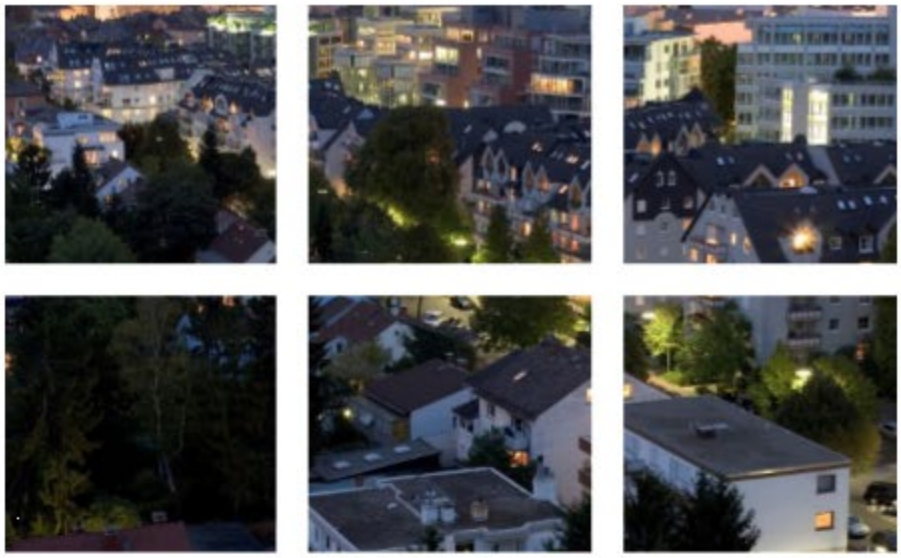


SOLAR ON MULTIFAMILY AFFORDABLE HOUSING (SOMAH) EVALUATION

Phase I Report

Submitted to:
California Public Utilities Commission
Energy Division

Prepared by:

Itron

1111 Broadway
Suite 1800
Oakland, California 94607

With Assistance From:
ILLUME
VERDANT

August 4, 2020

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The Solar on Multifamily Affordable Housing (SOMAH) Program offers incentives to applicants for the installation of solar photovoltaic (PV) energy systems on multifamily affordable housing as a means of increasing access to solar energy and bill savings among low-income households and disadvantaged communities (DACs) throughout California.[1] The SOMAH Program also engages in workforce development and training activities to support economic development in underserved communities.

Itron, Inc. (Itron), Verdant Associates (Verdant) and Illume Advising (ILLUME) (the "evaluation team") have been contracted by San Diego Gas and Electric (SDG&E) on behalf of the California Public Utilities Commission (CPUC) to conduct an evaluation of the SOMAH Program in two phases. Phase I efforts focus on early feedback on the program's goals, design, and initiation activities. Phase II will provide evaluability findings and first-year impact findings. In this Phase I report, we summarize the SOMAH Program, identify early feedback on the program design, present a SOMAH Program Theory and Logic Model (Logic Model), and recommend metrics to assess in forthcoming program evaluations. This report represents the first deliverable of the SOMAH Program's first evaluation study and thus is a critical step towards setting up the program for successful evaluations presently and in the future.

This Phase I report also fulfils several reporting requirements. Public Utilities (PU) Code Section 913.8 requires the CPUC to provide the Legislature with a comprehensive report on SOMAH Program participation and progress towards legislative goals by July 30, 2020. The program assessment directed in PU Code 913.8 and the specific reporting requirements are included in this Phase I report. A matrix of the reporting requirements is provided in **Appendix A.**

1.2 BACKGROUND AND PROGRAM DESCRIPTION

California State Assembly Bill (AB) 693 directed the CPUC to institute a new program intended to make qualifying solar energy systems more accessible to low-income and DACs.[2] The goal of this new program is to install solar energy systems that have a generating capacity equivalent to at least 300 MW_{AC} on qualified multifamily affordable housing properties through December 31, 2030.[3] In accordance with AB

[1] Decision D.17-12-022, December 14, 2017.

[2] https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB693

[3] This program is funded by Pacific Gas and Electric Company (PG&E), SDG&E, Southern California Edison Company (SCE), Liberty Utilities Company, and PacifiCorp, collectively the investor-owned utilities or IOUs.

693, the CPUC issued D. 17-12-022 on December 14, 2017, creating the SOMAH Program and establishing program goals and eligibility requirements.

The SOMAH Program is one of a handful of programs in California offering incentives for installation of solar PV to directly benefit low-income customers and DACs. Other programs include the Single-family Affordable Solar Homes (SASH) Program for qualifying low-income single-family homeowners (adopted by CPUC in D. 07-11-045), the Multifamily Affordable Solar Homes (MASH) Program providing incentives for solar installations on multifamily affordable housing (D. 08-10-036), and a component of the California Solar Initiative (CSI) specifically for residential new construction (now known as the New Solar Homes Partnership or NSHP) to be overseen by the California Energy Commission (CEC, D. 06-11-024).

The SOMAH Program is jointly administered statewide by a single program administrator (PA) team made up of the Association for Energy Affordability (AEA), Center for Sustainable Energy (CSE), GRID Alternatives (GRID), and the California Housing Partnership Corporation (CHPC). The program has distinct rules and eligibility requirements, including a focus on serving properties in DACs. In compliance with the terms of AB 693, the SOMAH Program will provide significant subsidies for the installation of solar PV systems on qualifying multifamily affordable housing properties (i.e., multifamily housing financed with low-income housing tax credits, tax-exempt mortgage revenue bonds, general obligation bonds, or local, state, or federal loans or grants). The SOMAH Program serves utility and community choice aggregator customers in the territories of Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), SDG&E, Liberty Utilities Company, and PacifiCorp. To be qualified for SOMAH, properties must also be occupied by households with incomes at or below 60% of the area median income or be in a DAC, as identified by the Office of Environmental Health Hazard Assessment (OEHHA) on behalf of the California Environmental Protection Agency (CalEPA).

Within the first day of accepting applications (July 1, 2019), SOMAH was nearly fully subscribed. As of May 4, 2020, the program received 317 applications (excluding those which have been cancelled), representing 81.6 MW_{AC} of future capacity and nearly $179 million in reserved funding. Currently, funding is available for SCE, PacifiCorp, and Liberty Utilities Company, and they are actively accepting applications. PG&E is open to waitlist applications and SDG&E has closed their waitlist due to its length.

1.3 RESEARCH QUESTIONS

This Phase I report addresses the following researchable questions:

- What is the underlying program theory? Is the program operating in a manner to support this model?
- What metrics are needed to determine the program's impact?

- Is the program collecting the appropriate data in the correct formats to support the measurement of performance during the program's implementation?
- Is the SOMAH Program evaluable based on the California Energy Efficiency Evaluation Protocols and best practice evaluation methods for solar programs? If not, what program design and data collection activities need to be put in place to ensure that it is?
- Are the program actors aligned for success? Are there barriers to the implementation and administration of the program that may impact its success? If so, how might they be addressed?

1.4 APPROACH

The evaluation team's Phase I research activities are summarized in Table 1-1. The details of each activity can be found in the Phase I Methodology section.

TABLE 1-1: SUMMARY OF PHASE I ACTIVITIES

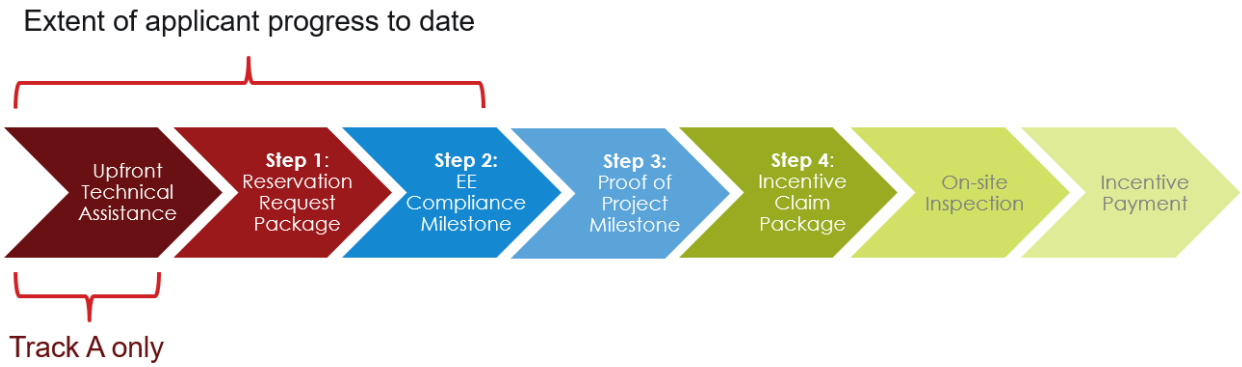
Task	Description	Purpose
Document review	Reviewed the program handbook, SOMAH website, program legislation (including Assembly Bill (AB) 693), program applications, implementation, and outreach materials, PU Code Section 913.8 and PU Code 2870.	Gather information on programmatic and legislative goals, stakeholder roles, and background from program information.
Program Administrator (PA) interviews	Interviewed the organizations making up the SOMAH PA (GRID Alternatives, Center for Sustainable Energy (CSE), California Housing Partnership Corporation (CHPC), and Association for Energy Affordability (AEA)) (eight interviews).	Determine Program goals, roles, activities, and processes for PA organizations.
Investor-owned utility (IOU) staff interviews	Interviewed the program teams at all five participating IOUs (five interviews).	Determine IOUs' roles, activities, and processes.
CPUC program lead interview	Interviewed SOMAH Program lead (one interview).	Explore CPUC's understanding of program theory and objectives
Data collection plans review	Reviewed data collection plans and initial application data being collected.[4] This included application data (PowerClerk 2.0), PV generation data, kWh and billing data, cross-participation data.	Determine if the data being collected are sufficient to support program tracking, reporting, and evaluation.
SOMAH Program participation analysis	Analyzed the SOMAH Program applications received to date, with a focus on characteristics of the submitted projects and the current status of the applications.	Assess the current state of the program applications to deepen understanding of how the program is performing.

[4] Due to the status of the program to date (i.e., no completed projects), it was not possible to review all program data elements at this time.

1.5 PROGRAM ACTIVITIES TO DATE

The SOMAH Program is still in its early stages, having officially launched in July 2019. Program activities have also slowed as a result of the COVID-19 pandemic. Figure 1-1 below presents the four primary SOMAH application steps (Track A applications have an additional step at the beginning of the process during which they receive upfront technical assistance). After an application has passed these four steps, the PV system must undergo a field inspection prior to receiving the SOMAH incentive payment. Further details on the activities that make up each step is provided in Section 3.3.1 and **Appendix B**. As this Figure shows, to date, no SOMAH applicants have progressed beyond completing Step 2 and only two applicants have completed Step 2 (Table 4-2 in Section 4 provides the number of applications currently in each step of the application process). It is important to note that although no applicants have made it past Step 2 in the year since the program launched (July 2019), the SOMAH reservation is good for 18 months and the program is designed such that project construction runs in parallel with the SOMAH application process. For example, an applicant can apply to the SOMAH Program before they have selected a contractor or fully scoped out their PV system, and during the application process they are able to work with the SOMAH to determine project details. As a result, months can pass before PV systems are installed. Additionally, the current program year has understandably encountered additional delays due to the COVID-19 pandemic.

FIGURE 1-1: SOMAH PROGAM APPLICATION STEPS



The SOMAH activities which have been completed to date and which form the basis of what the evaluation team examined during this initial phase include:

- **Program launch and administration, including:** Developing and maintaining the application database, processing and reviewing applications submitted to the program to date, developing an Online Bidding Tool that allows property owners to find and request bids from eligible

contractors, and providing weekly updates of the SOMAH Program Working Data Set on the California Distributed Generation Statistics website.[5]

- **Marketing, education, and outreach (ME&O), including:** Website and content development (including a comprehensive program website with modules for property owners, tenants, contractors, and job seekers; a web-based program handbook; tenant-facing materials; program related toolkits for contractors; an application guide; and program reports); and engaging property owners to educate and encourage participation.
- **Workforce development, including:** Engaging Job Training Organizations (JTOs) to take part in program outreach to eligible workers, in particular JTOs operating in disadvantaged communities and with underserved populations; creating a Job Training Portal; and conducting Contractor Eligibility Trainings.
- **Technical assistance, including:** Preparing capacity-building activities to serve Track A[6] applicants in the future, including process and database development, software configuration and template creation for host customer technical assistance reports, and coordination with related programs for leveraging energy efficiency, and energy storage resources and incentives.

1.6 KEY FINDINGS AND RECOMMENDATIONS

Through in-depth interviews with the SOMAH PA, IOUs, and the CPUC, we identified two primary goals that drive program activities: 1) Increasing access to solar and its benefits among low-income Californians residing on a deed-restricted low-income property that is located within a DAC and/or maintains at least 80% of residents whose income is 60%, or less, than the AMI to reach an installed generating capacity of at least 300 MW_{AC} by 2030; and 2) Fostering economic development in these communities through solar-related job training and workforce development. These are reflected in the Logic Model (page 21). The SOMAH Program also includes the following goals and objectives: ensuring direct tenant benefit, increasing program accessibility, and efficient program administration.

Summary: The SOMAH PA and stakeholders are broadly aligned and operationally set up to achieve SOMAH Program goals. Through iterative stakeholder interviews and document review, the evaluation team found that the SOMAH PA, the IOUs, and the CPUC Energy Division are aligned regarding the SOMAH Program's role in delivering solar and solar benefits to low-income and disadvantaged communities

[5] https://www.californiadgstats.ca.gov/downloads/#_somah

[6] There are two pathways, designated as "tracks," to apply for a SOMAH incentive: Track A and Track B. Track A is intended for property owners who would like to receive technical assistance services from the SOMAH PA to help assess the solar potential at their property, and/or identify eligible contractors for their project. Track B is designed for property owners who do not require technical assistance to submit a project reservation and have identified an eligible contractor they would like to work with for their project.

through incentivizing affordable solar energy. Furthermore, the SOMAH PA has developed a robust operational framework and network from which to implement these goals.

To ensure long-term success, we recommend clarifying program requirements to support its goals and setting clear benchmarks for success. Elements of the program design may benefit from greater clarity and focus to ensure that the program is effective in its goal of increasing program accessibility and broadening the distribution and flow of program benefits. The following summarizes our findings and recommendations.

Finding 1: The SOMAH legislation acknowledges that the program should produce economic benefits and development among disadvantaged communities.[7] However, the term "disadvantaged community" in programmatic literature is generally used to denote the specific criteria defined by CalEPA[8] and is used as a criterion for program eligibility rather than more broadly to historically disadvantaged or underserved communities.[9] [10] Thus it may be unclear which communities are the focus where economic and workforce development are discussed, and where it is presumably the intention of the legislation not to foster economic growth *solely* in disadvantaged communities as defined by CalEPA, but rather more broadly among underserved communities.

Recommendation 1: Identify, define, and adopt terminology to refer to "disadvantaged communities" in the context of economic and workforce development. We note that an existing programmatic definition is provided in the SOMAH PA's local and targeted hiring practices, which we will adopt in this report to define groups included in the broader definition of disadvantaged communities, and refer to as "underserved communities".

Finding 2: Although the CPUC acknowledged the importance of local hiring in the effort to serve vulnerable communities, it declined to adopt specific requirements around SOMAH Program hiring and

---

[7] D. 17-12-022 Section 1.1.1. "In addition, program service providers must produce economic benefits by providing job opportunities to residents of disadvantaged communities." California Code, Public Utilities Commission Section 2870(f)(6) "The commission shall establish local hiring requirements for the program to provide economic development benefits to disadvantaged communities."

[8] https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

[9] The SOMAH Program Handbook Section 1.1. "For the SOMAH program, disadvantaged communities are defined as the 25 percent most disadvantaged census tracts on the CalEnviroScreen 3.0, and 22 census tracts that have the 5 percent highest pollution score but not socioeconomic data."

[10] SOMAH Program Handbook Section 2.8.6. refers to "targeted" populations (for hiring purposes) which have been traditionally underserved and can include residents of disadvantaged communities (per CalEnviroScreen 3.0), affordable housing residents, women, people of color, and other individuals who have faced or who have overcome at least one of the following barriers to employment: being homeless, being a custodial single parent, receiving public assistance, lacking a GED or high school diploma, participating in a vocational English as a second language program, or having a criminal record or other involvement with the criminal justice system."

training practices.[11] The SOMAH PA defines and emphasizes local and targeted hiring practices; however, there is a lack of clarity on how success will be measured. The SOMAH Program aims to drive economic development and job training opportunities in underserved communities, yet ambiguity exists around the extent to which the SOMAH Program seeks to identify and engage trainees that reside in the communities the program aims to serve. To better assess the program, clarifying this objective will be important to measuring the success of SOMAH's short-, mid-, and long-term goals.

Recommendation 2: Tighten the workforce development requirements to ensure the job seeker benefits are being applied to the intended populations through the following actions:

- Consider setting goals and year-over-year benchmarks for trainees from the groups delineated by the SOMAH PA to provide insight into the program's progress in training local and underserved groups.
- Explore ways to support and develop trainees from smaller contracting firms. In the spirit of broadly sharing the benefits of the program, explore the extent to which the SOMAH Program might provide additional workforce development to smaller contractors who can help diversify the overall participant pool.

Finding 3: Upon launching, the SOMAH Program experienced an influx of applications, driven largely by a small number of businesses that were prepared for, and actively awaiting, the program launch. Importantly, the SOMAH Program was designed to encourage diverse contractor participation and create opportunities for small contractors and property owners to participate in the program; however, existing efforts may need to be augmented to bring about broader, more diverse program participation. The evaluation team notes that instituting a lottery system[12] to replace the current "first come, first served" approach to applications could increase participation and diversity among property owners and contractors, in terms of size, location, and previous program participation.[13] [14]

[11] D. 17-12-022. Section 3.3.2. "Providing Economic Development Benefits Through Job Training and Local Hiring."

[12] Advice Letter 114-E submitted by CSE on June 26, 2020 includes a proposal to modify the SOMAH Program handbook to allow for the flexibility to utilize a lottery system to manage the pipeline of applications submitted. This proposed change is currently pending.

[13] Semiannual Progress Report: July 1, 2019 – December 31, 2019. Section 4.1 Reporting, Feedback, and Accountability Mechanisms.

[14] Semiannual Progress Report: July 1, 2019 – December 31, 2019. Section 4.1 Reporting, Feedback, and Accountability Mechanisms.

Recommendation 3:

- Consider progressive, year-over-year goals and benchmarks on applicant diversity. The tracking of applicant diversity could be expanded to include business ownership characteristics, such as women, minority, disabled veteran, and LGBT-owned businesses, as called out in SB 255.[15]
- In Phase II of the evaluation the PA and evaluators should explore program participation barriers small contractors face and whether setting caps on large solar contractor applications would help ensure participation among property owners and a more diverse set of contractor applications. Additionally, research should be conducted to better understand the extent to which large contractors may be employing the smaller contractors as subcontractors for SOMAH projects.
- In future evaluations, consider conducting interviews with contractors who have completed projects and who have the eligibility training but have not participated in the SOMAH Program to understand participation barriers.
- Future evaluations should consider conducting interviews with property owners who have been approached by the SOMAH PA or their CBO partners, or who have registered interest in SOMAH, but have not submitted an application to assess whether current outreach is sufficient to successfully introduce property owners into the program and through the application process. If it is deemed insufficient, identify ways to restructure outreach and/or technical assistance to bring more property owners into the application pipeline.
- In Phase II of the evaluation, explore the degree to which program financing and access to capital is a barrier to participation for smaller contractors and property owners who are unable to float the cost of the system until the incentive is paid.

