis of Huntington Beach Electric Usage

Once the City's electric loads have been broken out into specific categories in the load study and analysis, it is a straightforward exercise to provide economic analysis of those loads under SCE's electric rates. Specifically, MRW proposes to analyze energy costs associated with each category of load based on SCE's currently applicable rates. However, SCE's rates are far from static; they change at least once a year, if not two or three times. As part of the economic analysis, MRW will apply the loads developed in the prior task to a 10-year forecast of SCE rates so as to not only provide a right-now snapshot but an understanding of how they electricity costs are likely to change over the next decade.

3. Savings Analysis of City of Huntington Beach CCE Electric Service Compared to SCE Electric Service

MRW proposes to estimate the overall customer savings to City CCE customers compared to SCE electric service as described in detail in the subsections below, which separately address 1) analysis of energy supplies, 2) rate analysis and comparison of SCE and CCE forecasted rates, and 3) pro forma financial analysis to derive annual CCE cash flow year-by-year (over the course of five- and ten-year terms), which will provide the best indication of the savings to customers that the CCE can sustainably provide.

a) CCE Energy Supplies

The City has not specified particular energy supply portfolios, such as renewable energy targets, that it would like included in the requested rate comparison and savings analysis. MRW typically conducts two or more scenarios for potential CCEs to allow for comparison of meeting or exceeding the incumbent investor-owned utility's renewable percentage. To the extent that the City would like to develop scenarios specific to the greenhouse gas reduction targets discussed in the City's 2017 General Plan Update, MRW can work with the City to develop appropriate energy supply portfolios and would be able to incorporate one or more such scenarios into its modeling. For the City, MRW proposes to, at a minimum, analyze two options so that the City can compare the likely minimum and maximum renewable energy percentages that the City could pursue: one consistent with SCE's current RPS content, and one where the City could achieve 100% renewable energy content by 2035.

b) Rate Analysis and Comparison

The CCE and SCE rate forecasts are critical in assessing the CCE's financial feasibility. MRW has significant expertise in rate forecasting and will build on previously developed in-house rate models to forecast in detail rates for the CCE and comparable SCE rates in five- and ten-year timeframes.

The MRW team will forecast SCE's rates in a bottoms-up fashion, using assumptions consistent with those used to derive the CCE rates. MRW's rate model provides year-by-year rate changes for up to 30 years, reflecting changes in wholesale power markets, changes in renewable power costs, and SCE's supply portfolio. We account for SCE's actual power supply portfolio, explicitly modeling the utility's portfolio of renewable, gas-fired, hydroelectric and nuclear resources. Various scenarios with differing cost elements can be considered, such as higher or lower natural gas prices, varying hydroelectric output, and rate restructuring. Using the past decade's worth of SCE tariffs, MRW will assess the City's viability to withstand longer term economic downturns.

A particularly challenging element to forecast is the Power Charge Indifference Amount (PCIA) that SCE charges to all CCE customers. While the RFI suggests a "rough estimate" of the PCIA, MRW recommends a bit deeper analysis. The PCIA is a function of market prices and SCE's procurement portfolio, both of which MRW explicitly models. Linking the PCIA to the other assumptions in analysis—such as the market prices—is critical to having sound picture of the economic viability of the CCE. The PCIA is built into the MRW forecasting models and including this more detailed analysis does not increase MRW's bid.

Mr. Fulmer, who will head MRW's team, is one of California's primary experts on these matters and has been involved with the development of exit fees since their inception in 2002. In addition, Ms. Casas at MRW regularly provides PCIA forecasts to clients.

c) Pro Forma Analysis

The pro forma model is the heart of the economic analysis. It uses the costs from the supply analyses and CCE operational assumptions to derive the annual cash flow, from which the CCE rates are derived. Without knowing the cost to operate the CCE—beyond the simple cost of market power—a meaningful economic comparison to SCE's rates cannot be made.

Beyond the power costs, the MRW CCE pro forma model includes the cost of compliance with State renewable and resource adequacy requirements, CCE costs such as startup costs (e.g. loans made to the CCE by city agencies), cost of capital, administrative and general operational costs, costs associated with uncollected accounts, and the development of cash reserves.

MRW will use its pro forma model to analyze the economic feasibility of a CCE in Huntington Beach. The pro forma will show year-by-year cash flows over the course of five and ten years. The model shows expenses to the CCE (broken down by cost category) and total average cost per kilowatt-hour provided. MRW will use known and predictable cost of service variables and examine the impacts of customer phase-in over time.

The MRW model is built to allow for analysis of the financial feasibility subject to a series of sensitivity analyses. At the City's option, MRW will examine key sensitivities to develop several possible cases that demonstrate the range of likely results of the analysis.

C. Orange County CCE Consortium Formation

The City has requested a synopsis of available options for cooperating with other municipalities in implementing CCE service, such as partnering with other municipalities in a CCE consortium. In coordination with City Staff, MRW will help the City understand the options for and implications of implementing a CCE via a county-wide consortium.

