



Public Sector Market Characterization Financing Study Research Plan

Prepared by The Energy Coalition (TEC) on behalf of
SoCalREN Public Agency Programs

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List of Acronyms and Abbreviations

Acronym/Abbreviation	Description
ACEEE	American Council for an Energy-Efficient Economy
ARRA	American Reinvestment and Recovery Act
CCA	community choice aggregator
CEC	California Energy Commission
COVID-19	coronavirus disease 2019
CPUC	California Public Utilities Commission
CRM	customer relationship management
DAC	disadvantaged community
ECCA	CEC's Energy Conservation Assistance Act
EE	energy efficiency
EM&V	evaluation, measurement, and verification
EPA	Environmental Protection Agency
HVAC	heating, ventilation, and air conditioning
IOU	investor-owned utility
K-12	from kindergarten to 12th grade
KFI	key financial indicator
LCC	life-cycle cost
NMEC	normalized metered energy consumption
NPV	net present value
OBF	on-bill financing
PA	program administrator
RCx	retrocommissioning
REN	regional energy network
ROI	return on investment

SCE	Southern California Gas
SCG	Southern California Gas Company (SoCalGas)
SoCalREN	Southern California Regional Energy Network
SPP	simple payback period
TEC	The Energy Coalition

1. Introduction

This report contains the updated proposed research plan for the SoCalREN Public Sector Market Characterization Financing Study. The original research plan was submitted in March 2020 and this updated plan includes additional detail on the study methodology and incorporates comments received from the Energy Division. Section 1 provides the background, objectives, and structure of the study. Section 2 reviews the five tasks to be completed during the course of the study and details how each task will be conducted. Section 3 reviews the budget and proposed schedule.

Background

The Program Administrators (PAs) urgently need a market characterization study of the newly categorized public sector. Because the public sector was previously categorized as part of the commercial sector, very little information exists specific to the public sector. Through California's Energy Efficiency Rolling Portfolio, PAs have begun to design a comprehensive set of programs to meet the unique needs of public sector customers. Now, PAs require an even deeper understanding of the public sector's challenges and opportunities to continue to meet their needs. In particular, the role of financial offerings, such as rebates and project financing, needs to be investigated to maximize the development and completion of high-value energy efficiency projects.

Public sector participants in ratepayer-funded energy efficiency programs receive a range of financial products and services, but it is unclear which ones are most effective in encouraging participation and what gaps are not being addressed. Increasingly stringent energy code and appliance standards are reducing the availability of downstream rebates, incentives and associated financing programs, negatively impacting program participation rates. Public sector energy efficiency projects are typically funded with taxpayer dollars, which introduces a higher degree of scrutiny over budgets, expenditures, and procurement practices than other sectors. In addition, local governments and public school budgets are anticipated to be negatively impacted significantly for the next several years as a result of COVID-19. To ensure ratepayer-funded programs are designed to effectively deploy resources to public sector customers, PAs require a more granular understanding of this sector's needs.

The Southern California Regional Energy Network's (SoCalREN's) Public Agency Programs have helped customers in Southern California Edison (SCE) and Southern California Gas Company (SoCalGas) territories achieve over \$50 million in energy cost savings by supporting hundreds of energy efficiency projects at public facilities. All of these projects have relied on energy efficiency rebates, project financing, support services, or a combination of all three. As the third-party implementer for these programs, The Energy Coalition has connected agencies to investor-owned utility (IOU) funding sources, such as rebates, incentives and on-bill financing (OBF), non-IOU funding sources, such as the California Energy Commission's Energy Conservation Assistance Act (ECAA) loans and Proposition 39 grant funding for energy efficiency retrofits in schools, and

has launched SoCalREN's own Revolving Loan Fund using funds from the American Reinvestment and Recovery Act (ARRA).

Due to the decrease in eligible energy efficiency measures from the IOUs, rebates, incentives, and financing tied to specific energy efficiency measures are less effective funding solutions than in years past. For example, on-bill financing (OBF) programs offered by the IOUs have historically been effective in encouraging rebate program participation. However, OBF is generally not available for energy efficiency measures that are not rebate-eligible, and as rebate offerings decrease, so does the availability of OBF. IOU NMEC programs may offer a limited alternative method of accessing OBF for eligible projects, but there is a clear need to explore other solutions to support public sector energy efficiency projects.