Finding 4: The SOMAH Program requires projects to be completed at affordable housing properties. When the evaluation team reviewed the available data on qualifying applications, the team found that roughly one-quarter of applications qualified as serving both a DAC (a disadvantaged community defined by a CalEnviroScreen score in the top quartile) and income-qualified tenants.

Recommendation 4: In Phase II of the evaluation, explore the gap between applicants who qualify as serving DACs and properties that qualify under income thresholds. There is still much that is unknown about these differences between these two program-eligible populations and thus a comparison of those that do and do not qualify for one categories or another can shed light on any qualitative and/or material differences between the two groups. By understanding how the buildings, neighborhoods, and tenants'

[15] SB 255 encourages IOUs, CCAs, and other regulated entities to voluntarily adopt a plan for increasing women, minority, disabled veteran, and LGBT business enterprise procurement and to voluntarily report activity in this area to the Legislature on an annual basis. http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200SB255

experiences differ across categories, the SOMAH Program will better grasp how the program funds are being allocated to disadvantaged and low-income populations and the extent to which it meets the spirit of the legislation.

Finding 5: The SOMAH Program application portal (PowerClerk) does a good job of managing the complex SOMAH application process and storing the numerous forms required throughout the process. There are a number of data elements; however, they are either stored within forms or program correspondence documents within the portal and cannot be easily queried. This makes evaluating the current state of some aspects of the program difficult and not easy to track.

Recommendation 5: Create additional fields in the program tracking database to facilitate tracking and reporting on key program metrics. These fields would include items such as:

- Reason for program suspension. Currently, this information is only stored in the letters that are sent to program applicants. Adding primary reasons as a dropdown field in the program tracking database would allow for more rapid identification and resolution of application issues.
- Reason for program cancellation. The evaluation team found that nearly half of the SOMAH cancellations, nine of the 23 cancellations to date, were due to duplicate applications. Having a field to identify the primary reason for application cancellation would allow for an improved understanding of the current program status.

Additionally, identify a process by which large errors encountered within the database related to PV capacity sizing or incentive reservation amount can be rectified in a more timely manner to free up funding for waitlisted projects and improve the accuracy of reported program capacity and incentive funding.

Finding 6: Properly sizing PV systems relative to the underlying building consumption is essential to maximizing the reach of the SOMAH Program incentives. Currently, as part of the application review process, the SOMAH PA requests data from the appropriate IOU to compare expected PV system generation with whole-building historical consumption. The evaluation team reviewed a sample of data provided from the IOUs during the Reservation Request Step. Based on this preliminary review, the team finds opportunities for improvement in the content and formatting of the IOU data. For example, some consumption datasets lacked timestamps that would allow the SOMAH PA to associate the values with specific billing periods.

Recommendation 6: The SOMAH PA should work with the IOUs to ensure the consumption data provided during the Reservation Request step allows the PA to make an accurate determination of appropriate PV

system size. At a minimum, this would include information on tenant occupancy level and dates corresponding to the monthly consumption fields.[16]

Finding 7: The program requires system owners to contract with a Performance Monitoring and Reporting Service (PMRS) provider to collect PV system performance. This data is primarily for SOMAH developers and host customers to ensure their system is working properly and troubleshoot issues in real time. Net Generation Output Meter (NGOM) data is utilized by the IOUs to calculate bill credits and the IOUs have agreed to provide this data to the SOMAH PA annually. The evaluation team was not able to confirm that a mechanism exists to ensure data is available to measure program impacts as no NGOM data for SOMAH projects is available to date. Ensuring a centralized repository of solar-generating data is available to evaluators will facilitate evaluation efforts during Phase II and beyond.

Recommendation 7: A formal data collection process should be established to ensure data elements are retained as needed for future evaluation efforts. If this is considered out of the scope of the SOMAH PA, it may be necessary to contract with a third party to collect and process data elements on a regular basis or develop a process with the IOUs to house and make available to evaluators the data they collect for billing purposes.

[16] The evaluation team understands from a recent discussion with the PA that the IOUs have informed them that providing tenant occupancy data is an extremely difficult request. In Phase II of this study the evaluation team will work with the SOMAH PA and IOUs to better understand the complexity of adding such a field and try to determine a feasible means, such as receiving recent occupancy data from the property manager, of accounting for unit vacancy in the system sizing.

2 PHASE I METHODOLOGY

This section summarizes the research activities carried out for Phase I.

2.1 STAFF AND STAKEHOLDER INTERVIEWS

To understand program design and delivery, the evaluation team conducted interviews with the organizations comprising the SOMAH PA, the participating IOUs, and the senior regulatory analyst for SOMAH at the CPUC, as shown in Table 2-1. These in-depth interviews were designed to gather important context and background information on the program to inform the program logic model, metrics, and early findings.

Through this interview process combined with the Documentation Review, the evaluation team created an inventory of program activities and their associated outputs, performed by stakeholder type and individual actor where there were differences.

TABLE 2-1: NUMBER OF STAFF AND STAKEHOLDER INTERVIEWS CONDUCTED

Organization Type	Organization	Number of Completed Interviews
SOMAH PA	Center for Sustainable Energy (CSE)	3
	GRID Alternatives (GRID)	3
	Association for Energy Affordability (AEA)	3
	California Housing Partnership Corp (CHPC)	2
IOU	Southern California Edison (SCE)	1
	Pacific Gas & Electric (PG&E)	1
	San Diego Gas & Electric (SDG&E)	1
	PacifiCorp	1
	Liberty Utilities Co.	1
Regulatory Commission	California Public Utilities Commission (CPUC)	1
TOTAL	**10**	**17**

Interviews were recorded and transcribed for analysis purposes.

2.2 DOCUMENTATION REVIEW

The evaluation team conducted a thorough document review of the program materials produced to date, including: legislation relating to the creation and implementation requirements of the program; the SOMAH Program website, handbook, and program implementation plan (PIP); the ME&O strategy; semi-annual progress and expense reports; and outreach materials.

2.3 INVENTORY OF PROGRAM ACTIVITIES, RESPONSIBILITIES, AND OUTPUTS

Through the in-depth interviews and document reviews, the evaluation team compiled a comprehensive inventory of the SOMAH PA and IOU's activities, responsibilities, and outputs sub-divided by the specific organization responsible for achieving each activity.

This inventory served as the basis for the logic model, metrics development, and analysis. This work will also serve as the basis for the process flow charts and provide necessary background for the evaluability assessment, both to be completed in Phase II of the evaluation.

2.4 PROGRAM LOGIC MODELING

The evaluation team developed a logic model connecting the goals, activities and outputs identified through the stakeholder interviews, documentation review, and inventory of the program activities, responsibilities, and outputs. To complete this work, we performed a comparative analysis of the relevant legislation, examined program materials, and conducted stakeholder interviews to identify: (1) how program goals are articulated, (2) how these goals are supported by program activities, and (3) potential gaps where activities and outputs may not be aligned or sufficient to achieve program goals.

In addition, the evaluation team sought to map and categorize outcomes by their focus in order to understand the range of impacts the program seeks to produce, including ME&O effectiveness, successful solar PV installations, program benefits spillover and distribution, technical assistance, workforce development efforts, economic development, and energy and environmental benefits.

The model provides answers to the following questions:

- What are the goals of the program? What is California trying to achieve by offering the program?
- What is the SOMAH PA doing to meet those goals?
- Who is the SOMAH Program audience? Who are the program actors?
- How can the SOMAH Program successes be measured?
- What long-term effects, outcomes, or impacts does California expect to see as a result of the program?

The logic model was developed iteratively in review with the SOMAH PA. As a living document, we expect this model to be continually refined as the program matures.

2.5 METRICS DEVELOPMENT

Identifying the best metrics for measuring a program's success requires finding the right intersection between available data, program goals, and program operations. The evaluation team first distilled the program goals into six high-level themes and laid out an exhaustive list of possible metrics based on available data across those themes. The evaluation team then narrowed the list of metrics to those that best meet the CPUC's needs and tied them to a detailed list of the program's goals separated by theme. Finally, the evaluation team will reframe the metrics by program operations as a part of the Phase II evaluability assessment activities.

2.6 PHASE I DATA REVIEW

During Phase I of this study, the evaluation team reviewed current SOMAH PA data collection practices to better understand how and where various SOMAH Program data elements are being collected and stored. This data review sought to verify and document key program data collection activities, ensure the feasibility of program participation tracking and program evaluability, and identify areas where changes to current data collection practices may be necessary. The data review also assessed the accessibility and completeness to determine the feasibility of potential Phase II evaluation activities being considered to quantify the energy (kWh, kW), environmental (GHG), and economic impacts of the SOMAH Program. The data sources reviewed during Phase I included:

- Application data stored in PowerClerk 2.0
- Tenant and common area energy consumption and billing data
- PV generation data
- Energy Savings Assistance (ESA) Program cross-participation data
- Disadvantaged Community data

3 PROGRAM OVERVIEW

California State Assembly Bill (AB) 693 directed the CPUC to institute a new program intended to make qualifying solar energy systems more accessible to low-income and disadvantaged communities (DACs).[17] In accordance with AB 693, the CPUC issued D.17-12-022 on December 14, 2017, creating the SOMAH Program and establishing program goals and eligibility requirements.

The SOMAH Program is overseen by the California Public Utilities Commission (CPUC) and provides incentives to install 300 MW (CEC-AC) of solar energy on qualifying multifamily affordable housing through December 31, 2030. The program was designed to expand and improve on the Multifamily Affordable Solar Housing (MASH) Program.[18] The SOMAH Program operates in the service territories of Pacific Gas & Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric (SDG&E), Liberties Utilities Company (Liberty), and PacifiCorp (collectively, the Investor-Owned Utilities, or IOUs).

The SOMAH Program is jointly administered statewide by a program administrator (PA) team comprised of the Center for Sustainable Energy (CSE), GRID Alternatives (GRID), the Association for Energy Affordability (AEA), and the California Housing Partnership Corporation (CHPC). These organizations have both distinct and shared roles and responsibilities for the four key performance areas as delineated by the program budget: program administration; marketing, education, and outreach (ME&O); workforce development; and technical assistance. A detailed account of PA roles and responsibilities by organization is provided in **Appendix C.**

3.1 PROGRAM GOALS

SOMAH's over-arching objective is to achieve broader access to the benefits of solar by subsidizing the costs to install solar panels on certain types of multifamily affordable housing that are underserved in the renewables market. The IOUs allocate tariff credits from the solar generation to individual tenant and common area utility bills through virtual net energy metering (VNEM).[19] The program also seeks to ensure broad economic impact through workforce development, job training requirements, and job hiring

[17] https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB693

[18] A summary of other California statewide programs benefitting disadvantaged communities is provided in **Appendix F**.

[19] VNEM allows an installed solar PV system to offset multiple separately metered tenant units and/or common areas by dividing monthly solar generation across accounts according to percentages submitted via the VNEM Allocation Worksheet upon application. The utility then applies credits directly to the account holders' bills.

practices to benefit local and underserved groups.[20] Together, these two prongs are designed to deliver economic benefits to low-income and DACs throughout California via bill savings and job opportunities.

Through detailed document review and a series of stakeholder interviews, the evaluation team identified six overarching goals of the SOMAH Program:

1) Expanding access to solar generation and its benefits to low-income customers in multifamily housing, where it is typically limited
2) Incentivizing the installation of at least 300 MWs of solar generation capacity
3) Ensuring financial benefits accrue primarily and directly to tenants, and are not recaptured by other means
4) Providing greater accessibility to the program for applicants through a single point of contact, full service technical assistance, and coordination with other low-income programs
5) Promoting local economic development through job training requirements and hiring practices
6) Facilitating efficient program administration by a single, statewide administrator

The source citations for these goals can be found in **Appendix D** and the program's annual MW installation goals in **Appendix E.**

3.2 PROGRAM DESIGN AND BENEFITS

3.2.1 Program Eligibility

To be eligible to participate in the SOMAH Program, properties must demonstrate through documentation of Public Utilities Code Section 2852[21] that they are subject to a deed restriction[22] or a regulatory agreement where the property is classified as affordable housing and where they have at least 10 years remaining on the terms of affordable housing restrictions. In additional, properties must be low-income

[20] "Local" is defined as an individual living in the county where the SOMAH project is underway. Targeted groups include affordable housing residents, women, people of color, and other individuals who have been homeless, being a custodial single parent, receiving public assistance, lacking a GED or high school diploma, participating in a vocational English as a second language program, or having a criminal record or other involvement with the criminal justice system. (SOMAH Program Handbook. Section 2.8.6 Local and Targeted Hiring.)

[21] Cal. Pub. Util. Code §2852: http://www.search-california-law.com/research/ca/PUC/2852./Cal-Pub-Util-Code-Section-2852/text.html

[22] Deed restrictions must be in good standing and not in violation of the terms of low-income documentation, and the properties must show proof by providing a copy of the recorded documentation from one of a number of verified public entities, such as the U.S. Department of Housing and Urban Development (HUD).

residential housing and either: 1) be located in a DAC as defined by the California Environmental Protection Agency (CalEPA) pursuant to Health and Safety Code (HSC) Section 39711; or 2) at least 80 percent of property residents must have incomes at or below 60 percent of the Area Median Income (AMI) as determined by the Department of Housing and Community Development.

3.2.2 Program Participants

The SOMAH Program has several parties who can be considered program participants. For the clarity of this report, we lay out the definitions for each of these below.

TABLE 3-1: PROGRAM PARTICIPANT DEFINITIONS

Program Participant	Definition
Applicant	The Applicant is the person or entity that is responsible for completing and submitting the SOMAH Program application and serves as the main point of contact for the SOMAH PA throughout the application process.
Host Customer	The Host Customer must be the owner of, or persons/entity responsible for, the property where the SOMAH solar PV will be installed; however, the Host Customer does not need to be the entity responsible for paying for retail-level electric services. The Host Customer is the incentive reservation holder and retains rights to the incentive reservation and corresponding incentive application number.[23]
System Owner	The System Owner is the owner of the PV system at the time the incentive is paid.[24]
Tenant	The tenant is the individual or individuals residing in a unit within a property participating in the SOMAH Program.
Solar Contractor	The Solar Contractor is the person or entity that is responsible for installing the program-incentivized solar system. The Solar Contractor must be an appropriately licensed California contractor and have an active license for installing solar PV systems.
Job Trainee	Eligible Job Trainees include 1) anyone currently enrolled in or recently (within 12 months) graduated from an eligible job training program, and/or 2) tenants whose primary residence is located within the SOMAH property.

3.2.3 Program Benefits

The SOMAH Program's goals have an implicit objective described by the SOMAH PA team: to generate education and transparency and to diffuse the program's benefits as broadly as possible among a diverse

[23] The Host Customer has the right to designate a third-party Applicant to act on their behalf throughout the application process. While the Host Customer is can be a Limited Partnership (LP) or Incorporation (Inc.) specific to an individual housing development, they very often fall under an affordable housing umbrella company, such as Bridge Housing or National CORE.

[24] For example, when a vendor sells a turnkey system to a Host Customer, the Host Customer is the System Owner. In the case of a third-party-owned system (or leased system, for example), the third party (or lessor) is the System Owner.

group of tenants, property owners, job seekers, and contractors. Table 3-2 lays out the program participants and the benefits the program aims to provide to them.

TABLE 3-2: PROGRAM BENEFIT BY PARTICIPANT TYPE

Program Participants	Benefits
Tenants	• Energy bill credits • Job training opportunities • Information regarding other clean energy programs they are eligible to participate in
Property Owners	• Energy bill credits for common areas • Greater stability in rent payments • Information regarding other clean energy programs available to them and their tenants
Job Seekers	• Access to the SOMAH Job Portal to search for jobs • Job training opportunities
Solar Contractors	• Project incentives to improve financials of projects • SOMAH PA-created outreach resources for marketing to property owners • Online Bidding Tool to bid for work, mostly from Track A applications • Access to the Job Portal to find qualified job trainees

Tenants: The SOMAH Program goals require that the installed solar generation accrue primarily and reliably to tenants. This was specified to make up for a shortcoming of the SOMAH Program's predecessor, the Multifamily Affordable Solar Housing (MASH) Program, which some perceive as having benefitted owners more often, or in greater proportion, than tenants. Furthermore, the program seeks to ensure that these benefits cannot be recaptured through other means, such as rent increases, by requiring the property owner to sign an affidavit ensuring tenant economic benefits.[25]

Property Owners: In another departure from the MASH Program, the SOMAH Program seeks to expand the pool of potential participants to include a greater number and diversity of property owners, particularly those owning smaller and/or more rural properties, or who may lack experience with or knowledge of solar generation and energy efficiency. The program will achieve this by requiring the SOMAH PA to offer a comprehensive suite of services and assistance to guide owners through the program participation process at no cost to them, including education and technical assistance to complete application requirements.

Job Seekers: The SOMAH Program aims to foster local economic development through job hiring and training requirements for SOMAH projects. It also encourages hiring practices (including tenants of participating multifamily properties) that focus on local and underserved segments.

[25] SOMAH Program Handbook, Section 2.12. https://calsomah.org/somah-program-handbook

Solar Contractors: The SOMAH Program provides contractor education and outreach with a focus on increasing the number and diversity of contractors participating in the SOMAH Program to extend beyond larger businesses and those whose business model is largely centered on installing solar on multifamily affordable housing.

3.3 PROGRAM IMPLEMENTATION ACTIVITIES

The program consists of two primary components: (1) incentives to drive the installation of solar energy on qualifying multifamily affordable housing, and (2) support to foster workforce and economic development in underserved communities throughout California. These two efforts are also supported by marketing, education, and outreach (ME&O) initiatives, which are described here as well.

3.3.1 Application Process, Solar Incentives, and Installation

To participate in the SOMAH Program, property owners/operators who are interested/committed to installing an eligible PV system at their property must obtain a funding reservation to ensure incentive funds will be available for their project when the incentive claim is made. Funding reservations are made on a first come, first served basis and last for the duration of the applicable reservation period. The SOMAH Program uses an online application tool, PowerClerk 2.0, to simplify the application process and confirm the incentive amount reserved, contingent on receiving all documents.

There are two tracks that can be used to apply for a SOMAH incentive: Track A and Track B.

- **Track A**, designed for Host Customers who would like to receive technical assistance services from the SOMAH PA to help assess the solar potential at their property and to identify eligible contractors for their project, if needed. These applicants are likely property owners who are provided upfront technical assistance that provides them with an understanding of their property's energy needs and educational, technical, and financial resources to help them better understand key information pertaining to energy efficiency upgrades and solar installation for their property.
- **Track B**, designed for applicants who do not require technical assistance to submit a project reservation, whether a developer or contractor with knowledge of the program or a Host Customer who has identified an eligible contractor they would like to work with. While Track B applicants are not eligible for Upfront Technical Assistance, standard TA services from the SOMAH PA are available throughout the project lifecycle.