We believe that good model to look to for such a consortium is the California Choice Energy Authority (CCEA). CCEA has been described as a "JPA-light," wherein member cities can set their own rates and policies but rely upon CCEA for many administrative activities, such as billing, procurement, regulatory advocacy and compliance. CCEA is administered by the City of Lancaster—the first CCE entity in SCE's service territory—and has found a niche serving smaller communities desiring in CCE but lacking the staffing to fully operate a CCE program.

While Huntington Beach is large enough to form its own city-enterprise based CCE, joining with neighboring Orange County cities (or perhaps even Orange County itself) may provide economic or other benefits.

MRW will provide information regarding potential CCE governance structures, including operation by individual one or more individual jurisdictions, by independent regions, collectively by a consortium, and by a third-party administrator.

D. California Public Utilities Commission CCE Implementation Plan Requirements

MRW has experience with the CPUC CCE Implementation Plan requirements and will provide a summary of relevant information and requirements to the City. MRW's analysis of potential CCE financial savings for the City of Huntington Beach will include forecasted PCIA charges, consistent with the RFI's request for an estimate of PCIA charges. MRW will present PCIA charges as a standalone item in addition to integrating the charges into the savings analysis.

E. Project Management Plan and Coordination with City Staff

Mr. Fulmer will be the overall project manager and primary point of contact of the City. From MRW, Mr. Howarth will lead the power portfolio scenario construction and assessment and Ms. Casas will lead the rate and pro forma modeling.

MRW envisions an initial kick-off meeting with City Staff and any designated stakeholders. At that meeting, MRW will present its anticipated work schedule, data needs, and communication paths. This will allow MRW and the City to identify appropriate staff members for follow up and further discussion regarding data needs and policy-related feedback. Based on the outcome of that meeting, MRW will prepare a detailed schedule of intermediate deliverables culminating in the Final Report, in addition to the milestones and deliverables discussed below. Specific areas where MRW is likely to require City staff support include: 1) in obtaining relevant load data from SCE and obtaining data from SCE, the City, or other entities (e.g. hospitals) about

the specific loads for which the City has requested analysis; 2) specific energy supply options desired by the City; 3) City plans to enact energy efficiency or distributed generation programs; and 4) City forecasts of economic activity during the study period and/or other economic data that would inform MRW's load analysis.

MRW also recommends weekly or biweekly status calls/webinars between MRW and City Staff. In those calls, MRW would update City Staff on the task status, provide interim work products, and allow for course corrections to best meet the evolving needs of the City. This process will ensure that MRW satisfies the City's needs and performs the requested Scope of Work in accordance with the City's expectations. Even outside of these structured calls, MRW staff will be available to respond to questions via telephone, email or, if needed, in person in Huntington Beach to ensure client satisfaction.

MRW proposes three on-site meetings and presentations with City Staff, the City Council (or other decisionmakers), and other stakeholders. Based on prior experience, MRW recommends the following:

Meeting 1: Kickoff meeting with City Staff to finalize the project plan.

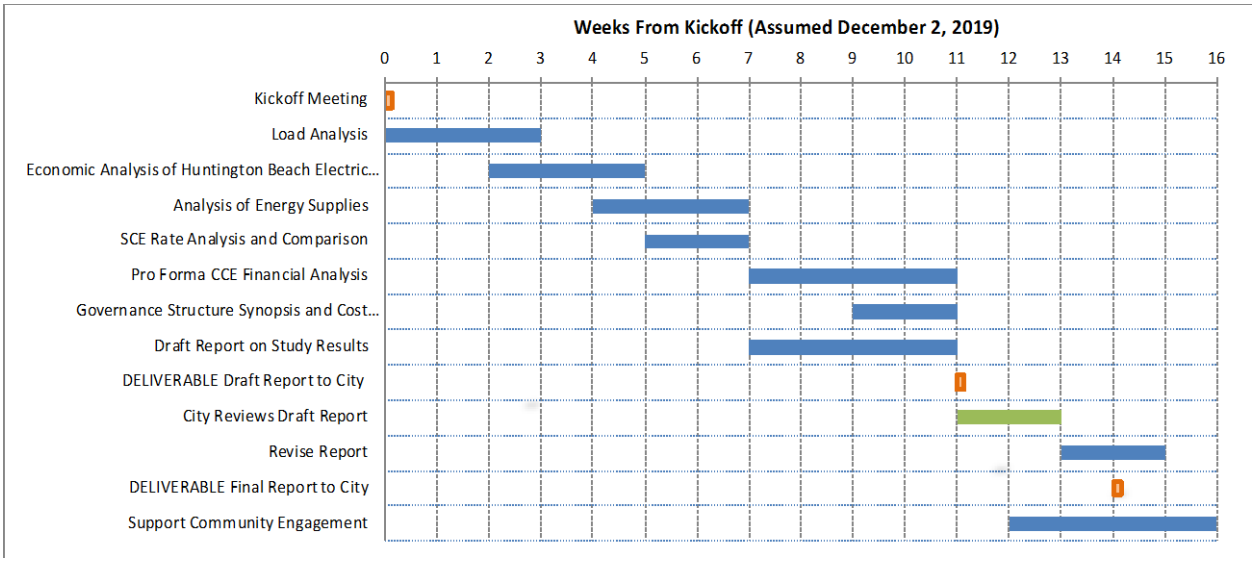
Meeting 2: MRW would present its draft results to City Staff for questions and comments. This would allow MRW to incorporate comments from the Staff or other stakeholders into the final report and business plan.