Given the drastic economic impacts of the COVID-19 crisis, understanding the financial support needs of the public sector is even more essential to program administrators and implementers seeking to serve those customers. In a recession, public agencies will experience increased scrutiny over the use of tax revenue and the delivery of public goods and services. This study will provide valuable insight on public agency needs and help develop critical energy project financial services as these customers weather a challenging economic climate.

Goal and Objectives

The goal of this study is **to provide valuable insight into public agencies' needs in order to develop effective project financial services**. A market study that characterizes those needs across public sector subgroups, such as public municipal governments, public school districts, special districts, and Disadvantaged Communities (DACs) and identifies decision-making criteria, such as simple payback thresholds and interest rate sensitivity, will allow public sector program implementers to design programs that achieve higher project participation and maximize energy efficiency savings.

Study objectives include:

- Develop a ranked order for energy efficiency rebates, financing products, and support services offered to public agencies
- Determine the threshold of effectiveness for rebates as a percentage of the gross project cost
- Determine the impact of timing of receipt of rebates and/or financing on project implementation
- Determine if off-balance sheet financing products are preferable to on-balance sheet products
- Determine if public agencies serving DACs value financing products and services differently

For this study, The Energy Coalition (TEC) and a qualified sub-consultant will investigate the following questions, among others deemed appropriate:

- Which product/service is the most critical to completing energy efficiency projects: non-monetary support services, incentives, or project financing?
- Which financial products and/or support services are most valuable to public agencies serving DACs?
- What minimum rebate, as a percent of project cost, will entice a customer to complete an energy efficiency project? How does this vary with the scale of project cost?
- Do on-bill financing options address the public sector's resistance to taking on debt?
- Are off-balance sheet financing products preferable to on-balance sheet? If so, why?
- What is the preferred form of energy efficiency project financing?
- Do agencies value low-interest loans to reduce lifecycle project cost?
- Is a zero-interest loan significantly more valuable than a low-interest loan?
- Is there a relationship between project cost and the need for financial products and support services? How do existing financing products fit different project sizes, as measured by construction value?

Overview of Approach

Variables investigated in the study will include:

- Financial metrics for projects, including simple payback, typical cost, and which indicator(s) are commonly used by public sector actors for investment justification
- Preferences for type of support provided by ratepayer energy efficiency programs (financing, rebates, technical assistance, etc.)
- Relative or absolute magnitude of financial incentives to drive projects
- Preferred timing for receipt of energy efficiency incentives, financing, or program support
- Preference for interest rates, terms, methods of issuance, and methods of repayment

Variable Definitions:

- **Project Financial Metrics**
 - **Typical Project Size (\$):** Average total cost for an energy efficiency project
 - **Key Financial Indicator:** Primary financial indicator utilized for evaluating an energy efficiency project (SPP, ROI, NPV, LCC, etc)
 - **Key Financial Indicator Threshold:** Maximum or minimum acceptable KFI value required for investment in an energy efficiency project
- **Program Preference:** Relative value of financing, rebates, and services when pursuing an energy efficiency project
- **Rebate Threshold:** Minimum rebate (as a percentage of project cost) required to induce a customer to participate in an energy efficiency project
- **Timing Preference:** Timeframe for receipt of incentives/rebates/loan funds relative to outlay of capital for project
- **Financing Preferences:**
 - **Interest Rate:** Maximum loan interest rate that an agency is willing to accept in order to finance an energy efficiency project
 - **Loan Term:** Preferred length of loan term for energy efficiency project financing

- **Method of Issuance:** Preferred method for receiving loan funds (ex. lump sum pre-installation, lump sum post-installation, reimbursement)
- **Method of Repayment:** Preferred means of repayment (ex. lump sum, amortized payments, on-bill recovery, reimbursement)

Variables not analyzed in this study:

- **Geographical Reach**
 - Climate zone
 - IOU service territory
- **Agency Size**
 - Population
 - Revenue/budget
- **Project Details**
 - Type of project (retrofit, new construction, RCx, etc.)
 - Type of measures (lighting, HVAC, building envelope, etc.)

The study seeks to identify similarities and differences in preferences across targeted market segments within the public sector. For this study, local government agencies will be grouped into three market segments: municipal governments, special districts, and school districts. Correlations between preferences and disadvantaged community status will be evaluated as a cross-cutting market segment across all three groups.