Technical Assistance Request: Submitting the Upfront Technical Assistance Request is the first step for Track A applicants. Once this request has been submitted, the incentive funds for the project will be earmarked for three months while technical assistance support services are provided. Within this three-month period, a Reservation Request Package must be submitted by the applicant or the incentive funds will no longer be held for the project.

Reservation Request Package: The first step of the application process for Track B applicants (and step 2 for Track A applicants) is the submittal of the Reservation Request Package. This step requires all applicants to submit a series of documents demonstrating program eligibility and documenting proposed project details, as well the initial[26] VNEM Allocation Worksheet demonstrating that at least 51 percent of the electricity generated by the system will be allocated to tenant bill savings. This form also identifies the VNEM allocation to each individual unit located at the property and is eventually used by the IOUs to determine and apply bill savings once projects are interconnected. It is during this step that applicants must pay the Application Deposit and the SOMAH PA requests historical whole-building consumption data for each property (aggregated separately for all tenant units and common areas) from the IOUs so the appropriateness of the sizing of the solar system can be verified.

Once all Reservation Request Package materials, documentation, and the deposit have been received and processed, applicants are emailed a Reservation Approval Notice. This Notice provides the approved SOMAH incentive funds and the timeline at which subsequent project milestones must occur for the incentive funds to be held.

Project Milestones: Once the Reservation Request is approved, the application moves through a set of milestones in order to receive the final incentives. The milestones are:

- **Energy Efficiency Compliance Milestone** requires applicants to submit documentation of the building's energy efficiency within 60 days of receiving the Reservation Approval Notice.[27] This milestone culminates in an Energy Efficiency Compliance Notice.
- **Proof of Project Milestone** must be submitted with documentation to demonstrate project progress and avoid cancellation of the reservation within 240 days of the Reservation Approval Notice.

[26] This initial VNEM allocation can be updated at various points along the application process, if necessary, as long as the allocation continues to meet program requirements.

[27] Applicants must demonstrate that the solar system capacity (and therefore the incentive) is in line with the properties consumption net any reasonable energy efficiency potential that exists within the building (as determined by a whole-building audit). In sum, solar systems cannot be oversized to offset building inefficiencies.

Incentive Claim Package: Once the applicant submits the necessary documentation, the SOMAH PA conducts an on-site system inspection of the installed solar system, verifies interconnection, and pays the incentive.

3.3.2 Workforce Development

The SOMAH Program actively works to engage job seekers to participate in the program through on-the-job training and employment on SOMAH-incented projects. These activities are described below.

Outreach to Job Training Organization (JTOs) to promote SOMAH: The SOMAH PA has conducted outreach and created a database of current JTOs (and continues to conduct outreach to increase JTO participation), focusing on organizations in DACs who work with underserved communities and are ready to engage with qualified trainees. These partnerships increase the reach and broaden the influence of the program, leading to a more diverse group of job trainees.

Creating and Managing a Job Training Portal: This Portal was created and is managed by the SOMAH PA with the purpose of connecting eligible job seekers with SOMAH Program job opportunities. Job seekers who are engaged by the SOMAH PA and their partner community-based organizations (CBOs)and JTOs are able to access the Job Training Portal, where they can search for jobs in several broad functional areas relating to the program, including PV installation, project design, and project management. To be eligible, an individual must be currently enrolled in or have recently graduated from (within 12 months) an eligible job training program or be a tenant whose primary residence is located within the SOMAH property.

Installer On-the-Job Training: The SOMAH PA has set guidelines for number of trainees and training hours for those training as PV installers according to the size of the project, as shown in Table 3-3.

Job Training and Tracking Data Collection: The SOMAH PA conducts follow-up surveys and collects data regarding the training experience and job retention following the training period in order to understand whether and how training leads to long-term employment.

TABLE 3-3: JOB TRAINING REQUIREMENTS AND HOURS

System Size	Required Number of Job Trainees	Required Hours of Training
Less than 50kW	1 trainee	No fewer than 40 hours of training per trainee
50kW – 100kW	2 trainees	No fewer than 40 hours of training per trainee
Greater than 100kW	2 trainees	No fewer than 80 hours of training per trainee

3.3.3 Marketing, Education, and Outreach

The SOMAH PA conducts a wide range of ME&O activities to support the program with assistance from community-based organizations (CBOs). These activities include, but are not limited to the following:

- **Website and Content Development:** The SOMAH PA created and maintains a comprehensive program website with modules for property owners, tenants, contractors, and job seekers.
- **Program Handbook, Application Support and Toolkits:** The SOMAH PA provides access and support to applicants who may be unfamiliar with solar and request or require assistance as they navigate the application process, including a publicly available handbook, toolkit, and direct support to applicants.
- **Property Owner Outreach and Materials:** The SOMAH PA collaborates with local CBOs to engage property owners about the SOMAH Program and support tenant education through a range of mediums including conferences, webinars, and in-person interactions. For property owners who become applicants, the SOMAH PA has designed a train-the-trainer style program to equip property owners to provide required program information sessions for their tenants.
- **Tenant-facing Education and Materials:** The SOMAH PA develops tenant-facing materials in conjunction with IOUs and works to engage and educate tenants in collaboration with partnered CBOs and property owners.
- **Supporting Job Trainees and Helping Contractors meet Job Training Requirements:** The SOMAH PA provides support to job trainees and contractors in fulfilling job training requirements.

4 PHASE I DATA REVIEW

This section presents the results of the Phase I SOMAH data review, including an assessment of the program data currently being captured and an analysis of SOMAH Program participation to date.

4.1 DATA COLLECTION PLAN REVIEW AND DOCUMENTATION

4.1.1 SOMAH Application Data

The SOMAH Program uses PowerClerk 2.0 as the statewide online application portal and tracking database. In addition to being a website where program applicants can create and submit new SOMAH applications, the application portal is an essential tool used by the PA, SOMAH applicants, and project stakeholders to monitor and track the status of SOMAH projects throughout the entire application process. It serves as both a database entry tool for key project application fields (data entered into the data fields are saved into a program tracking database, which is easily accessible via queries set up using custom reporting queries) and also a repository for submitted application forms and other program documentation. The application portal is also used to manage communications between the SOMAH PA and the applicant regarding the status of their application, changes or additional information required, and upcoming project deadlines. The application data stored in PowerClerk is pulled weekly via an API (similar to what is done for CSI and MASH) and uploaded to the California Distributed Generation Statistics (DGStats) website.[28] The DGStats reporting is managed via a subcontract with Energy Solutions who ensures data integrity and the weekly publication of the working data set. The working data set does not include any PII. During Phase I of this study, the evaluation team met with the Center for Sustainable Energy (CSE), the PA responsible for maintaining the application portal, to get a walk-through of the program tracking data available. This included a tutorial on how to extract data from the tracking data via standard and custom database reporting queries and application form and/or correspondence downloads. A non-disclosure agreement was put in place between the evaluation team and CSE to allow access to a tracking database login and pull data directly from the portal. Some of the key tracking database key fields reviewed and utilized during the Phase I analysis included:

- SOMAH Application Number
- Current Application Status
- Electric and Gas utility service territory

[28] https://www.californiadgstats.ca.gov/

- Property characteristics, including: Property name, address, number of units (and breakout by number of units falling into percentage of Area Median Income buckets), Umbrella company (if property is owned by a housing corporation such as Bridge Housing or LINC Properties)
- Application characteristics, including: Applicant, Project Owner, Track (A or B), Property Eligibility (DAC, low-income, or both), Compliance Method, percentage of system benefits going to tenants versus common areas
- Solar Contractor information, including: Contractor name, phone number, address, license type and number
- System characteristics, including: System capacity, including both system capacity (kW_{AC}) and nameplate rating (kW_{DC}); Azimuth; Tilt
- Equipment characteristics, including: Inverter manufacturer, model, and quantity; Module manufacturer, model, and quantity; Installer company; System ownership (Host customer, Power Purchase Agreement or Solar Lease)
- Energy Storage pairing: a flag indicating the applicant planned to install an energy storage system with their solar system[29]
- System Costs, including: total system cost, PV module cost, inverter cost, PMRS cost, carport cost, permitting fees and balance of system costs[30]
- SOMAH Incentive Amounts, including: both calculated (at time of reservation), reserved (when Reservation Request is approved), and paid (when incentive is paid, all are currently blank)
- Tax Incentives: ITC and LIHTC flags
- Third-party payment amounts: PPA rate per kWh and monthly lease amount (all are currently blank)
- Cross-program participation flags: fields exist to indicate if a project has applied and/or participated in other energy programs; however, to date these fields are blank for all records
- Application Status Dates: dates associated with all key program steps, suspensions, and resubmittals

The application portal also stores key program data in forms that cannot be accessed using standard or custom report queries and are only available for each project through individual document downloads. Storing some of these data in database fields that can be easily queried can result in improved program

[29] This variable was missing populated for 80 percent of all current applications.

[30] For third-party owned systems (PPAs and leases), all costs are set to $1 except balance of system cost.

tracking, increased program evaluability, and/or reduced errors resulting from downstream data entry. Examples of program data not currently stored in the tracking database fields include:

- VNEM Allocation: each of the IOUs has its own VNEM Allocation Form, but all of them require the applicant to include the account numbers (common area) or meter number (tenant unit), addresses (including unit number for the tenant accounts), and VNEM allocation percentages. The VNEM allocation form is submitted to both the SOMAH PA and the IOU, separately. The SOMAH PA uses the VNEM allocation form to verify the allocation percentage breakdown between the common area and tenant units and to request the consumption data from the IOUs. The IOUs, who receive the VNEM allocation form from the contract in the interconnection application, use these forms to calculate the SOMAH bill credits.
- Reason for Application Suspension or Cancellation: reviewing individual program applications within the application portal allows one to see why most applications are suspended multiple times throughout the application process. The reasons for an application suspension (or similarly cancellation) are currently not stored in any tracking database fields and can only be assessed through a manual review of the suspension (or cancellation) letters that are sent via the application portal to program applicants. This makes it difficult to identify potential application issues that may be easily remedied via a process change, such as enhanced documentation.[31]

An initial review of the SOMAH tracking data identified a few potential issues that may require further review:

- Applicants that applied to multiple or the wrong service territory.[32]
- Application statuses that were inaccurate.
- SOMAH applications that have been submitted multiple times (duplicates).

4.1.2 Tenant and Common Area Electric Consumption and Billing Data

As part of the Reservation Request step of the application process, applicants submit a Letter of Authorization authorizing their IOU to release customer information (customer electricity usage data,

[31] Section 6.2.1 includes an assessment of the reasons for suspension of applications during the Reservation Request step based on a manual review of 20 applications.

[32] The PowerClerk database permits application submissions by territory based on the applicant reported zip code for the project site. Applications submitted to the wrong territory are either due to user error or the proximity of the zip code to a different IOU service territory. In the case of proximity of a zip code to another service territory, the SOMAH PA reviews the project site and service territory information to ensure the back end PowerClerk permissions are set accordingly.

billing records, billing information, and other SOMAH programmatic data) on an aggregate whole-building level (tenant and common data can be aggregated separately). After this form has been submitted, the SOMAH PA (CSE) sends a request to the IOU for the previous 36 months of electricity usage data and uses these data to verify the proposed PV system has been sized appropriately and meets the program requirements. Each of the IOUs uses a different process to pull this data for the PA using a mix of service account numbers, meter numbers, and property (and tenant unit) addresses. These consumption data are authorized by CPUC Resolution E-4987[33] to be requested of the IOUs on an "as needed" basis.

Similarly, the SOMAH PA is authorized to request 36 months of historical bill and demand charges aggregated across tenant and common area meters on an "as needed basis to support financial savings analysis for participants". The Data Use Case[34] file provided to the evaluation team by the SOMAH PA indicates that these data are to include "total bill charges as well as demand charges for aggregated tenant/owner-meters, including any variation of off-peak, on-peak, or other peak times" and "Cost data must include both distribution and production costs, i.e., inclusive of all 3rd party / CCA cost[s]." These data are to be inclusive of any account number or service account ID (SAID) changes resulting from unit turnover or building ownership changes (i.e., must be provided for the site address(es)).

The evaluation team discussed these data feeds with the SOMAH PA and reviewed sample IOU data consumption files for the three IOUs who have provided these data to the SOMAH PA to date to determine if a similar data feed could be used in Phase II of the evaluation to estimate the SOMAH Program's energy and bill savings. At of the time of this report, the PA has not requested billing data for any projects and has yet to establish a process for the timing or frequency which data will be requested.

Our assessment of the data currently transmitted from the IOUs to the PA identified a few issues that could be problematic for evaluation purposes, as well as for programmatic purposes. These issues include:

- The IOU data feeds provided to the SOMAH PA are aggregated across all tenant units (or common area meters), which are not necessarily on the same rate schedule, and which can be tiered (baseline) or TOU rates. In either case, individual tenant bills are dependent on either the tenant's hourly energy consumption or total consumption relative to their baseline; thus, accurately estimating tenant bills based on an aggregate meter data feed can be problematic. One of the IOU data feeds currently groups tenants by the rate they are on and then provides aggregate monthly consumption and bill amount for each unique rate found at the site. This IOU does provide the total number of tenant meters included in the data overall but not for each of the individual rates. Including the number of occupied (non-zero) tenant units that are on each of the

[33] https://docs.cpuc.ca.gov/SearchRes.aspx?docformat=ALL&DocID=279170414

[34] SOMAH Data Use Case_By Report Type_Final.xlsx

rates in each month would enhance the value of this data feed if it is allowed due to aggregation and privacy rules.

- Currently one of the IOUs provides a variable indicating the number of tenant units included within the aggregated tenant consumption data feed. Initially, the evaluation team interpreted this data to be the number of occupied tenant units during a given month, however has recently found out that it refers to the number of meters included within a given months aggregated load (including meters with zero consumption in the month due to unit vacancy). Missing units in this field are instead attributable to the IOU being unable to identify the tenant unit based on the data provided to them (typically account address) or a meter not having a data-read in a given month due to their billing cycle. Thus, at this time, the occupancy level relative to the tenant aggregated load data provided by the IOUs to the PA is unknown. This adds uncertainty to determine the baseline consumption of the project and reduces the accuracy of the estimated program impacts. According to the PA, the IOUs have stated that adding a field corresponding to unit occupancy is exponentially more difficult than what is currently being provided. Missing occupancy data can also be problematic during the application process as it makes it difficult for the SOMAH PA to verify that the proposed SOMAH PV system is being appropriately sized. The evaluation team recommends working with the SOMAH PA and IOUs during Phase II of the evaluation to identify a feasible means of acquiring tenant occupancy data both during the SOMAH Application process and program evaluation. The evaluation team understands that providing tenant occupancy data can be difficult for the IOUs due to data limitations and inconsistencies with how move-outs/tenant occupancy are handled by a property owner.
- For some SOMAH projects, the IOUs have had difficulty matching the tenant addresses and meter numbers entered during the application process to those listed in their billing system which led to delays in the application process. This was often caused by Applicants recording incorrect meter numbers or addresses on the VNEM forms used by the IOUs to pull data from their billing systems. In the short-term, to avoid these delays, the PA has implemented an "estimation approach" process whereby as long as the IOU is able to provide monthly consumption data for at least 90 percent of the tenant accounts, the PA estimates the overall tenant load for the project by normalizing these data to make them representative of 100 percent of the tenant units. While this is a good workaround for system sizing purposes, if a similar process is utilized to estimate program impacts and bill savings it will reduce the accuracy of the results. To improve this process for the long term, the PA should work with Applicants to identify means of improving the accuracy of the information included on the VNEM forms.
- Currently, one of the IOUs does not provide any date or month field corresponding to the monthly usage data extract provided (e.g., the variable names in the data feed are kWh_Usage_1 through kWh_Usage_36). Without knowing the approximate date or month and year of the readings, it is not possible to accurately estimate the average daily consumption (as the number of days in the

monthly extract is unknown and can vary). This would be problematic from an evaluability perspective.

- The IOU data provided to the SOMAH PA are historical (the 36 months prior to the data request); thus, they do not include any data corresponding to the VNEM allocations or bill savings resulting from the SOMAH PV systems as they are the pre-SOMAH data. This meets the need of the program as it allows the PA to understand the "baseline" energy consumption at the site to ensure the proposed PV system is sized appropriately.[35] Once the PV system has been installed, the IOUs will manually enter[36] and apply the final VNEM tenant and common area allocations in order to calculate VNEM credits and monthly bills. The SOMAH PA is allowed to annually request the NEM credits from the VNEM allocation (on a monthly basis) in order to verify the VNEM allocations have been accurately applied per the VNEM allocation form and to measure tenant impacts and benefits from the PV system. During Phase I of the evaluation, it was not possible to assess the availability and accessibility of these data elements as no SOMAH projects have been installed and interconnected.

4.1.3 PV Generation Data

To date no SOMAH projects have reached the installation and interconnection step; thus, no SOMAH PV generation data are available for the evaluation team to review at this time. However, reviews of program documentation and discussions with the SOMAH PA allowed the team to confirm the following PV generation data collection protocols, which are also documented in the SOMAH Program Implementation Plan (PIP).[37]

- "The System Owner must contract with a PMRS (Performance Monitoring and Reporting Service) provider for a minimum of 20 years and must ensure that 15-minute interval production data is provided to the SOMAH PA upon request."[38] The SOMAH PA indicated that, to date, they have not put into place a process for requesting these data from the PMRS. The evaluation team will work with the SOMAH PA during Phase II of this study to ensure that the accessibility, content, and format meet the needs of current (Phase II) and future SOMAH Program evaluations

[35] The baseline energy consumption is just one of the elements reviewed to ensure the systems are sized appropriately. The Solar Sizing tool also considers energy efficiency measures that should be implemented to reduce the site level baseline load.

[36] VNEM allocations are captured in the application portal in forms uploaded by the Applicant, not as data entry fields. The IOUs use these forms to enter the VNEM allocations on a tenant-by-tenant basis into their billing systems.

[37] Revised SOMAH Program Implementation Plan. April 9, 2019.

[38] SOMAH Program Implementation Plan, Section 2.13.

(evaluability assessment). This effort should involve the development of a formalized data collection process to ensure these critical data are available for future measurement and evaluation (M&E) efforts.

- The PMRS is responsible for providing 15-minute interval production data to participating IOUs for all SOMAH interconnected PV systems located within their service territory so that the IOUs can apply the tenant and common area VNEM allocations and calculate the resulting participant bills net of the accumulated bill credits. In Phase II of this study, once SOMAH systems have been interconnected, the evaluation team should review this process to ensure the data is being provided correctly to the IOUs and thus the tenant bill credits are being accurately determined.

4.1.4 Energy Savings Assistance (ESA) Program Cross-Participation Data

One of the stated goals of the SOMAH Program is to provide greater accessibility to the program through coordination with other low-income programs. As stated in D.17-12-022 (Section 3.3.3), this includes the requirement for SOMAH projects to undergo energy efficiency audits and notify tenants about the availability of the IOUs' Energy Savings Assistance (ESA) Program. As part of the Reservation Request Package, applicants are required to submit a list of all tenant addresses that can be shared with the IOUs and used by them for ESA Program referral. The utilities are required to process ESA Program referrals from the SOMAH Program. At this time there has been no verification that the IOUs who have received ESA Program referrals[39] have acted upon them. In Phase II of the evaluation, a comparison of enrollment in the ESA Program across the IOUs will be attempted based on data provided by the IOUs (described below) to ascertain the effectiveness of these referrals. During the application process, the SOMAH Program also requires documentation of an on-site whole building walkthrough energy audit (ASHRAE Level 1 within the last three years) or proof of enrollment in an IOU, Regional Energy Network (REN), Community Choice Aggregation (CCA), or Federal Whole Building Energy Efficiency (EE) Program in order to complete the Energy Efficiency Compliance Milestone.