Meeting 3: MRW would present its final results to the City Council during a Study Session.

F. Schedule of Milestones, Associated Deliverables, and Payments

MRW's anticipated schedule for the tasks and deliverables are shown in Figure 1, below. Meetings and the anticipated dates of those meetings are shown in orange. MRW recommends that the three meetings be held on December 2 (Kickoff meeting); February 18 (presentation of draft results); and March 10 (presentation of final results). Anticipated task competition dates consistent with the figure below are shown in the last column of Table 2 on page 19.

Figure 1. Anticipated Project Schedule and Deliverables



4. MRW Qualifications

A. MRW Background

MRW is internationally recognized for its broad expertise in electric power and fuel markets. We combine an in-depth knowledge of these markets with rigorous economic and technical analysis to help our clients assess market opportunities, develop business strategies, and address regulatory issues.

MRW offers its clients a comprehensive portfolio of consulting services in the areas of power market analysis, regulatory and litigation support, natural gas market analysis, and retail market support. Because we maintain a singular focus on the energy industry, our industry expertise is both deeper and broader than many other consulting firms. We understand the strategic implications of evolving regulatory models, emerging technologies, and changing market dynamics and we put this knowledge to use to serve our clients' interests. Practical research, qualitative and quantitative analysis, and industry expertise underpin all of MRW's work and ensure that our client recommendations are sound.

Established in Oakland, California, in 1986, MRW has built a solid reputation for delivering local insights on power and fuel markets in the western United States and successful intervention in legislative and regulatory proceedings on clients' behalf. MRW continues to deliver high-quality market insights, analysis, and client support on a national and international level. The company has undertaken engagements in more than 20 different states, including nearly every state in the western United States. The company maintains a strong focus on California markets and regulatory structures. The location of the company office in Oakland, California, facilitates our active participation in proceedings at the CPUC, the California Energy Commission (CEC), and the California Independent System Operator (CAISO).

MRW's client base includes municipalities, consumer advocates, major financial institutions, private power developers, power marketers, Fortune 500 industrial companies, commercial end-users, natural gas pipelines and storage service providers, regulatory agencies, and other strategic players in the energy sector. MRW's team of professionals includes specialists in renewable energy, power market modeling, financial analysis, regulatory processes, utility rate design, legislative analysis, commodity procurement, energy use analysis, contract negotiations, transmission planning and pricing, and strategic planning.

As discussed in greater detail below, MRW has been deeply involved in the development of CCEs in California. Table 1, below, shows the cities and counties MRW has advised on joining or forming a CCE. The table highlights MRW's, primarily Mr. Fulmer's, experience presenting results and options to local decision makers and the impacted communities.

Table 1. MRW CCE Formation Experience

Client	CCE	Products	Presentations to Decision makers	Presentations to Community
City of Long Beach	TBD	Feasibility Risk Analysis	☑	
City of San Diego	SDRCCEA	Implementation Plan Business Plan Peer Review	☑	☑
City of Corona	TBD	Feasibility Risk Analysis		
City of Palmdale	CCEA	Org. Options Risk Analysis	☑	
Contra Costa Co.	MCE	Feasibility Org. Options Risk Analysis	☑	☑
Alameda County	EBCE	Feasibility Org. Options Risk Analysis	☑	☑
Santa Barbara County	Multiple and ongoing	Peer Review Risk Analysis	☑	
CleanPowerSF	CleanPowerSF	Business Plan	☑	
Santa Clara County	SVCE	Peer Review Risk Analysis	☑	
San Mateo County	PCE	Peer Review Risk Analysis	☑	
Santa Cruz County	MBCE	Peer Review Risk Analysis		
Sonoma County	SCP	Peer Review Risk Analysis		
City of Benicia	MCE	Peer Review Risk Analysis	☑	
City of Richmond	MCE	Peer Review Risk Analysis	☑	
Marin County Cities of: Novato, San Rafael, Ross Sausalito, Larkspur, San Anselmo	MCE	Peer review Risk Analysis	☑	☑

1. MRW Knows CCE Issues

MRW has been working on CCE issues since they were authorized by the California State Legislature in 2002. MRW staff, including Mr. Fulmer, were key witnesses at the CPUC regarding the rules of conduct that govern the relationships between the CCE, the host utility and the CPUC.

MRW has two ongoing CCE-related projects in Southern California. The first is with MRW's long-term client, the City of San Diego. For San Diego, MRW drafted a CCE Business Plan. For the newly-formed San Diego Regional Community Choice Energy Authority (SDRCCEA), MRW is providing input into the selection of key vendors such as the recently-released RFP for financial services; is monitoring and advising on CCE-related activities at the CPUC (including SDG&E's General Rate Case and the ongoing PCIA Rulemaking); and is on the team drafting SDRCCEA's Implementation Plan.