Market Segment Definitions for this Study:

- **Municipal Governments:** Cities, counties, tribes, and other local government agencies funded primarily by tax dollars
- **Special Districts:** Publicly owned water districts, irrigation districts, sanitation districts, community service districts, and other local government agencies that utilize rate recovery as a primary funding source
- **School Districts:** K-12 public school districts
- **Disadvantaged Communities (cross-cutting):** Jurisdiction contains DAC census tracts

Public agency market segments that will not be covered in this study include:

- State
- Higher Education
- Federal

2. Research Plan Tasks

This section includes specific descriptions for each of the tasks involved in the research plan.

Task 1: Submit Study Research Plan for Stakeholder Comment

The Study Research Plan outlines each of the components of the study, describes the purpose of each task, and details how each task will be conducted. Establishing a rigorous methodology and ensuring it is followed will be key to producing reliable and accurate study results. In March 2020, TEC prepared a Draft Study Research Plan that was shared with Los Angeles County, the Administrator to the SoCalREN, and CPUC Energy Division for informal review. Under Task 1, TEC has updated the Study Research Plan to incorporate the feedback provided and will upload the final version to the California Energy Efficiency Energy Contracts website (pda.energydataweb.com) for stakeholder comment.

Updates to this Study Research Plan include:

1. Expanded definitions of metrics to be evaluated during the course of the study
2. An outline of the steps required to conduct Task 2 to complete a thorough review of all available research sources before conducting surveys and interviews. This will include identification of IOU, regional energy network (REN), community choice aggregator (CCA), and other third-party reports, and any other resources that may be helpful for the team to review in the preliminary research phase of Task 2.
3. A proposed methodology for developing and conducting stakeholder surveys (Task 3) and interviews (Task 4) to capture a statistically valid data set of responses from a representative population of qualified responders.
4. A draft outline for the final report

Task 1 deliverable:

1. Update Study Research Plan and publish draft version on CA EE Contracts website for stakeholder feedback
2. Incorporate stakeholder comments and feedback into Study Research Plan and publish final version on CA EE Contracts website

Task 2: Program Participation and Public Financing Best Practices Research

A range of public sector energy efficiency and other financing programs have been implemented in California. The study team will work with the IOUs, RENs, CCAs, and other third parties to identify existing and former programs in California with reports or data that can be used for this market characterization study. A data request may be needed to collect the appropriate data during this stage. The study team may use studies from other states to help guide the development of interview and survey questions. The study team will be as inclusive as possible to learn from existing knowledge about designing and delivering public sector financing programs. This task includes questions to other implementers on the effectiveness of financing programs, including past performance and perspectives on how the changing energy and energy efficiency programs landscape will affect future needs.

When researching best practices, the study team will look to commercially available data sets and resources to understand how public agencies leverage financing products and services outside of energy efficiency projects.

This task focuses on capturing program participation, understanding commercially available data, and gleaning insights from third parties that administer programs or offer financing products and services to the public sector.

Overview of Publicly Available Data Needs and Potential Sources

Data Collection Method	Data Source	Data Components
External	Published EM&V reports, work plans, and other relevant research reports	<ul style="list-style-type: none"> - Financing preferences - Rebate/incentives threshold
	EE Program Administrator (PA) Annual Reports, Annual Budget Advice Letters, compliance filings, formal data requests	<ul style="list-style-type: none"> - PA financing mechanisms - Program preference and participation rates - Rebates/incentives threshold - Loan characteristics - Project financial metrics
	California Energy Commission (CEC) Energy Conservation Assistance Act Financing Reports	<ul style="list-style-type: none"> - Participation rates - Loan characteristics
	EPA’s Environmental Financial Advisory Board reports	<ul style="list-style-type: none"> - Financing preferences
	Department of Energy Resources	<ul style="list-style-type: none"> - Financing preferences - Funding type
	American Council for an Energy-Efficient Economy (ACEEE) research reports	<ul style="list-style-type: none"> - Program preference and participation rates - Services provided
Internal	SoCalREN Public Agency Program Customer Relationship Management (CRM) reports	<ul style="list-style-type: none"> - Funding type - Project financial metrics - Loan characteristics - Services provided

Task 2 deliverables:

1. Issue data requests to external parties as needed

2. Prepare research summary report addressing findings of the literature review and providing recommendations for development of stakeholder surveys and interviews

Task 3: Develop and Administer Stakeholder Online Surveys

The study team will design a web survey that can be administered to individuals at public agencies who are qualified to provide insight into the market characterization issues noted above. Qualifying respondents will be defined as those who:

- Are responsible for owning/managing a public facility and would be aware of any recent or upcoming energy efficiency project decisions
- Are responsible for budget allocation decisions and/or approve the use of third party financing products and services
- Have a leadership role within a public agency and are decision-makers on how capital projects are funded

The team will collect a pool of potential survey respondents through a variety of sources, including online survey panel companies, public sector customer participation data, and other publicly available local government contact information. Online survey panel companies recruit potential survey respondents online and then vet them for validity. Panelists that are identified by the online survey companies will be further screened to ensure that they pass the team's qualifying criteria. Public sector customer participation data may be available from SoCalREN and other Program Administrators; however, previous participation in ratepayer-funded programs is not a prerequisite for participation in the survey. Publicly available lists of state and local agency contact information may be used to further expand the survey's reach. Other options include partnering with public agency groups and associations whose members would be eligible and who would facilitate the survey.

Task 3 deliverables:

1. Draft and final survey questions
2. List of distribution channels
3. List of public agency and stakeholder recipients
4. Brief summary of results that inform Task 4

Task 4: Develop and Administer Stakeholder Interviews for Study

In this task, the study team will develop interview guides to evaluate public sector customer criteria for participation in ratepayer-funded rebate, financing, and project support service programs. The team will focus on the role of funding, financing, and support services on the decision to proceed with an energy efficiency project. The study team expects to complete various interviews with customers that expressed interest in participation via the online survey. Participation in the interview is not limited to customers who have used ratepayer-funded energy efficiency programs. Publicly-available state and local government contact information may also be used to select

interview candidates. Interviews will be conducted by skilled and experienced interviewers to ensure they are carried out consistently and without bias.

Task 4 deliverables:

1. Draft and final interview questions
2. List of stakeholders to be interviewed
3. Individual interview responses
4. Brief summary of results that inform Task 5

Task 5: Analyze and Present Findings

Based on the findings of Tasks 2-4, the study team will develop a full report and summary PowerPoint document that describes the study findings and relevant program-related recommendations. Proposed structure for final report:

- I. Executive Summary
 - a. Introduction and Methodology
 - b. Key Findings
 - c. Summary of Recommendations
- II. Introduction
 - a. Study Purpose
 - b. Role of Funding, Financing, and Support Services in EE Projects in California
 - c. Study Questions
 - d. Study Limitations
- III. Methodology
 - a. Terms and Definitions
 - b. Market Segmentation
 - c. Data Sources
 - d. Literature Review
 - e. Web Survey Design
 - f. Interviews with Public Agencies
- IV. Analysis
 - a. Market Characterization
 - b. Program Preferences
 - c. Rebate Thresholds
 - d. Timing Preferences
 - e. Financing Preferences
- V. Conclusions and Recommendations
- VI. Appendices

Task 5 deliverables:

1. Prepare Draft Report of study findings

2. Presentation of study findings to Los Angeles County, member agencies, and stakeholder groups
3. Draft Report upload to CA EE Contracts web portal for two week stakeholder comment period
4. Final Report incorporating comments and feedback uploaded to CA EE Contracts web portal

3. Budget and Schedule

This research plan is provided with a \$130,000 budget from SoCalREN's 2020 program year EM&V funds.

A schedule of tasks is below.

EM&V Financing Study Project Schedule		April		May		June		July		Aug		Sept		Oct		Nov		Dec		
Project Schedule		13	27	11	25	8	22	6	20	3	17	31	14	28	12	26	9	23	7	21
Task 1	Develop EM&V framework for financing study	-	█	█	█	█	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Task 2	Program participation and public financing best practices research	-	-	-	█	█	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Task 3	Develop and administer stakeholder online surveys	-	-	-	-	-	█	█	█	█	-	-	-	-	-	-	-	-	-	-
Task 4	Develop and admister stakeholder interviews for study (and build program awareness for potential enrollments)	-	-	-	-	-	-	-	-	█	█	█	█	█	█	-	-	-	-	-
Task 5	Analyze and Present Findings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	█	█	█	█	█