To fulfill the requirement that SOMAH tenants be informed about the IOU's ESA Program, the SOMAH PA is required to provide the IOU's ESA Program point of contact with a monthly list of SOMAH property owner contact information for applications that have received Reservation Request Approval. This file can then be used by the IOUs to reach out to SOMAH participants and market the ESA Program. The SOMAH PA is also currently working on a Host Customer opt-in process that can be used to share property owner contact information between the SOMAH PA and the IOUs specifically for receiving outreach regarding other relevant IOU EE programs available to them. That process is not yet in place but will likely be

[39] ESA referral are provided monthly to IOUs for Approved Projects. As of May, only PG&E and SCE had received ESA referrals from the PA. SDG&E will receive their first ESA referral file in July 2020.

underway in the next one-to-two months and so details on the frequency, format, and appropriate IOU contacts are still be worked out.

During Phase I of this study, the evaluation team also conducted research to determine what ESA Program cross-participation data are available from the SOMAH PA and could be analyzed during Phase II. Currently there is a variable in the tracking database titled "Coordination with Non-SOMAH Energy Programs and Upgrades", which is generated as part of the Upfront Technical Assistance request step and is thus only required of Track A applicants. The Data Use Case file referenced earlier also includes information on the various ESA Program data elements and metrics that the SOMAH PA can request from the IOUs. These data are provided to the SOMAH PA to "determine the effectiveness of ESA referrals from SOMAH, and identify strategies to increase ESA enrollment by tenants once contacted by the IOUs".[40] These data can only be requested annually and no timeline for when this annual request will take place has been set yet. According to the Data Use Case file, the annual request can include:

- ESA in-unit enrollment status (i.e., did the tenant enroll in ESA? Yes/No. If No, why not? "Ex. Didn't return phone call, not interested, have not been able to contact them, etc.")
- ESA in-unit enrollment date
- ESA in-unit home treated date
- ESA in unit measures installed
- ESA Common Area Measures (CAM) enrollment status (i.e., did the property owner enroll in ESA CAM? Yes/No. If No, why not? "Ex. Didn't return phone call, not interested, have not been able to contact them, etc.")
- ESA CAM enrollment date
- ESA CAM treated date
- ESA CAM measures installed

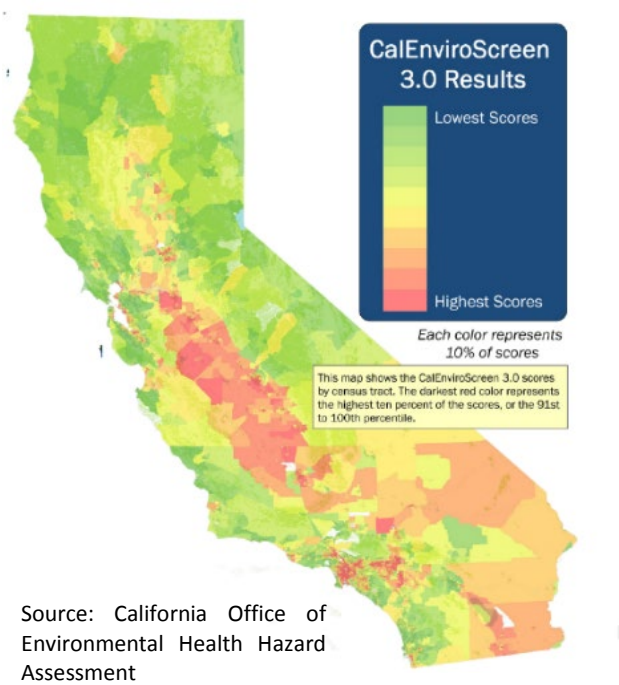
4.1.5 Disadvantaged Community Data

CalEnviroScreen is a mapping tool that helps identify California communities that are most affected by various sources of pollution and where people are often especially vulnerable to pollution's effects.[41] CalEnviroScreen uses environmental, health, and socioeconomic information to produce scores for every census tract in the state, allowing metrics within each community to be compared. An area with a high

[40] According to the information provided in the SOMAH Data Use File (SOMAH Data Use Case_By Report Type_Final.xlsx).

[41] https://oehha.ca.gov/calenviroscreen

score is one that experiences a much higher pollution burden than areas with low scores. CalEnviroScreen ranks communities based on data that are available from state and Federal government sources.



Source: California Office of Environmental Health Hazard Assessment

CalEnviroScreen 3.0, initially released in January 2017 and updated in June 2018, provides a score for each census tract using 20 different indicators of pollution and population burden. This score is relative among the California census tracts and ranges from 0–100, with higher scores representing the more vulnerable populations. Disadvantaged communities (DACs) are one of the two eligibility criteria for the SOMAH Program and are defined as the top 25 percent scoring areas from CalEnviroScreen along with other areas with high amounts of pollution and low populations. The evaluation team downloaded CalEnviroScreen score and appended it to each SOMAH application by census tract in order to verify the property met the DAC definition as written in the legislation that created the SOMAH Program.

4.2 ANALYSIS OF SOMAH PROGRAM PARTICIPATION TO DATE

During Phase I, the evaluation team analyzed the available SOMAH Program participation data to independently assess and verify participation in the program to date. The sections below present the results of this analysis.

From July 1, 2019 through May 4, 2020, the SOMAH Program had received a total of 340 applications across all five IOUs. Of these submitted applications, 24 applications (7 percent) were removed from the analysis in this section as they have been cancelled (23 applications) or were found by the evaluation team to be duplicate applications (10 applications in total, of which nine have also been cancelled). The non-cancelled applications to date represent 81.6 MW_{AC} of future capacity (90.3 MW_{DC}), which is 27 percent of the overall program goal of 300 MW_{AC}. The total of the calculated SOMAH incentive for these 316

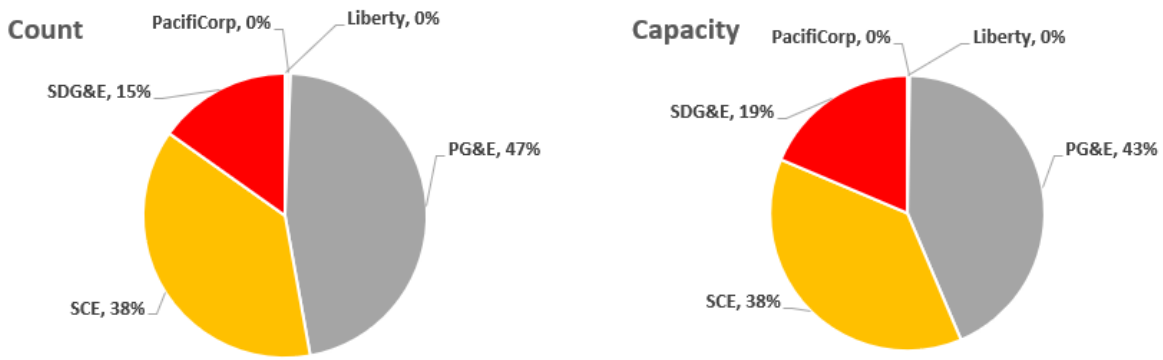
applications is $179,891,944.[42] Table 4-1 presents the number of non-cancelled SOMAH applications to date by IOU.

TABLE 4-1: SOMAH APPLICATIONS BY IOU[43]

IOU	Number of SOMAH Applications		PV System Capacity (kW_{AC})[44]		Average System Capacity (kW_{AC})
	#	%	#	%	
Liberty Utilities	1	0%	81	0%	81.1
PacifiCorp	1	0%	149	0%	148.6
Pacific Gas and Electric	147	47%	35,179	43%	239.3
Southern California Edison	119	38%	31,036	38%	260.8
San Diego Gas and Electric	48	15%	15,126	19%	315.1
Total	**316**	**100%**	**81,571**	**100%**	**258.1**

The number and capacity of current active SOMAH PV applications are shown in Figure 4-1 below by IOU. PG&E has received the largest share of SOMAH applications both in terms of count and capacity, followed by SCE and SDG&E. As of May 4, 2020, Liberty and PacifiCorp both had only received one application. These counts and capacities are somewhat proportional to the eligible SOMAH properties in each of these service territories.

FIGURE 4-1: SOMAH APPLICATIONS TO DATE, PROJECT COUNT AND CAPACITY BY IOU



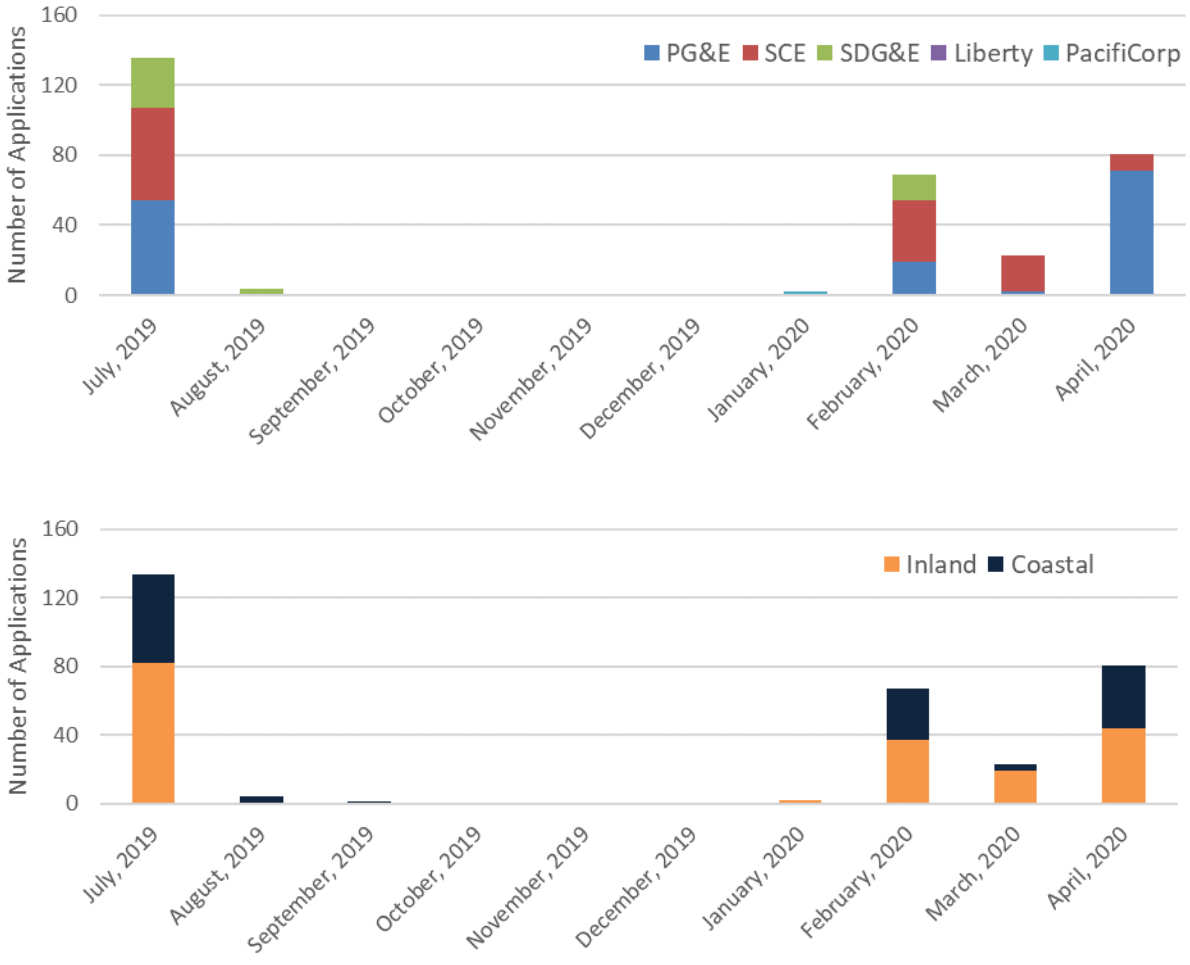
[42] To date only 37 of these 316 applications have had their Reservation Request Approved. The total reserved incentive for these 37 Application is $13,939,606.

[43] Includes waitlisted and suspended applications.

[44] The accuracy of this estimate has not been verified by the evaluation team. It is the capacity submitted by the applicant. In one case, the evaluation team found a note within the web portal that the system capacity was incorrect and needed to be fixed (it was sized to be 1 MW, which was significantly too big) but it has not yet been fixed in the tracking data.

Figure 4-2 shows SOMAH applications submitted over time by IOU and climate zone. For three of the five IOUs (PG&E, SCE, and SDG&E), the program exhausted its first-year funding on the day the program opened. At that time, prospective applicants were encouraged to apply to the waitlist to secure their position in line for future program funding. The SDG&E waitlist was closed indefinitely due to the high volume of applications on the waitlist (estimated to be approximately 2.5 years based on future program funding). In February 2020, SOMAH funding was renewed for SCE and SDG&E territories, and in April 2020 funding was renewed for PG&E territory. PG&E made the decision to release funding on a quarterly basis and Q1 2020 funds are currently available. While SDG&E funding was renewed, the program and waitlist continues to be closed due to the large number of existing applications.

FIGURE 4-2: NUMBER OF SOMAH APPLICATIONS SUBMITTED SINCE PROGRAM INCEPTION, BY IOU AND CLIMATE ZONE



4.2.1 Current Application Status

As discussed in Section 3.3.1 above, the SOMAH application process consists of a series of discrete steps that each application must go through to participate in the program and be eligible for the SOMAH incentive. The discrete application steps are the following:

- Upfront Technical Assistance Request (Track A only): Applicant must submit reservation request package within three months to continue to have incentive funds reserved for their project
- Reservation Request Package: Culminates in a Reservation Approval Notice
- Energy Efficiency Compliance Milestone: Must be submitted within 60 days of receiving the Reservation Approval Notice – culminates in an Energy Efficiency Compliance Notice
- Proof of Project Milestone: Must be submitted within 240 days of receiving the Reservation Approval Notice
- Incentive Claim Package: Submitted after the PV systems has been purchased, installed, and interconnected

As of early May 2020, only 37 of the 340 SOMAH applications (11 percent) received have had their Reservation Request approved and have received a Reservation Approval Notice. Of those 37, only two have completed the Energy Efficiency Compliance (EEC) Milestone step. Although the program has been operational for more than 10 months, no projects have progressed past the EEC step. Table 4-2 shows the number of applications in each of the SOMAH application steps as of the May 4, 2020 tracking database extract. It also shows the average, minimum, and maximum number of days it took for an application to have their Reservation Request Approved or to complete the EEC Milestone. This table also shows that the two applications that completed the EEC Milestone took an average of 103 days for the milestone to be completed after approval of their Reservation Request.

Twenty-eight applications have been suspended due to the applicant's participation in the MASH Program and an uncertainty if MASH and SOMAH incentives can be stacked. On December 16, 2019, the status of these applications was changed to "Suspended – Pending Energy Division Review". On June 5, 2020, the CPUC released Resolution E-5054. The Resolution directs the SOMAH PA to: 1) cancel the SOMAH applications that have already received a MASH incentive; and 2) notify the Applicants with active MASH applications that they will need to provide documentation indicating that their corresponding MASH application has been cancelled or withdrawn. Both activities need to be completed within 15 days of issuance of the final Resolution.

TABLE 4-2: CURRENT STATUS OF SOMAH APPLICATIONS (AS OF MAY 4 2020)

Current Application Step	Applications Currently in Step		Days since Reservation Request Submitted		
	#	%	Average	Min	Max
Upfront Technical Assistance Request (Track A only)	**1**	0%			
Pre-Reservation Request Approval	223	66%			
Reservation Request Approved	**28**	8%	224*	169	273
Pre-Energy Efficiency Compliance Milestone	7	2%			
Energy Efficiency Compliance Milestone	**2**	1%	267	262	272
- Time from Reservation Approved Notice			103	80	126
Proof of Project Milestone	**0**	0%			
Incentive Claim Package	**0**	0%			
MASH/SOMAH Stacking Suspension	28	8%			
Waitlist	27	8%			
Cancelled	24	7%	124	10	258
Total	**340**	**100%**			

* Inclusive of the nine applications that have moved passed this application step.

As part of the Phase I data review, the evaluation team pulled a random sample of 20 Reservation Request suspension notices from the application portal to better understand why two-thirds of the SOMAH applications are currently awaiting approval for their Reservation Request and why, to date, it has taken an average of 224 days from the time an application was submitted to when its Reservation Request was approved. Table 4-3 below provides a listing of the primary documents that are part of the Reservation Request Package. Most of the application suspensions reviewed had multiple issues and so the percentages in each row do not sum to 100 percent. As this table shows, across the random sample of applications selected for review, the majority had issues with six of the eight documents in the Reservation Request Package. The primary issues found in the suspension letters were related to:

- A signature issue on the submitted document: Signature issues ranged from the forms not being signed, being signed by the wrong individual, or not being a verifiable electronic signature,
- The document submitted: Often, applicants submitted the wrong form (usually a sample copy rather than the correct form generated through the application portal) or did not submit the form or document at all, or
- The document contained missing information or errors that need to be corrected.

The frequency with which some of these issues occurred, such as 80 percent of the applications reviewed submitted the wrong form for the Cover Sheet for Multifamily Low-Income (MF LI) Housing documentation, is an indication of the confusion on the part of the applicant and suggests that more

outreach could be done to clarify parts of the application process. Currently, there are no available fields in the program tracking data to capture the reason(s) for an application's suspension. This makes it difficult and time-consuming to identify the most frequent causes for suspensions and program delays. The evaluation team recommends researching methods to track this information so that problems with the application process can be more readily identified and thus addressed more quickly. In addition to issues with the documents shown below, the evaluation team also found that roughly one-quarter of the applications reviewed had issues with the information they entered directly into the tracking database fields.