MRW is also currently working with the City of Long Beach on its CCE feasibility study. This work addresses Long Beach's unique customer mix (significantly more large industrial customers than the typical CCE), assess the scope of possible in-city solar development, quantities the economic and employment implications of CCE, and lays out in greater detail than has been seen in other feasibility plans the risks that the City might face with CCE formation, along with ways that those risks can be addressed.

Going back to the beginning, in late 2008, MRW conducted an independent review of the reports and documents associated with Marin County's CCE efforts. This review focused on the 2008 "Marin CCA Business Plan," an expert's professional peer review of the plan, PG&E's comments on the plan, and responses to the peer review and comments. MRW's analysis and review concentrated on two main areas: the critical factors that would lead to a financially viable CCE program, and the major risk factors that would affect potential participants in the CCE.

In late 2009, Marin County and city/town managers again retained MRW to review the draft service agreements that MEA was proposing to enter into with Shell Energy North America. This review concentrated on identifying the risks to MEA, the cities, the towns, and the County that were not sufficiently addressed in the MEA-Shell agreement. MRW provided suggested changes and amendments to the agreements to mitigate those risks. Many of MRW's suggestions were subsequently incorporated into the final contract.

In 2011, MRW worked with Sonoma County Water Agency as it assessed the feasibility of forming a CCE. MRW's role was to provide a due diligence review of the financial, rate and power procurement assumptions and analysis of their draft feasibility study. MRW found that the general approach used to examine the feasibility of a CCE was sound and all major cost components were addressed. However, MRW found that the manner in which the results were presented, while not unreasonable, tended to be more favorable toward CCE formation and the risks and downsides of CCE formation were not highlighted. MRW also found that some of the

results were presented in a way so as to minimize the appearance of cost differences between the CCE and PG&E.

In 2015 and 2016 MRW drafted CCE Technical Studies for Alameda and Contra Costa Counties. These studies answered the same fundamental questions being asked by Huntington Beach: what are the costs, benefits, and risks of CCE formation? MRW responded to questions and comments from numerous stakeholders, as well as city councils in the two counties as well as both Boards of Supervisors.

From 2014 through 2017, MRW has continued to provide professional peer reviews and advice to cities and counties considering CCE formation. These include the counties of San Mateo, Santa Cruz, Santa Clara, San Luis Obispo, Santa Barbara, Ventura and the City of San Diego.

MRW also continues to be active advocating for CCE positions at the CPUC. Mr. Fulmer provided expert testimony on behalf of the CCE trade association, CalCCA regarding the level of financial security requirements that CCE's should have to provide to the host utility and is actively participating the in the current CPUC proceeding addressing exit fee reform.

2. MRW Knows Renewable Energy

Even beyond the analysis and research into renewable power costs and output profiles needed to support the CCE feasibility studies discussed above, MRW regularly works in the renewable energy space. For a large private landholder, MRW examined the solar resource and performance of different solar PV plant configurations (fixed or tracking, flat or tilted). MRW also developed pro forma financial models to provide the client with an indication of potential costs and returns associated with a solar PV project located on its land. MRW also worked with the landholder's attorney to identify key potential fatal flaws in the project. Finally, MRW identified several potential development partners for the landholder.

For an Independent Power Producer looking to develop one or more solar PV projects at different locations in California's Central Valley, MRW developed estimates of the solar resource and plant performance for different plant configurations using simulation modeling tools developed by the National Renewable Energy Laboratory. MRW also assisted the developer with translation of generation estimates into revenue estimates.

For a large agricultural interest in California's Central Valley, MRW performed a fatal flaw assessment of a potential 1 MW "behind the meter" solar PV project. MRW also identified and helped the client to quantify key project risks. MRW helped the client with identification of experienced project developers/installers in order to minimize construction risk and warranty performance.

3. MRW Understands Resource Planning and Energy Procurement

Utility resource planning entails acquiring the right power resources to meet the current and future needs of a utility–or a CCE—in a least-cost fashion, subject to certain constraints. These constraints include limiting rate volatility, meeting state and/or federal requirements, and in

the case of CCEs, reflecting the local values of residents and businesses in the CCE area; these values could include increased renewable energy and decreased greenhouse gas (GHG) emissions.

MRW has seen resource planning from both sides. As part of CCE contract reviewers for Marin Clean Energy and Sonoma Clean Power, we know the unique positions that new CCEs face when setting resource portfolios for immediate as well as future service. As part of the Alameda CCE Study, MRW crafted resource portfolios for analysis and review. Furthermore, MRW team members have also served clients by reviewing and critiquing California investor-owned utility short- and long-term resource plans, including those of Southern California Edison. Finally, MRW assisted both Desert Clean Energy CCE and an Energy Service Provider (ESP) in preparing and filing Integrated Resource Plans that were approved by the CPUC.

4. MRW Understands Utility Rates and What Drives Them

MRW regularly provides clients with short-, medium-, and long-term forecasts of Southern California Edison (SCE) retail rates. These forecasts are performed on a bottoms-up basis and incorporate wholesale gas, power, and GHG emissions coefficients based on power content, SCE rate cases, resource plans, and other regulatory filings so as to best reflect future rates. As such, we are well positioned to accurately forecast SCE rates as well as ensure that the CCE costs are prepared on a consistent basis (i.e., same underlying wholesale market conditions).

A particularly challenging element to forecast is the Power Charge Indifference Amount (PCIA or "exit fee") that SCE charges to all CCE and direct access customers. The PCIA value changes from year to year and can vary from nil to over 2 cents per kilowatt-hour (kWh). For example, SCE's PCIA fee for residential customers was -0.015 cents per kWh in 2016, but prior to that the fee was 2.9 cents per kWh in 2011. Mr. Fulmer, who will head MRW's team, is one of California's primary experts on these matters and has been involved with the development of exit fees since their inception in 2002. In addition, Ms. Casas at MRW regularly provides PCIA forecasts to clients.

B. MRW References

Below are five references for MRW CCE feasibility and implementation plan projects.

Client Name:	**City of Long Beach**
Contact Person:	**Tony Foster, Business Operations Manager**
	(562) 570-2015
	tony.foster@longbeach.gov
Services Provided:	**CCA Technical Study**
Dates:	**2019 (ongoing)**

MRW, is nearing the end of the preparing a feasibility study for the formation of a CCA in the City of Long Beach. MRW considered such factors as the feasibility and extent of possible local renewable development, multiple generation portfolios, economic and employment impacts,

and strategic phase-in of CCA accounts. MRW is scheduled to present the results to the County Board of Supervisors and numerous City Councils.

Client Name:	**Alameda County**
Contact Person:	**Bruce Jensen, Alameda County Planning Department**
	(510) 670-5400
	bruce.jensen@acgov.org
Services Provided:	**Technical Study for Community Choice Aggregation**
Dates:	**2015-2016**

In fourth quarter of 2015 and the first half of 2016, MRW, along with EDR Group, prepared a feasibility study for the formation of a CCA in Alameda County. MRW considered such factors as the feasibility and extent of possible local renewable development, multiple generation portfolios, and energy efficiency. MRW worked with the County's 39-member steering committee to ensure that the diverse community perspectives (e.g., local environmental and business development advocates, labor, local government) were included. MRW presented the results to the County Board of Supervisors and numerous City Councils.

The project report can be found at: https://www.acgov.org/cda/planning/cca/documents/Feas-TechAnalysisDRAFT5312016.pdf

Client Name:	**City of San Diego**
Contact Person:	**Cody Hooven, Director/Chief Sustainability Officer**
	(619) 236-6563
	chooven@sandiego.gov
Services Provided:	**Peer Review of CCA Feasibility Plan**
	Business Plan for Community Choice Aggregation
	CCA Implementation Plan
Dates: November	**2017-Present**

In late 2016, the City of San Diego commissioned a study to understand the feasibility of using a CCA program to assist in meeting its goal of achieving 100% renewable energy city-wide by 2035. In April 2017, the City requested MRW to provide a professional peer review of the Study. MRW found that the Study was detailed and comprehensive but that there were a few reasons for concern with the results of the initial study:

- The assumptions for the forecast of SDG&E rates were inconsistent with those used in the forecast of CCA rates because the SDG&E rate forecast was simply an extrapolation of current rates, while the forecast of CCA rates was based on market and operational assumptions;
- The initial study did not clearly differentiate between generation rates and delivery rates when comparing SDG&E rates and CCA rates; and

- The initial study made overly conservative assumptions about contributions to reserve funds.

In 2018, MRW supported the City in its review of SDG&E's proposal to supply the City with a 100% renewable energy option for the residents and businesses in the City.

Also, in 2018, MRW prepared the Draft CCA Business Plan for the City of San Diego. This Business Plan provided a framework to the City for moving forward with CCA formation.

The Peer Review of the CCA Feasibility Study can be found at: https://www.sandiego.gov/sites/default/files/final_cca_feasibility_study_peer_review_040617_pub_feb_22_2018.pdf

The Peer Review of the SDG&E Proposal can be found at: https://www.sandiego.gov/sites/default/files/final_review_of_sdge_proposal_2018-03-15_0.pdf

The CCA Business Plan can be found at: https://www.sandiego.gov/sites/default/files/draft_final_cca_business_plan_city_of_san_diego_october_2018.pdf

Client Name:	**County of Contra Costa**
Contact Person:	**Jason Crapo, Deputy Director Conservation and Development** **(925) 674-7722** **Jason.Crapo@dcd.cccounty.us**
Services Provided:	**CCA Technical Study**
Dates:	**2016**

In 2016, MRW prepared a feasibility study for the formation of a CCA in Contra Costa County. MRW considered such factors as the feasibility and extent of possible local renewable development, multiple generation portfolios, and energy efficiency. In addition, MRW also laid out the benefits and drawbacks of not only forming their own CCA but joining with Marin Clean Energy (MCE) or East Bay Clean Energy (the CCA being formed in neighboring Alameda County). MRW presented the results to the County Board of Supervisors and numerous City Councils.