TABLE 4-3: RESERVATION REQUEST APPLICATION SUSPENSION REASON FREQUENCY

Reservation Request Package Document	% with Issues	Suspension Reason					
		Not Signed	Signature Issue	Wrong Form	Form Missing	Missing Info	Contains Error
1. Reservation Request Form	**70%**	40%	25%	0%	0%	5%	15%
2. Affidavit Ensuring 100% Tenant Economic Benefit	**95%**	25%	20%	70%	0%	10%	15%
3. Letter of Authorization	**100%**	40%	30%	10%	5%	75%	5%
4. VNEM Allocation Form	**65%**	0%	0%	20%	0%	60%	15%
5. Cover Sheet for MF LI Housing Documentation	**100%**	25%	20%	80%	0%	50%	15%
6. Documentation of MF LI Housing	**30%**	5%	0%	5%	5%	15%	0%
7. Multiple Bid Form or Waiver	**95%**	25%	5%	80%	0%	5%	10%
8. ESA Program Referral List	**15%**	0%	0%	0%	0%	0%	15%

Since program inception, a total of 23 applications have been cancelled (7 percent of all applications submitted). While this rate of cancellation will most likely rise over time as applications move through the SOMAH application process, this rate is currently much lower than the cancellation rate reported for the MASH Program (57 percent).[45] The evaluation team believes there could be value in analyzing the primary reason(s) for the cancellation of a SOMAH application; however, since the tracking database lacks a field for cancellation reason this analysis cannot be readily completed as it would require reviewing every individual cancelled application in the portal to determine the reason for cancellation. The evaluation team's research into duplicate applications in the tracking database revealed nearly half of the "Cancelled" applications (nine out of the 23) were cancelled because the application was submitted

[45] This figure was taken from the Multifamily Affordable Solar Housing Semiannual Progress Report dated July 31, 2019. (https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy/Energy_Programs/Demand_Side_Management/Customer_Gen_and_Storage/SCE%20Semi-Annual%20MASH%20Progress%20Report%20July%202019.pdf) The data source is listed as PowerClerk and DGStats from 10/16/2018 – 6/30/2019.

multiple times. In these instances, the duplicate application had its status changed to "Cancelled". By removing the duplicates records, the application cancellation rate dropped to 4 percent.

As of the May 4, 2020, tracking database extract, a total of eight Track A applications had been submitted to the SOMAH Program. This data extract indicates six of these Track A applications have been cancelled, one was waitlisted and suspended, and only one has completed the Upfront Technical Assistance and received approval for program participation. Upon closer inspection of the Track A applications it was determined that two of these eight applications were in fact duplicates of another Track A application and so the actual number of Track A Applications to date was only six.

TABLE 4-4: DISPOSITION OF TRACK A APPLICATIONS

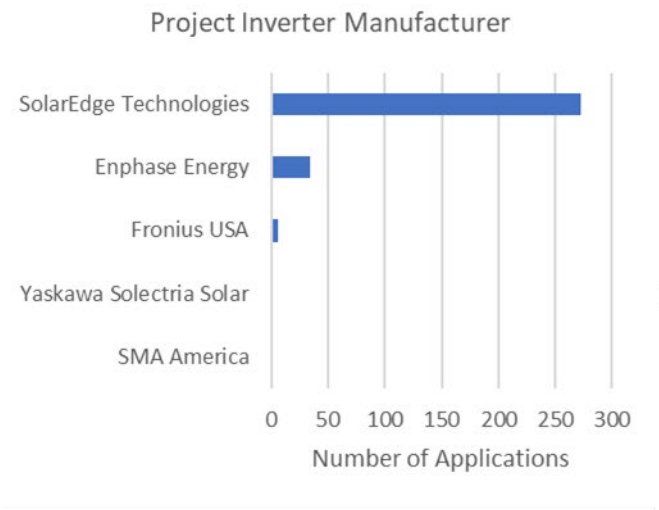
Application Number	Current Application Status	Closer Inspection Finding
PGE-SOMAH-00XXX	Waitlist: Suspended - Upfront Technical Assistance Request	Deadline passed for documentation so cancelled
PGE-SOMAH-00XXX	Cancelled	Duplicate of another Track A application
PGE-SOMAH-00XXX	Cancelled	Deadline passed for documentation so cancelled
PGE-SOMAH-00XXX	Cancelled	Duplicate of another Track A application
PGE-SOMAH-00XXX	Cancelled	Previously installed solar through MASH
SCE-SOMAH-00XXX	Cancelled	Deadline passed for documentation so cancelled
SCE-SOMAH-00XXX	Cancelled	Deadline passed for documentation so cancelled
SCE-SOMAH-00XXX	Upfront Technical Assistance Approved	Granted extension to submit Reservation Request Package due to COVID-19

4.2.2 Equipment Characteristics and Installers

During the application process, applicants are required to enter the manufacturer and model for their PV module and inverter as part of their Reservation Request Package. This information can be updated during the Proof of Project Milestone step if what was originally specified changed during the application process. The SOMAH module and inverter manufacturers by count are shown in Figure 4-3 below. As this figure shows, Trina Solar modules and SolarEdge Technologies inverters are proposed for the largest share of SOMAH projects by count.

The top solar contracting company by count was Sunrun, Inc., who was the solar contracting company for approximately one-third of the applications, followed closely by Everyday Energy. Post-SOMAH launch, Sunrun and Everyday Energy merged under the Sunrun, Inc. name so now Sunrun is the contractor on 63 percent of program applications, to date. The top four contractors accounted for 91 percent of all application contractors. The distribution of solar contracting companies across the submitted applications is shown in Figure 4-4.

FIGURE 4-3: DISTRIBUTION OF PV MODULE AND INVERTER MANUFACTURERS IN THE APPLICANT POPULATION



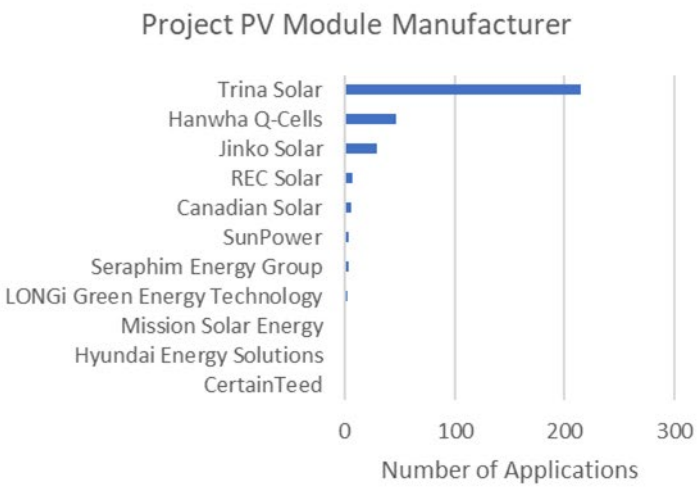
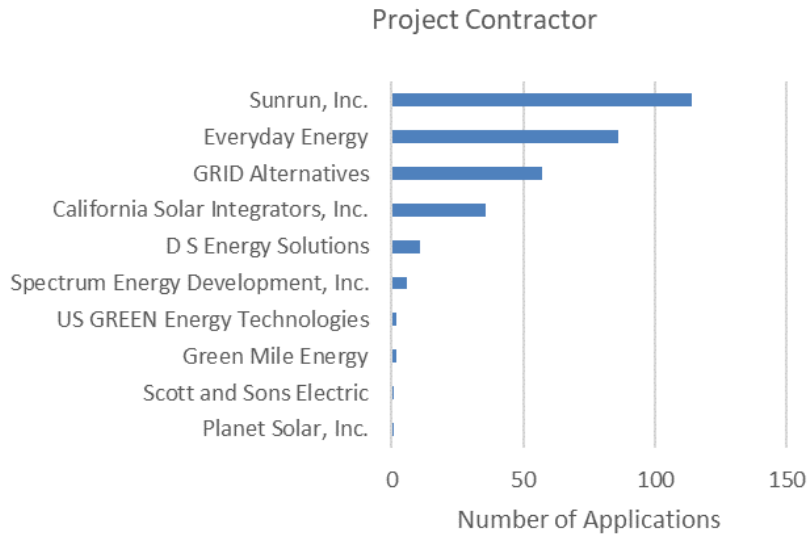


FIGURE 4-4: DISTRIBUTION OF SOLAR CONTRACTING COMPANIES[46] [47]



[46] As noted above, post-SOMAH launch Sunrun, Inc and Everyday Energy merged under the Sunrun, Inc. name. The program tracking data list the contractors by their name at the time the application was submitted.

[47] GRID Alternatives has distinct business units that implement solar programs and install solar systems. To ensure no conflict of interest within the SOMAH Program, a firewall was implemented at GRID between the SOMAH PA team and GRID's installation teams, and operations of the SOMAH PA team are governed by a Conflict of Interest policy that was approved by the Commission in Resolution E-4987.

Contractors

On May 5, 2020, the evaluation team received a file from CSE containing a listing of all solar contractors that were currently eligible to participate in the SOMAH Program. This file contained a total of 114 unique contractors and for the majority (roughly 75 percent) of the contractors, the file also included self-reported estimates of the total number of solar installations their company had completed (installations were provided in the following ranges: 25 and under, 26-99, 100-249, 250+, N/A[48]), the number of employees the company had (number of employees were provided in the following ranges: 0-25, 26-50, 51-75, 76-99, 100+, N/A), if they are a minority-owned or women-owned business, and what languages are spoken.[49] This file was compared with the SOMAH application dataset (including cancelled applications) to assess how representative the applications received to date reflect the SOMAH-eligible contractor pool. As shown in the tables below, the contractors for the submitted applications to date are not representative of the pool of eligible SOMAH contractors in the following ways:

- Of the 114 eligible contractors, only 10 have submitted an application to the program. The SOMAH PA has received feedback from contractors that project financing and access to capital is a barrier to participation for smaller contractors and property owners who are unable to float the cost of the system until the post-incentive claim is received, and that this may account in part for the number of eligible contractors who have not submitted applications.
- The majority of SOMAH Program applications submitted have come from contractors with a lot of solar installation experience (93 percent of applicant contractors have installed 100 or more solar systems, compared with only 25 percent of the contractor pool that have installed 100 or more solar systems). Conversely, 25 percent of the pool of eligible contractors have very little solar installation experience; only one application has come from this pool of contractors.
- Similarly, the majority of SOMAH applications submitted have come from large contractors who employee 250 or more people (82 percent of all applications), but these large contractors only make up four percent of the eligible contractor pool. Forty-six percent of the pool of eligible contractors are small, employing 25 or fewer employees; only seven applications have come from these small contractors (2 percent of all applications).

[48] These contractor demographic/company questions were phased in over time and so were not collected from all contractors. CSE has attempted to collect this information from contractors who took the eligibility training prior to the collection of this data; however, they have received minimal additional information and so roughly one-quarter of contractors are missing (N/A).

[49] We are not currently reporting on languages offered as this field is missing for 89 percent of the eligible contractors at this time.

- Twenty-one percent of SOMAH-eligible contractors reported they were a minority-owned business (24 contractors in total); only three applications have been received from one of these contractors (1 percent).
- Eleven percent of SOMAH eligible contractors reported they are a women-owned business (12 contractors in total); no applications have been received from a women-owned contractor.

TABLE 4-5: SOLAR INSTALLATION EXPERIENCE, APPLICATIONS VS. SOMAH ELIGIBLE CONTRACTORS

Number of Solar Installations	SOMAH Applications to Date		Eligible SOMAH Contractors	
	#	%	#	%
0 – 25	1	0%	29	25%
26 – 50	17	5%	14	12%
51 – 75	0	0%	7	6%
76 – 99	2	1%	5	4%
100 or more	311	93%	29	25%
N/A	2	1%	30	26%
Total	**333**	**100%**	**114**	**100%**

TABLE 4-6: NUMBER OF CONTRACTOR EMPLOYEES, APPLICATIONS VS. SOMAH ELIGIBLE CONTRACTORS

Number of Contractor Employees	SOMAH Applications to Date		Eligible SOMAH Contractors	
	#	%	#	%
25 or less	7	2%	52	46%
26 – 99	52	16%	22	19%
100 – 249	0	0%	5	4%
250 or more	272	82%	5	4%
N/A	2	1%	30	26%
Total	**333**	**100%**	**114**	**100%**

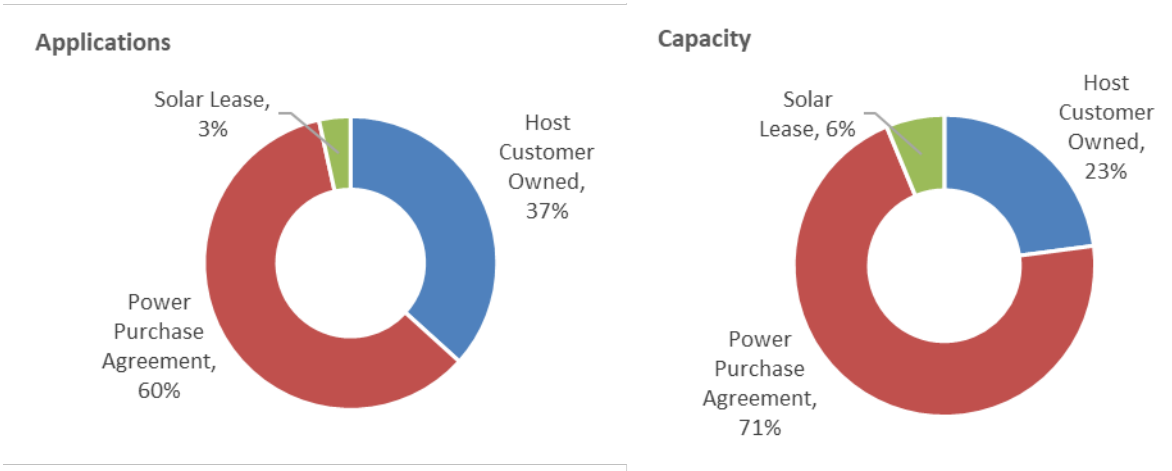
SOMAH Systems Paired with Energy Storage

The tracking database contains a field indicating if an applicant is proposing to pair a storage system with their solar system. This variable is entered as part of the Reservation Request Package and can be updated during of the Proof of Project Milestone step. This variable is not a required field and thus we found it was blank for roughly 80 percent of current applications. Sixty-one percent of the applications who completed this field (12 percent of all applications) indicated that the solar system would be paired with energy storage. PG&E had the highest rate of applicants who reported solar would be paired with storage (18 percent), followed by SDG&E (10 percent), and SCE (6 percent). No additional information regarding the storage system is saved within the tracking data.

4.2.3 System Ownership, Costs, and Federal Tax Credits

In the first year of the program, nearly two-thirds of SOMAH projects were financed using a third-party ownership model as opposed to ownership of the system by the Host Customer.[50] The majority of third-party owned systems utilized a Power Purchase Agreement (PPA) as opposed to a solar lease. The tables below show the distribution of the quantity of SOMAH applications and the solar PV capacity by system ownership type.

FIGURE 4-5: NUMBER AND CAPACITY OF SOMAH APPLICATIONS, BY SYSTEM OWNERSHIP TYPE



SOMAH participants who elect to purchase their solar PV system are eligible for the Federal Investment Tax Credit (ITC) or the Low-Income Housing Tax Credit (LIHTC). The ITC is a one-time credit on Federal taxes and can be used to offset a portion of the total PV system cost. Because it is a tax credit, it cannot be claimed by non-profit organizations. As a result, it is common for non-profit organizations to utilize a PPA or Solar Lease ownership model so the ITC can be utilized by the third-party owner to help offset a portion of the system cost.[51] It is important to note that projects that elect to utilize a PPA ownership type do not impact the building tenants costs for energy as they are not directly linked to the PPA. Under a SOMAH PPA, the property owner (host customer) is responsible for paying the per kilowatt hour charges to the system owner. Additionally, program rules forbid property owners from increasing tenant bills due to costs they may incur due to the solar system being installed.

The ITC was 30 percent for systems installed in 2019 and declines to 26 percent in 2020 and 22 percent in 2021. The LIHTC is an indirect Federal subsidy used to finance the construction and/or rehabilitation of

[50] According to data in DG Stats, 69 percent of MASH 1.0 projects and 48 percent of MASH 2.0 projects were third-party owned.

[51] Other types of organizations besides non-profit organizations have also applied using PPA ownership model as this is more of a "turnkey" solution offered by project developers.

low-income affordable rental housing. These tax credits are awarded to affordable housing developers and then typically sold by the developers to private investors in order to obtain funding to finance the project. Once the project is placed in service (i.e., rentable) the investors can claim the LIHTC over a 10-year period.

SOMAH incentive rates ($ per AC Watt) vary based on whether the applicant is planning to claim the Federal ITC or receives LIHTCs. As shown in Table 4-7, SOMAH incentives are reduced by 30 percent if a project takes advantage of one of these tax credits and by 50 percent if it takes advantage of both of the tax credits. During Phase II of this study, the evaluation team will work with the PA to determine a process by which the program can verify that ITC and LIHTC tax credits are not being received by SOMAH Program participants.

TABLE 4-7: CURRENT SOMAH INCENTIVE RATES

ITC Tax Credit	LIHTC Tax Credit	Tenant $ per AC Watt	Common Area $ per AC Watt
No	No	$3.20	$1.10
Yes	No	$2.25	$0.80
No	Yes	$2.25	$0.80
Yes	Yes	$1.60	$0.60

As shown in Table 4-8, to date, roughly two-thirds of the applications submitted to SOMAH have indicated that they planned to claim the Federal ITC for the PV system, one percent of applications indicated the property received LIHTCs, and the remaining one-third indicated that neither the ITC or LIHTC would be received for this property. The high percentage of applicants reporting that they are not claiming either of the tax credits is a potential concern both from the perspective of unclaimed federal tax incentives means less dollars available for other SOMAH projects and SOMAH overpaying incentives for those who eventually take the ITC but did not initially report it. Reasons why applicants are not taking either of these tax credits and methods to verify self-reported tax credit claims will be researched further in Phase II of this study. The Phase II research will also explore whether outreach to applicant's is needed to educate them about the Federal credits and the benefits of claiming them.

TABLE 4-8: SHARE OF SYSTEMS RECEIVING FEDERAL ITC OR LIHTC TAX CREDITS

Tax Credits	Percent of Projects Receiving
Investment Tax Credit (ITC)	63%
Low Income Housing Tax Credit (LIHTC)	1%
No Tax Credits	36%

Tenant versus Common Area PV Allocation

The SOMAH Program currently requires that at least 51 percent of each project's electrical output directly offset the tenant's load. As Table 4-9 shows, on average across the SOMAH applications received to date, the tenant allocation (both on an application and system capacity weighted basis) has averaged 90 percent. This rate is significantly higher than the tenant allocations seen in the MASH 1.0 and MASH 2.0 programs (60 percent and 45 percent of the installed capacity was allocated to tenant areas, respectively). The range of PV generation benefits being allocated to the tenants has ranged from the allowable minimum of 51 percent to the maximum of 100 percent. As shown in the table below, the incentive rates per AC Watt offsetting tenant usage is roughly three times larger than if the PV is allocated to a common area.

TABLE 4-9: ALLOCATION OF PV GENERATION IN TENANT VS COMMON AREAS

Area	Average Application Allocation	Minimum Allocation	Maximum Allocation	PV Capacity Weighted Allocation
Tenant	90%	51%	100%	89%
Common Area	10%	0%	49%	11%
MASH 1.0 Tenant Area	47%	NA	NA	60%
MASH 2.0 Tenant Area	41%	NA	NA	45%

Solar System Capacities, Costs and Incentives

The evaluation team analyzed the solar system capacities (CEC PTC kW), total project costs, and SOMAH incentives across the project applications that have been submitted to date. Attention was paid to their correlation with their purchase arrangement (Power Purchase Agreement, Solar Lease, or Host Customer Owned). As shown in Figure 4-6, most of the Host Customer Owned systems were smaller systems than those that were purchased via a Power Purchase Agreement.