The project report can be found at: http://www.cccounty.us/DocumentCenter/View/43588

Client Name:	**Clean Power San Francisco**
Contact Person:	**Mike Hyams**
	(415) 554-1590
	mhyams@sfwater.org
Services Provided:	**CleanPowerSF Business Plan**
Dates:	**2015**

In December 2015, MRW assisted CleanPowerSF in drafting its Business Plan. The plan addressed such factors as CleanPowerSF's program goals, risk management strategies, operations, financial structure and management, and performance reporting and policy metrics.

C. MRW Staff

Below is a brief description of the key members of the MRW team. Résumés for all personnel likely to work on this project are attached as Appendix A.

Mark Fulmer is a Principal and partner at MRW with over 25 years of experience in the energy industry. Much of this work has been in the regulatory arena, advising customers, trade groups, municipalities, utilities, and state public utility commissions on resource planning, energy efficiency, and rate matters. He has submitted testimony before the Federal Energy Regulatory Commission and utility commissions in Arizona, California, Hawaii, Pennsylvania, Rhode Island, and Washington, as well as supporting testimony in ten other states and Canadian provinces.

With respect to CCE matters, Mr. Fulmer was the lead author of the CCE feasibility assessment in San Diego Gas & Electric Southern service area and contributed to the peer reviews of the CCE feasibility studies for Marin, Berkeley, Oakland, Emeryville, and the Kings River Conservation District. Mr. Fulmer was also the principal investigator for risk assessments performed by MRW on behalf of several cities considering participation in the Marin Clean Energy CCA program. He also served as an expert witness before the CPUC on behalf of the City and County of San Francisco on CCE matters, including the rules under which CCEs would operate, and the fees that IOUs would be allowed to charge CCEs for the various services the utility would have to provide. Mr. Fulmer was also one of three witnesses sponsored jointly by the MEA, the City and County of San Francisco, and the DA parties in the CPUC proceeding addressing the correct calculation of the Cost Responsibility Surcharge for departing load (CCE and DA) customers. Most recently, Mr. Fulmer sponsored testimony on behalf of the City of Lancaster concerning the fees that Southern California Edison proposes to charge CCEs for the various services the utility would have to provide.

Mr. Fulmer holds a master's degree in engineering from Princeton University, where he conducted graduate research at the Center for Energy and Environmental Studies, and a bachelor's degree in engineering from the University of California, Irvine.

David Howarth is a Principal and partner at MRW with 25 years of experience in the energy industry. Mr. Howarth specializes in quantitative and qualitative analysis of energy economics, policy, and technology issues. Clients include energy project developers, owners, lenders, public agencies, and end-users. His current focus is on utility procurement issues and energy project development. He is an expert on renewable energy policy and has worked with a number of renewable energy project developers in the western states and Hawaii, providing analytical support to their development efforts. Activities have included construction of pro forma financial models, bid support for utility Request for Offers, and analysis of qualifying facilities energy pricing for existing projects. He has also worked with customers and distributed generation suppliers to analyze supply options and utility bill impacts.

Mr. Howarth holds a master's degree in energy and resources from the University of California, Berkeley, and a bachelor's degree in economics and biology from Wesleyan University.

Anna Casas Llopart is a Senior Consultant at MRW. Ms. Casas Llopart provides modeling support for MRW's team. Her work focuses on researching and analyzing energy data and related policy, with an emphasis on California electricity markets. She develops MRW's forecasts and analyses pertaining to electricity rates, rate design, and other energy matters. She also develops expert testimony for regulatory proceedings and litigation. Prior to her work at MRW, Ms. Casas Llopart worked for Nexus Energia, an Electricity Service Provider (ESP) based in Spain. There she created analytical models to forecast production for renewable technologies, customer energy demand, and spot market prices, modeled cost of electricity procurement and generation, managed scheduling and settlements, and developed and implemented new technology to optimize billing operations.

Carlo Bencomo-Jasso is a Senior Associate at MRW. Mr. Bencomo-Jasso work focuses on data analysis and policy research. Prior to joining MRW, Mr. Bencomo-Jasso worked for consulting firms specializing in energy and economics. His previous work experiences include load forecasting, capacity market modeling, cost-benefit analysis and econometric modeling. Mr. Bencomo-Jasso holds a master's degree in energy and environment from Boston University, a master's degree in environmental science and management from the University of California, Santa Barbara, and a bachelor's degree in history from Princeton University.

5. Fee Information

A. Fixed Price Quote

MRW will compete the tasks listed in the City's RFI and presented here for fees and expenses not to exceed $66,000, to be billed on a time-and-materials basis. MRW proposes to provide monthly detailed invoices.

B. Billing Rates for All Personnel

The following hourly billing rates will apply.

Consultant	Level	Rate, $/Hour
Key Personnel		
Fulmer	Principal	$330
Howarth	Principal	$330
Casas	Senior Consultant	$230
Bencomo-Jasso	Senior Associate	$224
Additional Personnel who may contribute		
Neal	Senior Project Manager	$299
Charles	Senior Project Manager	$252
	Associate	$167

C. Personnel Hours and Delivery

Table 2 below shows MRW's anticipated personnel, hours per tasks, and task completion. This table presupposes that the authorization to work is on or about December 2.