FIGURE 4-6: HISTOGRAM OF SOMAH PROJECT CAPACITY: PPA VERSUS HOST CUSTOMER OWNED

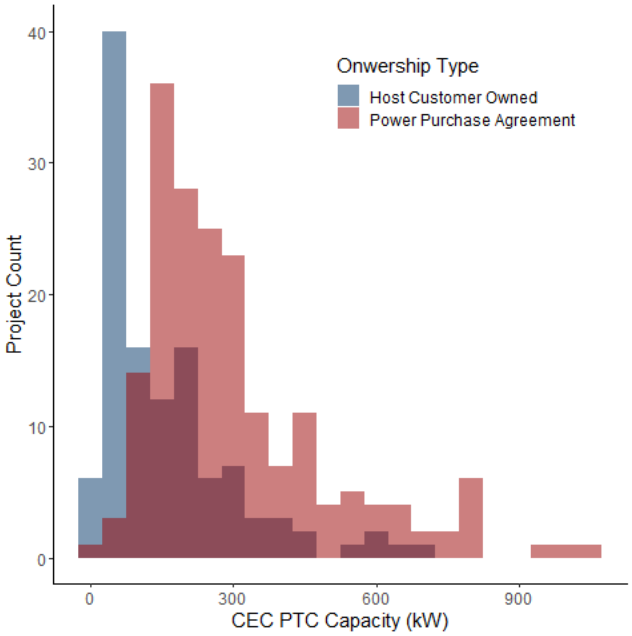


Figure 4-7 below shows the distribution of total system costs per kW across the range of system capacities by ownership type. As this figure shows, the systems purchased via a PPA have a higher cost per kW across the range of system sizes. There appears to be little correlation between the cost per kW of the system and systems size (i.e., larger projects do not seem to bring down the cost per kW due to an economy of scale). It is important to note the cost data being analyzed in this section are self-reported and collected as a manually entered field in the application portal and thus has not been verified. It is also an estimate of the system cost at this point as no systems have been installed. System costs are verified by the PA during the Proof of Project Milestone step at which time they compare the reported costs to the executed contract.

FIGURE 4-7: SYSTEM COST PER KW BY SOMAH SYSTEM CAPACITY

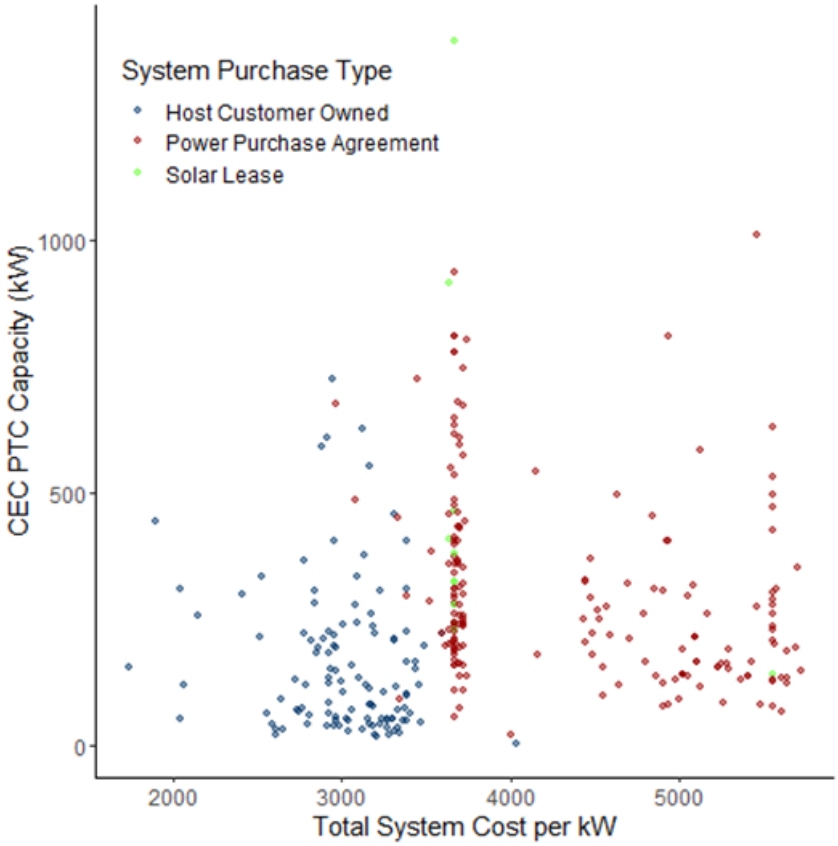


Figure 4-8 and Figure 4-9 below show the distribution of project applications to date across the total system costs per Watt (without incentives) and the incentive amount per Watt. As these figures show, the total system cost per Watt ranges from around $2 to $6, but for most applications the total cost per Watt is around $3. Similarly, the inventive amount per Watt ranges from around $1.50 to $3.00; for the majority of applications it is around $2. Table 4-10 and Table 4-11 below provide the average costs and incentives by system ownership type.

FIGURE 4-8: DISTRIBUTION OF TOTAL SYSTEM COSTS PER KW WITHOUT SOMAH INCENTIVE, OVERALL AND BY OWNERSHIP TYPE

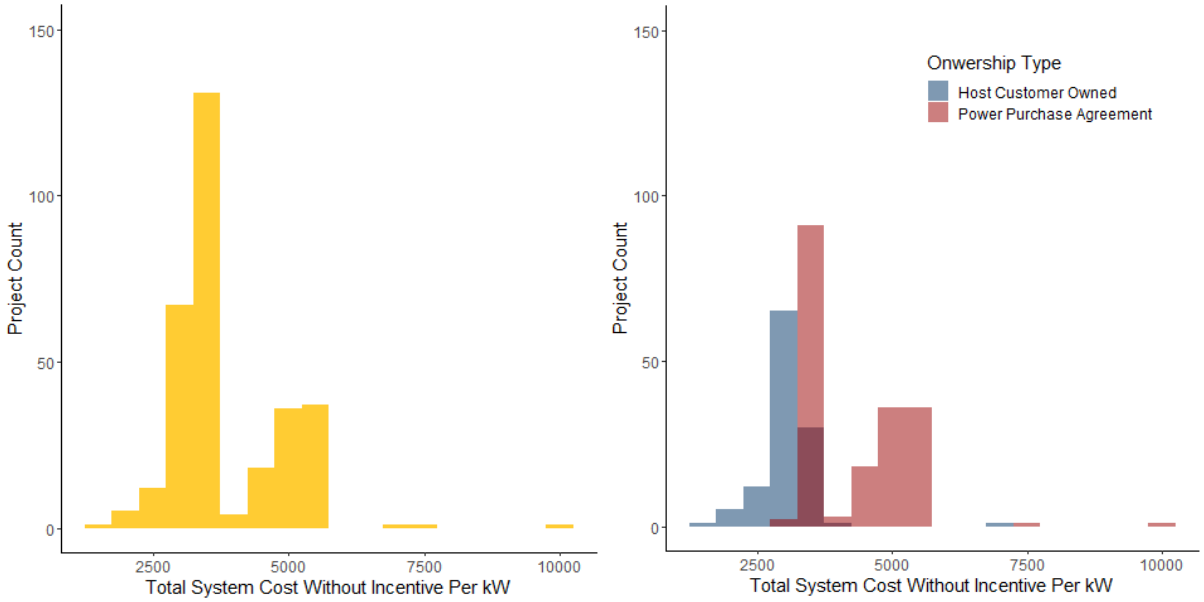


FIGURE 4-9: DISTRIBUTION OF SOMAH INCENTIVE PER KW, OVERALL AND BY OWNERSHIP TYPE

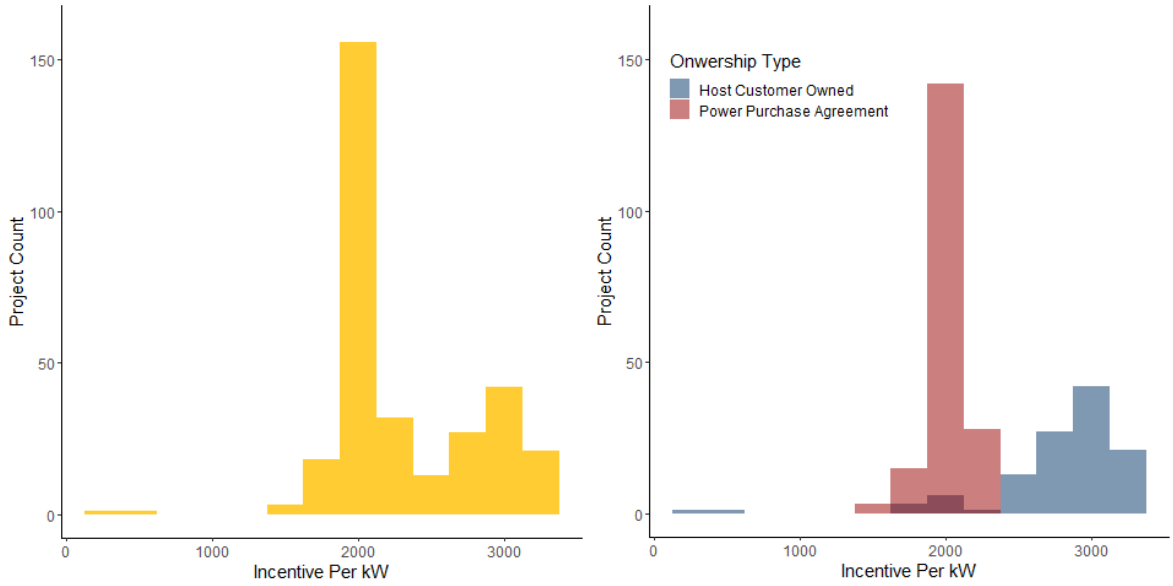


TABLE 4-10: SYSTEM COSTS AND INCENTIVES PER WATT BY OWNERSHIP TYPE

	Host Customer Owned	Power Purchase Agreement	Solar Lease
Number of Applications	115	188	11
Average System Cost per Watt	$2.98	$4.27	$3.71
Average System Incentive per Watt	$2.82	$2.04	$2.03
Average Percent of System Allocated to Tenants	94%	87%	88%
Average Percent of Applications Receiving a Tax Credit	3%	100%	100%

As the table above shows, the incentive per Watt is significantly higher for Host Customer Owned systems than for PPA or Solar Lease systems due to the higher percentage of these systems' capacity being allocated to tenant versus common areas, and the low percentage of Host Customer Owned systems reporting to receive Federal ITC or LIHTC tax credits. As shown earlier, the SOMAH incentives per Watt are higher for systems benefiting tenants and for projects that report they are not receiving a tax credit. A breakdown of the overall system costs is shown below for Host Customer Owned systems (these data are not available for PPA or Solar Leases as the data are only submitted to the application portal in aggregate). It is imporant to note the total costs of the Host Customer Owned systems and the PPA or Solar Lease systems are not always comparable due to what "system" costs are included in the total system costs for PPA or Leases. Including additional costs, such as system design or feasibility study costs, is often allowable and increases the total cost of the system.This in turn increases the ITC, which is a proportion of the total cost of the system.

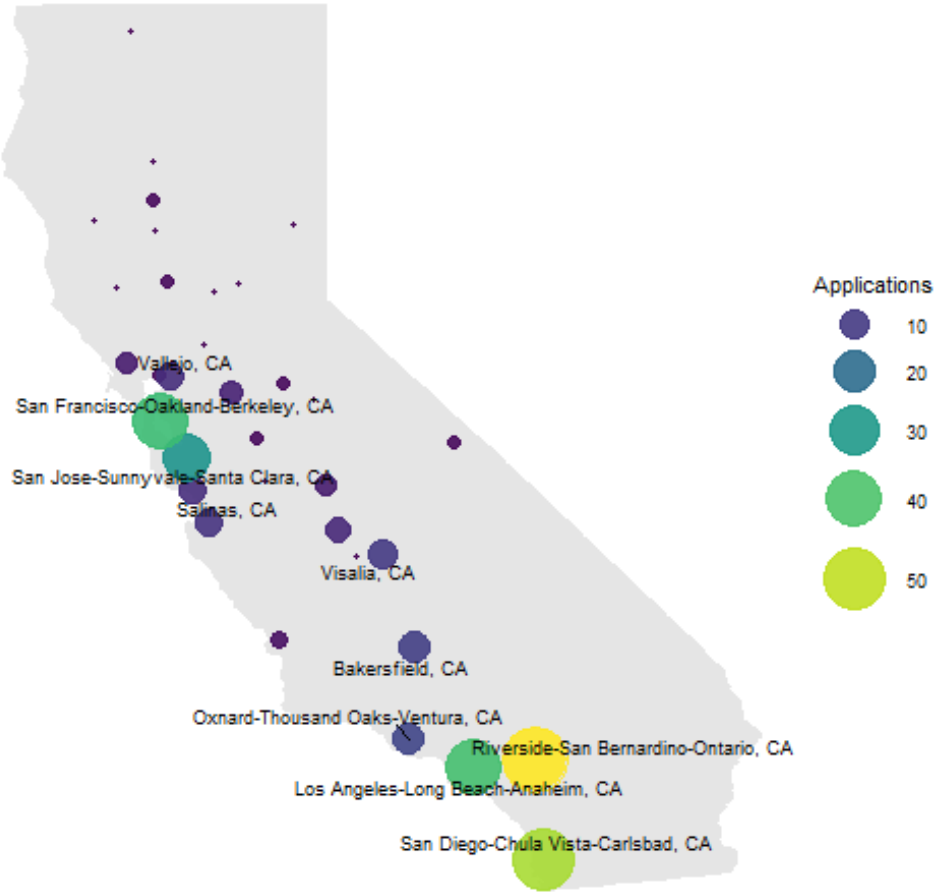
TABLE 4-11: SYSTEM COMPONENT COSTS BY OWNERSHIP TYPE

	Host Customer Owned	Power Purchase Agreement	Solar Lease
Number of Applications	115	188	11
Average Project Cost	$478,377	$1,285,381	$1,720,159
Average PV Module Cost	$123,275	NA	NA
Average Inverter Cost	$75,822	NA	NA
Average PMRS Cost	$22,488	NA	NA
Average Carport Cost	$153,327	NA	NA
Average Permitting Fees	$7,959	NA	NA
Average Balance of System Costs	$478,377	$1,285,381	$1,720,159

4.2.4 Property Demographic Trends

The demographic trends in SOMAH Program applications described in the following narrative are based on the American Community Survey (ACS) 2017 five-year rolling survey.[52] These data were merged to program tracking data by census tract. Figure 4-10 below shows a map of California with the scale of SOMAH applications aggregated to the MSA[53] level. The color and size of the scale represents the number of SOMAH applications in that MSA. The MSAs labeled in the map represent the 10 MSAs with the largest volume of applications.

FIGURE 4-10: SOMAH APPLICATIONS BY MSA



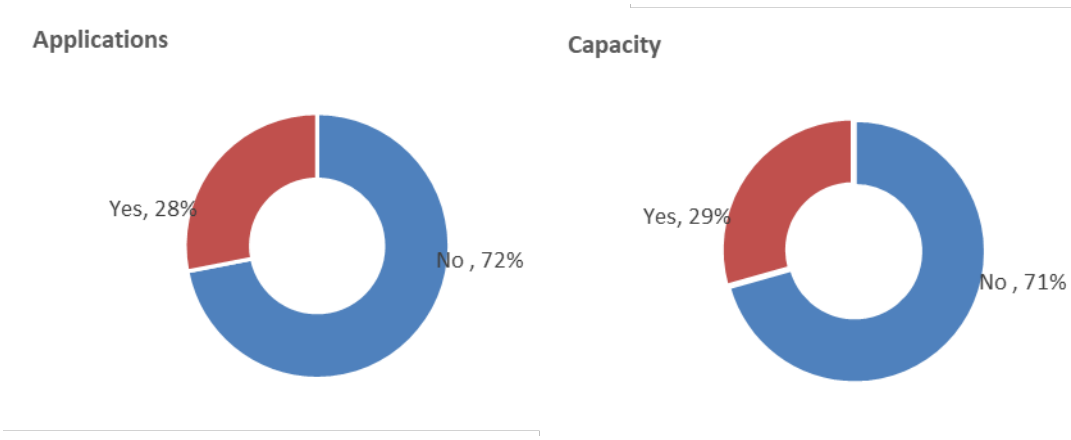
[52] https://www.census.gov/programs-surveys/acs
https://www.census.gov/programs-surveys/acs/data/summary-file.html

[53] A Metropolitan Statistical Area (MSA) consists of one or more counties that contain a city of 50,000 or more inhabitants or contain a Census Bureau-defined urbanized area and have a total population of at least 100,000.

Disadvantaged Communities (DACs)

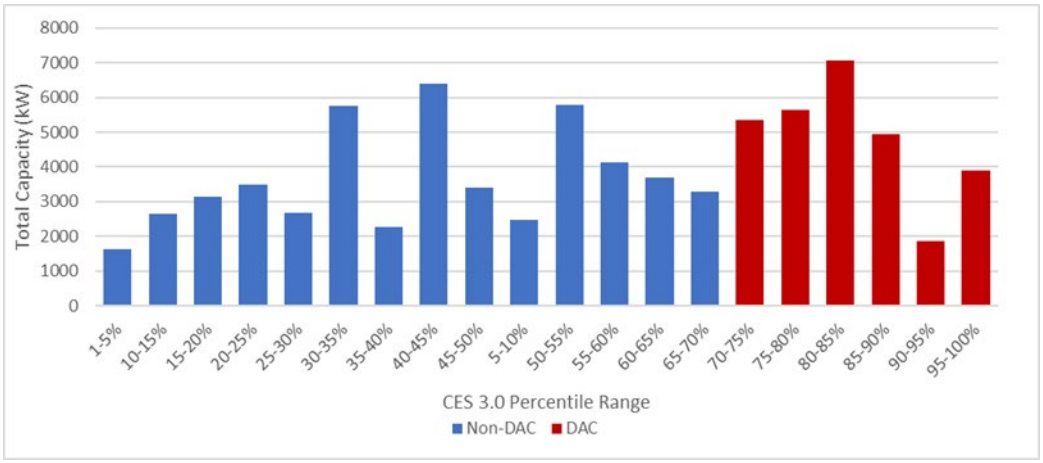
SOMAH applications in DACs, as defined by SB 535 (updated 2018), are shown in Figure 4-11 below. Roughly 28 percent of the current SOMAH applications by count and 29 percent by capacity are located within in DACs. This proportion is only slightly higher than the percentage of California's population that falls into the DAC designation (25 percent).

FIGURE 4-11: DISTRIBUTION OF SOMAH PROJECTS AND SYSTEM CAPACITY IN DISADVANTAGED COMMUNITIES



The exhibit below shows the distribution of SOMAH applications across CalEnviroScreen score buckets. As this exhibit shows, the SOMAH applications (weighted by PV System Capacity) that have been submitted to date are spread across the entire range of CalEnviroScreen buckets, with 71 percent of applications having a CalEnviroScreen score that is below the DAC definition (top 25 percentile of CalEnviroScreen scores) indicating they are not located in a DAC.

FIGURE 4-12: SOLAR CAPACITY OF APPLICATIONS IN PERCENTILE BINS OF CALENVIROSCREEN SCORE



For a property to be eligible for SOMAH, the project must satisfy one of the following two criteria:

- Eighty percent of property residents must have incomes at or below 60 percent of the Area Median Income (AMI) as determined by the Department of Housing and Community Development (HCD) or,
- The property must be located in a DAC as defined by CalEPA pursuant to Health and Safety Code Section 39711. For the SOMAH Program, this is defined as DACs that score in the top 25 percent of census tracts statewide in the CalEnviroScreen. It also includes the 22 census tracts that are in the highest five percent of the CalEnviroScreen's Pollution Burden.[54]

The evaluation team merged the CalEnviroScreen score to the program tracking data by census track to verify property eligibility. As shown in Table 4-12 below, a small number of applicants that claimed to be located within a DAC on their application did not fall into a DAC census tract based on our verification. Conversely, we found nearly 8 percent of applicant properties were in a DAC although they did not claim to be on their application. In Phase II of this study, the evaluation team will work with the SOMAH PA to review their verification of DAC status to ensure it is being determined and verified appropriately. SOMAH project eligibility is one of the charts tracked on the DG Stats website and, based on the evaluation team's matching, appears to be significantly under-counting SOMAH properties that are in DACs (the chart on DG Stats shows 22 percent in DACs versus the team's estimate of 28 percent).

TABLE 4-12: MISALIGNMENT OF SOMAH ELIGIBILITY AND DAC STATUS

DG Stats Property Eligibility	Census Tract is a DAC?	Share of Applications
80% of property residents have incomes at or below 60% of the area median income as determined by the Department of Housing and Community Development	No	70%
	Yes	7.7%
Both A and B	No	1.6%
	Yes	18%
The property is located in a disadvantaged community as identified by the California Environmental Protection Agency.	No	0.3%
	Yes	2.0%

Size of Applicant Properties

In total, across all SOMAH applications submitted to date, the program's potential reach is more than 26,000 individual tenant units. The average SOMAH property has 83 units but ranges from a minimum of

[54] There are currently more than 22 census tracts that fall into the highest five percent of the CalEnviroScreen's Pollution Burden. In Phase II of this study the evaluation team will further investigate how these 22 additional census tracts are determined.

6 units in one Host Customer Owned project to a maximum of 344 units in a Solar Lease property. The average Solar Capacity installed (CEC PTC Rating) per tenant unit ranged from 2.1 kW for Host Customer Owned systems to 3.9 kW for Solar Leased systems (the average was 3.1 kW). The program tracking data currently does not have the square footage of the tenant units and so it is difficult to draw any conclusions about this variation in system size per unit.

TABLE 4-13: TENANT UNITS PER PROPERTY AND AVERAGE INSTALLED CAPACITY ACROSS OWNERSHIP TYPES

	Host Customer Owned	Power Purchase Agreement	Solar Lease	Total
Number of Applications	115	189	11	315
Number of Tenant Units	8,829	15,917	1,322	26,068
Average Number of Tenant Units per Application	77	84	120	83
Minimum Number of Tenant Units per Application	6	11	56	6
Maximum Number of Tenant Units per Application	318	341	344	344
Average Solar Capacity (CEC) per Tenant Unit	2.1	3.6	3.9	3.1

Applicant Property Ownership

Research completed by the evaluation team found that at this time more than half of program applications were submitted by Host Customers who own or manage a portfolio of low-income properties. As shown in Table 4-14 below, 54 percent of SOMAH Program applications were submitted by eight unique Host Customers, who each submitted 10 or more applications, and only 6 percent of applications were submitted by a Host Customer who had submitted a single application to the program. This shows the dominance of properties belonging to a larger owner portfolio currently in the program.

TABLE 4-14: DISTRIBUTION OF HOST CUSTOMERS AND APPLICATIONS BY PROLIFICNESS OF APPLICANT

Number of Applications Submitted by Applicant	Unique Host Customers		Total Applications Submitted	
1	20	33%	20	6%
2 – 9	32	53%	124	39%
10 or more	8	13%	172	54%
Total	60	100%	316	100%

The tracking data currently contains a field that indicates if a larger developer parent company owns the property for which an application has been submitted (the field is called “Umbrella Company”). At this time, the “Umbrella Company” field is sparsely populated as it was added after the program launch;

therefore, it is blank for early applicants who have not yet updated it. The evaluation team performed manual reviews based on the property names and Host Customer contact names (these are most often the same for projects all belonging to a larger developer company). Table 4-15 below shows that a larger Umbrella Company was identified for 61 percent of the applications submitted. National CORE, a non-profit affordable housing developer, submitted the largest share of applications to date (37 applications, 12 percent of applications submitted to date).

TABLE 4-15: DISTRIBUTION OF APPLICATIONS ACROSS UMBRELLA COMPANIES

Umbrella Company	Applications Submitted	Percentage of Applications Submitted
National CORE	37	12%
MidPen Housing	27	9%
Unknown A	26	8%
BRIDGE Housing	26	8%
ROEM Corporation	18	6%
Affirmed Housing	16	5%
Unknown B	12	4%
RHF Housing	10	3%
Eden Housing	7	2%
Self-Help Enterprises	7	2%
LINC	6	2%
None (1-9 applications)	124	39%
Total	316	100%

5 PROGRAM ACTIVITY EFFORTS TO DATE

On December 14, 2017, the CPUC issued Decision D.17-12-022, which created the SOMAH Program and established program goals and eligibility requirements. The program officially launched in July 2019 and by the end of 2019, 340 applications had been submitted, with applicants from all five SOMAH-eligible IOU territories. Since the SOMAH PA was selected in March 2018, it has been developing and conducting ongoing administrative and ME&O activities, which are detailed in this section.

5.1 ADMINISTRATION ACTIVITIES

In addition to developing and maintaining the application database and processing and reviewing applications submitted to the program to date, the SOMAH PA has developed an Online Bidding Tool that allows property owners to find eligible contractors and request bids that provide owners with a like-for-like comparison between bids. The SOMAH PA has also provided weekly updates of the SOMAH Working Data Set, which is publicly available on the California Distributed Generation Statistics website.[55]

5.2 ME&O ACTIVITIES

The SOMAH PA has conducted a range of marketing efforts to target various stakeholders and program stages. These are briefly described below.

Website and Content Development: The SOMAH PA created and maintains a comprehensive program website with modules for property owners, tenants, contractors, and job seekers; a web-based program handbook; tenant-facing materials; program-related toolkits for contractors; an application guide; program reports; and a Solar Sizing Tool. The website has accumulated a total of 642 email subscribers and an average of 693 unique users per month, enabling the SOMAH PA to provide important email updates and event information to stakeholders.[56]

Engaging Property Owners: The SOMAH PA has engaged property owners in marketing activities, including outreach at conferences, webinars, and in-person interactions both one-on-one and at affordable housing conferences in partnership with CBOs. The SOMAH PA collaborates with CBO partners to conduct outreach to owners of small or rural properties, who are otherwise less likely to participate. The SOMAH PA also works collaboratively with other non-profits, affordable housing associations, CCAs,

[55] https://www.californiadgstats.ca.gov/downloads/#_somah

[56] Semiannual Progress Report: July 1, 2019 – December 31, 2019. Section 3.3.1 Local Hiring and Job Training. https://www.californiadgstats.ca.gov/static/documents/somah/SOMAH_SemiAnnual_Progress_Report_January2020.pdf.

and IOUs to co-market the program with related programs and outreach efforts and plans to expand and increase participation.

Direct Tenant Outreach: Direct tenant outreach will not be conducted until projects are in progress. To prepare for this, the SOMAH PA subcontracted with five CBOs to add capacity and support in targeting outreach to tenants in underserved communities.[57] The SOMAH PA collaborated with these CBOs and IOU representatives to create tenant engagement materials relating to SOMAH's benefits and to provide information on renewable energy, job training, and energy efficiency programs in California more broadly.

5.3 WORKFORCE DEVELOPMENT

Collaboration with JTOs: The SOMAH PA has focused on engaging JTOs, in particular those operating in DACs and who work with underserved populations, as the primary means of promoting the SOMAH Program to eligible workers. To date, the SOMAH PA has confirmed the eligibility of at least 60 JTOs and continues to vet approximately 300 more.

Job Training Portal: To support these efforts, the SOMAH PA created a Job Training Portal where job trainees can apply for jobs and contractors can find eligible trainees to fulfill program training requirements. Further, the program has supported SOMAH contractors to meet the program's job trainee hiring requirements, primarily through the portal, which can be accessed by trainees and contractors. As of December 2019, 138 job trainees had registered on the Job Training Portal.

Contractor Eligibility Training: The SOMAH PA conducts Contractor Eligibility Training, qualifying them to submit Track B applications and bid on Track A jobs. In 2019, more than 220 licensed contractors completed training. Additionally, 138 job trainees were registered on the Job Training Portal. In May 2020, the PA provided a file to the evaluation team containing 114 unique contractors who were currently eligible to participate in the SOMAH Program.

Direct Workforce Outreach: Additional workforce development efforts comprise participating in solar job fairs, leading webinars, and outreach communications and site visits with JTOs.

5.4 TECHNICAL ASSISTANCE

Because most applications submitted at the SOMAH Program's launch were Track B, most of the work conducted to this end has taken the form of preparation and capacity-building activities to serve Track A

[57] The CBOs are Asian Pacific Environmental Network (APEN); California Environmental Justice Alliance (CEJA); Communities for a Better Environment (CBE); Environmental Health Coalition (EHC); and Rising Sun Center for Opportunity.

applicants in the future. These activities have included process and database development, software configuration and template creation for host customer technical assistance reports, and coordination with related programs for leveraging energy efficiency and energy storage resources and incentives. Additionally, the PA has developed a detailed process flow to create a seamless experience for both upfront (Track A) and standard (Track A or B) technical assistance requests.

5.5 TOTAL PROGRAM EXPENDITURE TO DATE

SOMAH has an annual budget of up to $100 million annually. The SOMAH PA compiles and submits a Semi-annual Expense Report that tracks expenditures by category, including program incentives and administration expenses for the SOMAH PA, CPUC Energy Division, and the IOUs. The SOMAH PA submits quarterly invoices to SCE for payment.[58]

The following table shows the total expenditures through December 31, 2019.[59]

TABLE 5-1: TOTAL PROGRAM EXPENDITURES FOR 2018 AND 2019

Category	2018	2019	Total
SOMAH Program Administration	$1,896,345	$3,361,236	$5,257,581
SOMAH Marketing, Education, & Outreach (ME&O)	$412,041	$1,681,468	$2,093,509
SOMAH Workforce Development	$22,049	$282,027	$304,077
SOMAH Technical Assistance	-	$232,941	$232,941
SOMAH California Public Utilities Commission (CPUC) Expenditures*	-	-	-
Investor Owned Utility (IOU) Expenses	-	$1,423,525	$1,423,525
Total Program Admin Expenditures	**$2,330,436**	**$6,981,197**	**$9,331,633**

* CPUC expenses are still pending.

[58] A single invoice is submitted by CSE on behalf of all four organizations that make up the PA.

[59] Semi-annual Expense Report: July 1, 2019 – December 31, 2019. https://www.californiadgstats.ca.gov/static/documents/somah/SOMAH_SemiAnnual_Progress_Report_January2020.pdf

6 SOMAH PROGRAM THEORY AND LOGIC MODEL

The evaluation team created a program theory and logic model (PTLM) as the primary activity of the Phase I evaluation. As a new program, the goals of the SOMAH PTLM are to (1) document the market objectives of the CPUC in offering the SOMAH Program, (2) establish how the program design and operations aim to achieve these objectives, and (3) develop evaluation metrics to measure the success of the program against the stated objectives of the CPUC. As a model, the PTLM serves as a distillation of the core elements of the SOMAH Program's efforts and is not meant to provide an exhaustive program model.

6.1 THE MODEL

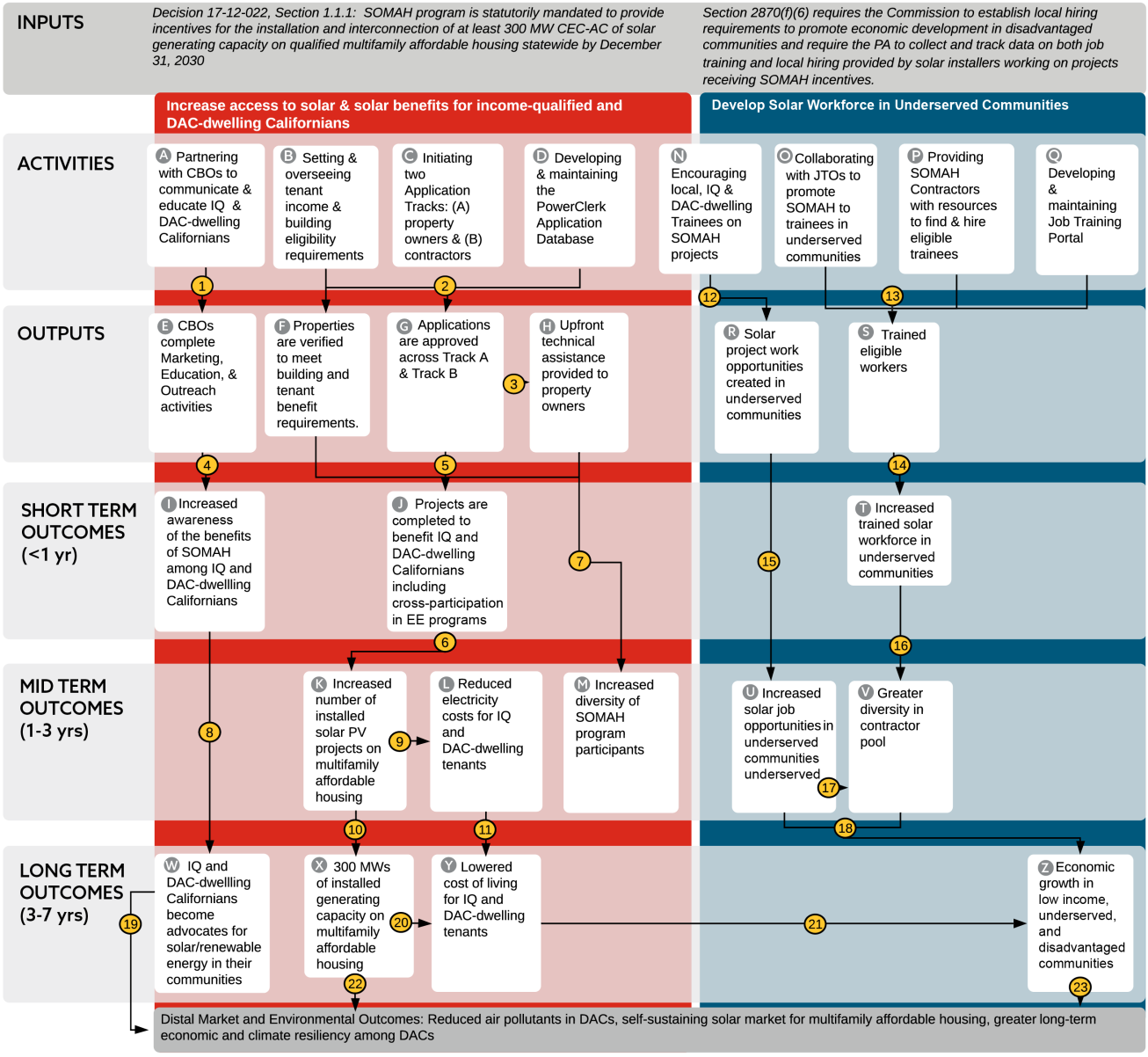
The PTLM includes the following elements, presented from top to bottom in Figure 6-1 below:

- **Activities** represent those efforts conducted by the SOMAH Program that lead to **outputs** hypothesized to effect change in the market (or **outcomes**).
- **Outputs** are stated as quantifiable results of the **activities** performed by the SOMAH Program and should be tracked over time.
- **Outcomes** are the hypothesized effects of the SOMAH Program that, when combined, are hypothesized to achieve the goals of the program. Here, the outcomes are set against four time horizons: short-term (<1 year), mid-term (1-3 years), long-term (>3-7 years), and ultimate market outcomes (those market effects expected to take place over an extended time horizon).

The evaluation team has split the PTLM into sections that detail the activities, outputs, and outcomes designed to achieve SOMAH's goals, which we group as the primary goal to (1) increase access to solar and solar benefits for income-qualified and DAC-dwelling Californians, and secondarily to (2) develop a solar workforce in underserved communities. As the PTLM illustrates, the two objectives work together to generate economic growth and environmental benefits in the historically disadvantaged communities the SOMAH Program aims to serve.

Next, the evaluation team details the program theory and the metrics the team recommends tracking to measure the SOMAH Program's progress against its stated goals and program objectives.

FIGURE 6-1: SOMAH LOGIC MODEL



Track A includes property owners who want technical assistance services from the PA to help assess the solar potential at their property and/or to identify eligible

Track B includes applicants who do not require technical assistance to submit a project reservation

IQ: Income Qualified

DAC: Disadvantaged Communities as defined by CalEPA

6.2 PROGRAM THEORY AND ASSOCIATED EVALUATION METRICS

Throughout the logic model, the evaluation team hypothesized causal links between activities, outputs, and outcomes. These are represented as numbered arrows. The evaluation team developed the PTLM in close consultation with the SOMAH PA to ensure that it accurately represents the PA's understanding of how the program design functions to achieve its goals in the market.

It is important to see the PTLM as a living tool; as the program adapts and adjusts to the market conditions in which it operates, the logic model and associated theory and metrics should be modified to reflect the changing nature of the program. In this way, the theory and recommended metrics for the program are designed as a starting place for the SOMAH Program and future evaluations should revisit the model, the theory, and the metrics.

6.3 SUMMARY OF PROGRAM METRICS

The evaluation team created recommended metrics to track, monitor, and evaluate the progress of the SOMAH Program in achieving its goals. Many of the metrics we have recommended serve to measure multiple outputs and outcomes of the program. For the sake of clarity, we have summarized all the unique metrics in the table below and indicated how they should be measured: as a count, a ratio or percentage, and/or over time.