Table 2. Personnel assignment, anticipated hours and task completion

	Estimated Hours by Task and Key Consultant					Anticipated
Tasks	Fulmer	Howarth	Casas	Bencomo-Jasso	Total	Completion Date
Kickoff meeting	8				8	2-Dec
Load Forecast/Study	2		4	24	30	20-Dec
Economic Analysis of Load			40		40	7-Jan
Savings Analysis		8	40	16	64	18-Feb
Governance Structure	14			4	18	18-Feb
CPUC CCE Implementation Plan Requirements	2				2	18-Feb
Public Meeting Support/Presentations	16			4	20	Various
Report Preparation	16	4		24	44	10-Mar
Management	8	2			10	Various

Appendix A: Resumes

MARK E. FULMER

PROFESSIONAL EXPERIENCE

Principal
MRW & Associates, LLC
(1999 - Present)

Conduct economic and technical studies in support of clients involved in regulatory and legislative proceedings and power project development. Advise clients on the economic issues associated with taking electricity service from non-utility sources or self-generating power. Work includes expert testimony on rate matters; economic analysis of end-use energy-efficiency projects, retail rate and wholesale price forecasting, and pro forma analysis of cogeneration and distributed generation facilities.

Project Engineer
Daniel, Mann, Johnson & Mendenhall
(1996 - 1999)

Acted as project manager and technical advisor on energy efficiency projects. Work included management of PG&E program to promote innovative energy efficient technologies for large electricity users. Coordinated the implementation of an intranet-based energy efficiency library. Directed technical and market analyses of emerging technologies.

Associate
Tellus Institute
(1990-1996)

Advised public utility commissions in five states on electric and gas industry deregulation issues. Submitted testimony on the rate design of a natural gas utility to the Pennsylvania Public Utilities Commission. Testified before the Hawaii PUC on behalf of a gas distribution utility concerning a competing electric utility's demand-side management plan. Analyzed national energy policies for a set of non-governmental agencies, including critiquing the DOE's national energy forecasting model. Developed model to track transportation energy use and emissions and used the model to evaluate state-level transportation policies. Developed model to track greenhouse gas emission reductions resulting from state-level carbon taxes.

Research Assistant
Center for Energy and Environmental Studies, Princeton University
(1988-1990)

Researched the technical and economic viability of gas turbine cogeneration using biomass in the cane sugar and alcohol industries. First researcher to apply "pinch" analysis and a mixed-integer linear programming model to minimize energy use in cane sugar refineries and alcohol distilleries.

EDUCATION

M.S.E., Mechanical and Aerospace Engineering, Princeton University, 1991
B.S., Mechanical Engineering, University of California, Long Beach, 1986

DAVID N. HOWARTH

PROFESSIONAL EXPERIENCE

Principal
MRW & Associates, LLC
(9/96 - Present)
Specializes in quantitative and qualitative analysis of energy economics, policy and technology issues. Clients include energy project developers, owners, lenders, public agencies, and end users. His current focus is on utility procurement issues and energy project development. He is an expert on renewable energy policy and has worked with a number of renewable energy project developers in the western states and Hawaii, providing analytical support to their development efforts. Activities have included construction of pro forma financial models, bid support for utility RFOs and analysis of QF energy pricing for existing projects. He has also worked with customers and distributed generation suppliers to analyze supply options and utility bill impacts. He has participated in policy studies on the need to replace aging generation infrastructure in California and on the status of nuclear generation and waste storage facilities. Other work has included litigation support, market due diligence, and contract negotiation support.

Associate
RDC, Inc.
(9/93 - 9/94) Independent Consultant (9/94 - 9/96)
Provided management consulting services, including strategic business planning and subcontractor management, to developer of a flywheel energy storage system for transportation and stationary applications. Performed market study for manufacturer of small, advanced gas turbines. Researched electric utility, oil and gas, and manufacturing industries to identify technical and market opportunities for small gas turbines. Completed assessment of emerging market for fiber optic communications installed along electric utility rights-of-way. Identified and characterized industrial processes for which electricity-to-gas energy substitution opportunities exist to support utility demand-side management efforts.

Analyst
Global Change Unit, ICF Incorporated
(9/89 - 7/93)
Performed quantitative analyses and wrote reports and briefings for large consulting firm providing environmental and economic services to governmental and private-sector clients. Co-authored EPA study of the potential for renewable sources of electricity to reduce air pollution. Developed models to analyze the long-term impacts of U.S. government programs to increase carbon storage in forests and to reduce greenhouse gas emissions from agricultural sources. Participated in a variety of regulatory studies of selected toxic substances for USEPA. Analyzed the operations and

financial performance of multinational corporations to determine profit levels consistent with a fair treatment of transfers with their foreign subsidiaries.

EDUCATION M.A., Energy and Resources Group, University of California, Berkeley, 1996
B.A., Economics and high honors in Biology, Wesleyan University, 1989

ANNA CASAS

PROFESSIONAL EXPERIENCE

Senior Associate
MRW & Associates, LLC
(2015-present)
Research and analyze energy data and related policy, with an emphasis on California electricity markets. Develop forecasts and analyses pertaining to electricity rates, rate design, and other energy matters and develop expert testimony for regulatory proceedings and litigation. Monitor and analyze regulatory and policy developments affecting the California energy markets.

Engineering Consultant
(2013-2015)
Designed engineering solutions for commercial and residential buildings, including in the areas of energy efficiency, electrical systems, fire protection, and environmental systems.

Portfolio Manager
Nexus Energia
(2009-2013)
Created analytical models to forecast production for renewable technologies, customer energy demand, and spot market prices. Modeled cost of electricity procurement and generation and managed scheduling and settlements. Developed and implemented new technology to optimize billing operations for a Spanish Energy Services Provider.

Engineering Consultant
Crisergas
(2008-2009)
Designed liquefied natural gas satellite plants, liquefied petroleum gas storage facilities, control stations, and receiving facilities.

EDUCATION

M.S. in Engineering and Management of Renewable Energy IL3 University Barcelona, 2009
B.S./M.S. in Industrial Engineering, Polytechnic University of Catalonia, 2006

CARLO A. BENCOMO-JASSO

PROFESSIONAL EXPERIENCE

Senior Associate
MRW & Associates, LLC
Provide research and data analytics pertaining to electric-utility planning, regulation, and economics.

Senior Associate
Resource Insight, Inc
(2019)
Created energy price estimates and evaluated bids for power procurements. Assessed renewable resource build-outs for Integrated Resource Plans. Reviewed econometric models employed in utility load forecasts. Evaluated the economics of coal plant retirements.

Analyst
Daymark Energy Advisors
(2017-2019)
Performed data collection and statistical analysis of energy commodity pricing and power data. Developed data analytics reports, regulatory testimony, and other supporting analysis and documents. Performed load forecasting and capacity market modeling. Conducted economic impact and cost-benefit analyses for energy development projects.

Teaching Fellow
Department of Earth and Environment, Boston University
(2013-2016)
Taught weekly undergraduate discussion sections on international economics, environmental science, and energy. Assisted students with class material and graded class assignments and exams.

Solar Rooftop Analyst
Southern California Edison
(2010)
Aided in development of leasing agreements with commercial property owners for the installation of solar arrays 1 MW and larger in size. Maintained program databases. Created presentations and weekly status reports on site acquisitions and leasing agreements for senior management. Supported development of marketing materials for program outreach.

EDUCATION

M.A., Environment and Energy, Boston University, 2016
M.S., Environmental Science and Management, UC Santa Barbara, 2012
A.B., History, Princeton University, 2009

MARY NEAL

PROFESSIONAL EXPERIENCE

Senior Project Manager
MRW & Associates, LLC
(2018)
Conduct technical analysis of electric and gas utility rate cases and other regulatory filings and serve as expert witness in regulatory proceedings. Construct and critique models for utility cost allocation, rate design, retail rate forecasts, and benefits of distributed generation facilities. Evaluate energy procurement options and provide analytical and strategic support for business decisions and litigation on electric and gas issues.

Senior Consultant
Daymark Energy Advisors, Inc.
(2009-2017)
Advised electric and gas industry clients on resource planning, utility rates, and market design issues. Testified before multiple state and Canadian provincial regulatory agencies on issues related to electric market modeling, fuel cost forecasting, cost allocation, rate design, and electric utility capital planning. Prepared and critiqued numerous electric and gas utility allocated cost of service, revenue requirement and rate design models. Led modeling team for Daymark Energy Advisors' AURORAxmp Northeast electric market model.

Engineer
Solar Turbines, Inc.
(2005-2008)
Designed dry low-emission combustion systems for Mars SoLoNOx gas turbines. Led development of fuel injectors for landfill gas and aftermarket retrofit applications.

EDUCATION

M.A., Energy and Environmental Analysis, Boston University, 2010
B.S. Mechanical Engineering, University of California, Davis, 2005

BRANDON J. CHARLES

PROFESSIONAL EXPERIENCE

Senior Project Manager
MRW & Associates, LLC
(September 2008 – May 2013, March 2016 - present)
Analyze electricity and natural gas market data with a focus on markets in the western U.S. Evaluate utility ratemaking issues, including cost of service, revenue allocation, and rate design. Develop and sponsor expert testimony on utility ratemaking, budget, and various policy and technical issues. Develop models forecasting retail and wholesale electricity prices. Research and interpret policy decisions and proposals affecting the energy market. Develop reports on energy policy and market issues, including the impact of policy changes on new project development.

Senior Market Analyst
Bloom Energy
(June 2013 – March 2016)
Analyzed electricity and natural gas market prices and trends, regulatory policies impacting distributed generation markets, new market opportunities, stationary fuel cell addressable market size, and the economics of potential product offerings. Developed cash flow models and assumptions for distributed generation project economics for Fortune 500 customers and state policymakers.

Coordinator, Economic and International Policy
Biotechnology Industry Organization (BIO)
(September 2006 – August 2008)
Analyzed industry trends, legislative and regulatory policy developments, and economic issues in support of industry policy positions and related studies.

Legal Assistant
White & Case, LLP
(July 2005 – June 2006)
Managed U.S. litigation and international arbitration cases, including the arbitration of an international power plant development contract.

EDUCATION

A.B., Economics, Dartmouth College, 2005