TABLE 6-1: SUMMARY OF UNIQUE METRICS

Focus	Metric	Measurement Approach*
ME&O Effectiveness	ME&O Activities completed	#, Δ, Q
ME&O Effectiveness	CBOs Participating in SOMAH	#, Δ, Q
ME&O Effectiveness	Targeted Audiences Aware of SOMAH	% aware, Δ
ME&O Effectiveness	Targeted Audiences Aware of Other Programs	% aware, Δ
ME&O Effectiveness	Targeted Audiences Aware of Solar Benefits	% aware, Δ
ME&O Effectiveness	Positive Beliefs and Attitudes toward Renewable Energy	% positive, Δ
Successful Installations	Applicant Projects Received, Milestone Status, and Completed in Track A and Track B	#, % of total, Δ, Q
Successful Installations	SOMAH Projects Approved, Started, and Completed by Capacity[60] (Small, Medium, Large)	#, Δ, Q
Successful Installations	MWs of Installed Capacity on MF Affordable Housing	#, % of total, Δ
Program Benefit Spillover	MF Solar Projects Interconnected Benefiting IQ and/or DAC Residents	#, % of total, Δ
Program Benefit Spillover	HUD & USDA MF Housing Solar Projects Received, Milestone Status, and Completed	#, % of total, Δ, Q
Program Benefit Spillover	Participation in energy efficiency programs (e.g., ESA)	#, % of total, Δ, Q
Technical Assistance	Applicants who Receive Technical Assistance in Track A	#, % of total, Δ, Q
Technical Assistance	Applicants Satisfied with Technical Assistance in Track A	#, % of total, Δ, Q
Distribution of Program Benefits	First Time & Repeat Builders, Contractors, and Property Owners Applicant Received, Milestone Status, and Completed	#, % of total, Δ, Q
Distribution of Program Benefits	SOMAH Projects Received, Milestone Status, and Completed Benefiting Income Qualified Residents	#, % of total, Δ, Q
Distribution of Program Benefits	SOMAH Projects Received, Milestone Status, and Completed Benefiting DAC Residents	#, % of total, Δ, Q
Distribution of Program Benefits	SOMAH Projects Received, Milestone Status, and Completed in HUD & USDA Housing	#, % of total, Δ, Q
Distribution of Program Benefits	SOMAH Trainees Residing in DACs	#, % of total, Δ, Q
Workforce Development	Engaged JTOs Overall and In Portal	#, Δ
Workforce Development	Projects that Met Trainee Hiring Requirements	#, % of total, Q
Workforce Development	SOMAH-sponsored Job Trainings Conducted	#, Δ, Q
Workforce Development	Job seekers Trained and/or Hired for SOMAH Jobs	#, % of total, Δ
Economic Development	SOMAH Trainees Hired for Any Solar Jobs	#, % of total, Δ
Economic Development	Trainees in Underserved Communities who Continue Skilled Work after SOMAH	#, % of total, Δ
Economic Development	Increased Earning among SOMAH-trained Workers	% of total, Δ
Economic Development	Reduced Electricity Costs among SOMAH Tenants	% of total, Δ
Economic Development	Energy Burden % of Income for Energy Bills	% of total, Δ
Economic Development	Tenant Retention Rate	#, % of total, Δ
Environmental Benefit	Days of Good Air Quality	% of total, Δ
Environmental Benefit	SOMAH's annual carbon impact	Δ

* #: Total to Date & within Period, %: Percent of Category to Date & within Period, Δ: Year-over-year Change, Q: Quarterly

[60] Capacity buckets (Small, Medium, Large) are being used as a proxy for the size of the Solar PV system.

To increase legibility, the discussion of the program theory (and proposed metrics) is broken up into four tables: ME&O efforts, solar installation efforts, workforce efforts, and long-term outcomes.

6.3.1 Marketing, Education, and Outreach

As discussed earlier, the SOMAH PA conducts a wide range of marketing efforts to target various program participants, including the program website, a web-based program handbook, tenant-facing materials, and toolkits and guides for potential applicants.

In addition, the SOMAH PA conducts in-person outreach to property owners at various events and collaborates with CBOs to help reach and provide educational materials to hard-to-reach property owners and tenants. Given the breadth of this activity and the limits of the model, the evaluation team represents the SOMAH Program's ME&O activities as a group, focusing on the goal of creating interest and demand for solar and renewable energy among income-qualified and DAC-dwelling residents. Efforts directed at property owners, contractors, trainees, and job applicants are represented in the Solar Installation Efforts and Workforce Efforts, as appropriate.

TABLE 6-2: MARKETING, EDUCATION, AND OUTREACH THEORY AND SUGGESTED METRICS

Link # -- Program Logic/Theory	ME&O Activities Completed per Year	CBOs Participating in SOMAH	Targeted Audiences Aware of SOMAH	Targeted Audiences Aware of Other Programs	Targeted Audiences Aware of Solar Benefits	Positive Beliefs & Attitudes toward Renewable Energy
LINK 1 -- By A) Partnering with CBOs to communicate & educate IQ & DAC-dwelling Californians so that **E)** CBOs complete Marketing, Education, & Outreach (ME&O) activities. SOMAH PA coordinates with the IOUs to create educational and informational materials which are distributed in partnership with the CBOs among various target audiences	#, Δ, Q	#, Δ, Q				
LINK 4 -- E) CBOs complete ME&O which leads to **I)** Increased understanding of the benefits of SOMAH among IQ and DAC-dwelling Californians			% aware, Δ	% aware, Δ	% aware, Δ	
LINK 8 -- SOMAH-contracted CBOs create an **I)** Increased understanding of the benefits of SOMAH among IQ and DAC-dwelling Californians which leads to **W)** IQ and DAC-dwelling Californians becoming advocates for solar/renewable energy in their communities			% aware, Δ	% aware, Δ		% aware, Δ

6.3.2 Solar Installation Efforts

The program components represented here are many and comprise the primary activities of the SOMAH Program. In this model, the team has emphasized those activities that lead to the explicit and implicit goals of the program: to ensure that the benefits of solar energy are distributed among diverse and often underserved Californians living in DACs or who are income-qualified through the installation of solar PV systems on multifamily affordable housing.

TABLE 6-3: SOLAR INSTALLATION EFFORTS AND SUGGESTED METRICS

Link # -- Program Logic/Theory	Applicant Projects Received, Milestones, and Completed in Track A and Track B	Applicants who Receive & Satisfied with Tech Assistance in Track A	SOMAH Projects Received, Milestones, and Completed by Capacity	Participation in Energy Efficiency Programs (e.g., ESA)	First Time & Repeat Builders, Contractors, and Property Owners Applicant Received, Milestones, and Completed	MF Solar Projects Received, Milestones, & Completed		
						Benefiting IQ or DAC Residents	In HUD & USDA Housing	By Capacity
Link 2 -- **B)** Setting & overseeing tenant income & building eligibility requirements, **C)** Initiating two Application Tracks: (A) property owners & (B) contractors, and **D)** Developing & maintaining the PowerClerk Application Database ensures that **F)** Properties are verified to meet building and tenant benefit requirements and **G)** Applications are approved across Track A & Track B	#, % of total, Δ, Q	#, % of total, Δ	#, % of total, Δ, Q	#, % of total, Δ, Q	#, % of total, Δ, Q	#, % of total, Δ, Q	#, % of total, Δ, Q	#, % of total, Δ, Q
Link 3 -- By providing a track for property owners (Track A) and ensuring **G)** Applications are approved across Track A & Track B the program can deliver **H)** Technical assistance provided to property owners		#, % of total, Δ	#, % of total, Δ, Q					
Link 5 -- By ensuring that **F)** Properties are verified to meet building and tenant benefit requirements, **G)** Applications are approved across Track A & Track B, and **H)** Technical assistance provided to property owners, the SOMAH PA in turn ensures that **J)** Projects are completed to benefit IQ and DAC-dwelling Californians including cross-participation in EE programs		#, % of total, Δ	#, % of total, Δ, Q	#, % of total, Δ, Q		#, % of total, Δ, Q	#, % of total, Δ, Q	

Link # -- Program Logic/Theory	Applicant Projects Received, Milestones, and Completed in Track A and Track B	Applicants who Receive & Satisfied with Tech Assistance in Track A	SOMAH Projects Received, Milestones, and Completed by Capacity	Participation in Energy Efficiency Programs (e.g., ESA)	First Time & Repeat Builders, Contractors, and Property Owners Applicant Received, Milestones, and Completed	MF Solar Projects Received, Milestones, & Completed		
						Benefiting IQ or DAC Residents	In HUD & USDA Housing	By Capacity
Link 6 -- **J)** Projects are completed to benefit IQ and DAC-dwelling Californians including cross-participation in EE programs leading to an **K)** Increased number of installed solar PV projects in multifamily affordable housing						#, % of total, Δ, Q	#, % of total, Δ, Q	#, % of total, Δ, Q
Link 7 -- SOMAH-provided **H)** Technical assistance provided to property owners helps to produce **M)** Increased diversity of SOMAH Program participants		#, % of total, Δ	#, % of total, Δ, Q		#, % of total, Δ, Q			

6.3.3 Workforce Development Efforts

In addition to providing solar to DAC-dwelling and income-qualified Californians, the SOMAH Program aims to distribute the market benefits to underserved communities in the form of job opportunities. To do this, the program has engaged JTOs, maintains a Job Training Portal for trainees and job seekers, and connects trainees to SOMAH-incented solar jobs. Here, we detail the theory behind SOMAH's workforce development efforts.

TABLE 6-4: WORKFORCE DEVELOPMENT EFFORTS AND SUGGESTED METRICS

Link # -- Program Logic/Theory	Engaged JTOs Overall and In Portal	SOMAH-sponsored Job Trainings Conducted	Trainees Residing in IQ and DACs	Job seekers Trained, Connected, and/or Hired for SOMAH Jobs	Projects that Met Trainee Hiring Requirements	SOMAH-trainees Hired for Any Solar Jobs	Trainees in Underserved Communities who Continue Skilled Work after SOMAH
Link 12 -- By **N)** Encouraging local, IQ & DAC-dwelling trainees on SOMAH projects SOMAH enables **R)** Solar project work opportunities to be created in underserved communities	#, Δ, Q	#, % of total, Δ	#, % of total, Δ	#, % of total, Δ, Q	#, % of total, Δ, Q	#, % of total, Δ	#, % of total, Δ
Link 13 -- By **O)** Collaborating with Job Training Organizations to promote SOMAH to trainees in underserved communities, **P)** Providing SOMAH contractors with resources to find & hire eligible trainees, and **Q)** Developing & maintaining Job Training Portal SOMAH creates **S)** Trained eligible workers	#, Δ, Q	#, % of total, Δ	#, % of total, Δ	#, % of total, Δ, Q	#, % of total, Δ, Q		
Link 14 -- **S)** Trained eligible workers lead to SOMAH-enabled **T)** Increased trained solar workforce in underserved communities		#, % of total, Δ	#, % of total, Δ	#, % of total, Δ, Q	#, % of total, Δ, Q	#, % of total, Δ	
Link 15 -- **R)** Solar project work opportunities created in underserved communities lead to **U)** Increased solar job opportunities in underserved communities			#, % of total, Δ			#, % of total, Δ	#, % of total, Δ
Link 16 -- SOMAH-enabled **T)** Increased trained solar workforce in underserved communities lead to **V)** Greater diversity in contractor pool			#, % of total, Δ			#, % of total, Δ	#, % of total, Δ
Link 17 -- **U)** Increased solar job opportunities in underserved communities will produce **V)** Greater diversity in contractor pool			#, % of total, Δ				#, % of total, Δ

6.3.4 Long-term and Ultimate Market Outcomes

The following table outlines how the previously described efforts are hypothesized to lead to the SOMAH Program's ultimate goals and suggest metrics to measure its impacts.

TABLE 6-5: LONG-TERM AND ULTIMATE MARKET OUTCOMES THEORY AND SUGGESTED METRICS

Link # -- Program Logic/Theory	Trainees in Underserved Communities who Continue Skilled Work after SOMAH	Increased Earning among SOMAH-trained Workers	MWs of Installed Capacity in MF Affordable Housing	Reduced Electricity Costs among Tenants	Energy Burden % of Income for Energy Bills	Positive Beliefs & Attitudes toward RE	Tenant Retention Rate	Days of Good Air Quality	SOMAH's Annual Carbon Impact
Link 9 -- The SOMAH Program enables: **K)** Increased number of installed solar PV projects in multifamily affordable housing generates renewable energy and results in **J)** Reduced electricity costs for IQ and DAC-dwelling tenants			#, % of total, Δ, Q	#, % of total, Δ	#, % of total, Δ		#, % of total, Δ		
Link 10 -- K) Increased number of installed solar PV projects in multifamily affordable housing will achieve the SOMAH Program goal of **X)** 300 MW of installed generating capacity on multifamily affordable housing			#, % of total, Δ, Q						
Link 11 – SOMAH results in: **L)** Reduced electricity costs for IQ and DAC-dwelling tenants results in **Y)** Lowered cost of living for IQ and DAC-dwelling tenants				#, % of total, Δ	#, % of total, Δ		#, % of total, Δ		
Link 18 -- U) Increased solar job opportunities in underserved communities combined with **V)** Greater diversity in contractor pool will generate **Z)** Economic Growth in low-income, underserved, and disadvantaged communities	#, % of total, Δ	#, % of total, Δ							
Link 19 -- W) IQ and DAC-dwelling Californians become advocates for solar/renewable energy in their communities and will ultimately contribute to the distal outcomes of reduced air pollutants in DACs, building a self-sustaining solar market for MF affordable housing, and greater long-term economic and climate resiliency among DACs					#, % of total, Δ	#, % of total, Δ	#, % of total, Δ	% of total, Δ	Δ

Link # -- Program Logic/Theory	Trainees in Disadvantaged Communities who Continue Skilled Work after SOMAH	Increased Earning among SOMAH-trained Workers	MWs of Installed Capacity in MF Affordable Housing	Reduced Electricity Costs among Tenants	Energy Burden % of Income for Energy Bills	Positive Beliefs & Attitudes toward RE	Tenant Retention Rate	Days of Good Air Quality
Link 20 -- SOMAH produced: **X)** 300 MW of installed generating capacity on multifamily affordable housing will create bill savings and a **Y)** Lowered cost of living for IQ and DAC-dwelling tenants			#, % of total, Δ, Q	#, % of total, Δ	#, % of total, Δ		#, % of total, Δ	
Link 21 -- By creating a Y) Lowered cost of living for IQ and DAC-dwelling tenants, the SOMAH Program will create **Z)** Economic Growth in disadvantaged communities as saved energy costs are spent in those communities				#, % of total, Δ	#, % of total, Δ		#, % of total, Δ	
Link 22 -- X) 300 MW of installed generating capacity on multifamily affordable housing will lead to the Distal Market and Environmental Outcomes of reduced air pollutants in DACs, self-sustaining solar market for multifamily affordable housing, and greater long-term economic and climate resiliency among DACs			#, % of total, Δ, Q			#, % of total, Δ		% of total, Δ
Link 23 -- Z) Economic growth in DACs will generate the Distal Market and Environmental Outcomes of reduced air pollutants in DACs, self-sustaining solar market for multifamily affordable housing, and greater long-term economic and climate resiliency among DACs							#, % of total, Δ	% of total, Δ

7 EARLY EVALUABILITY FINDINGS AND RECOMMENDATIONS

The focus on our Phase I evaluation has largely been centered on (1) understanding the program goals, (2) documenting the program operations, and (2) examining whether the two are well-aligned to deliver on SOMAH's legislative goals through program interviews, data and material reviews, and developing a PTLM and metrics. Here, the evaluation team provides the key findings and recommendations from the Phase I evaluation research and present the next steps for this study.

7.1 PHASE I FINDINGS AND RECOMMENDATIONS

The evaluation team's overall findings of this Phase indicate that the SOMAH PA is clear and internally aligned on the goals and objectives of the program and is working in the spirit of the legislation. Through in-depth interviews, the team found that the SOMAH PA, the IOUs, and the Energy Division are broadly aligned in their understanding of the SOMAH Program's role in delivering solar to low-income and disadvantaged communities through incentivizing affordable solar energy in multifamily affordable housing. In this way, the program stakeholders are all working in the spirit and letter of legislation.

The SOMAH PA has a clear understanding of the program goals and has developed a robust operational framework and network from which to implement these goals. However, there are elements of the program design that may benefit from greater clarity and focus to ensure that the program is effective in its goal to "make [the SOMAH Program] more accessible to participants." [61]

There are finer points where clarity will further support and bolster these efforts. Here, the evaluation team documents a few areas for further definition based on the team's early learnings from the program.

Recommendation 1: Further clarify the specific requirements of the program in two key areas: (1) the definition of disadvantaged communities used in program activities and efforts relating to economic and workforce development, and (2) on-the-job training requirements.

Specifically:

- **Define and adopt distinct terminology for "disadvantaged communities." in relation to economic development.** The legislation states that SOMAH should produce economic benefits and development among disadvantaged communities. However, in programmatic literature, the term "disadvantaged community" is generally used to denote the specific criteria defined by CalEPA and used as a criterion for program eligibility rather than more broadly to historically

[61] D. 17-12-022. Section 5.1. Administrative Structure.

disadvantaged or underserved communities. This creates some ambiguity as to which communities are the focus where economic and workforce development are discussed, and where it is presumably the intention of the legislation not to foster economic growth *solely* in disadvantaged communities as defined by CalEPA, but rather more broadly among underserved communities.

- Provide specific benchmarks for job training efforts to ensure resources are allocated to the intended populations.

Recommendation 2: Tighten the workforce development requirements to ensure job seeker benefits are applied to the intended populations. The team notes that while the CPUC acknowledged the importance of hiring practices focused on local and underserved communities, it declined to adopt specific requirements around hiring and training practices.[62] The SOMAH PA also emphasizes hiring practices that prioritize local and underserved individuals; however, there is a lack of clarity on how success in this endeavor will be measured.[63]

- **Provide specific benchmarks for job training efforts to ensure resources are allocated to the intended populations.** Setting goals and year-over-year benchmarks for trainees from underserved populations and/or living in disadvantaged communities will provide insight into the program's progress in training local and underserved groups.
- **Explore ways to support and develop trainees from smaller contracting firms.** In the spirit of broadly sharing the benefits of the program, explore the extent to which the program might provide additional workforce development to smaller contractors who can help diversify the overall participant pool.

Recommendation 3: Foster Greater Diversity in the Program Applicant Pool. Upon launching, the SOMAH Program experienced an influx of applications, driven largely by businesses that had previously participated in the MASH Program. These businesses had incorporated multifamily solar installation into their business models and were prepared for, and actively awaiting, the launch of the SOMAH Program. Importantly, the SOMAH Program was designed to encourage diverse contractor participation and create opportunities for small contractors and property owners to participate in the program, but existing measures may need to be augmented to bring about broader program participation.

- **Set progressive, year-over-year goals and benchmarks on applicant diversity.** SOMAH was designed to offset concerns around the MASH Program's bias toward large contractors and it is

[62] D. 17-12-022. Section 3.3.2. Providing Economic Development Benefits Through Job Training and Local Hiring.

[63] The SOMAH Program Handbook. Section 2.8.6 Local and Targeted Hiring.

possible that the initial wave of applications could represent pent-up demand among experienced contractors and developers and that way is now open for more Track A applications. However, it appears likely that the SOMAH Program will need to put specific goals and benchmarks in place to intentionally expand its applicant pool.

- **Explore in Phase II of the evaluation the barriers small contractors face to program participation and whether setting caps on large solar contractor applications** would help to ensure participation among property owners and a more diverse set of contractor applications. As of the date of this report, 12 applicants had submitted 326 applications in Track B, with just three accounting for 93 percent of total Track B applicants. One of the three applicants accounted for 63 percent of total Track B applicants, suggesting that a select few firms will benefit from the program in its first year.
- **Identify ways to bring more property managers into the application pipeline.** The evaluation team recognizes that, property owners may require education and exposure over time to understand the benefits of solar and programs like SOMAH and to make the decision to apply. However, Track A, which focuses on property owners, has received only six unique[64] applications since the program launched, and just one of the six has ultimately been approved; the remaining were suspended or cancelled. As part of this effort and to assess whether current outreach is sufficient to successfully introduce property owners into the program and through the application process, consideration could be given to conducting interviews with property owners who have been approached by the SOMAH PA or their CBO partners, or who have registered interest in SOMAH, but have not submitted an application. If deemed insufficient, identify ways to restructure outreach and/or technical assistance to bring more property owners into the application pipeline. This could form part of future evaluations and/or engagement by the SOMAH PA.
- **Examine why half of the Track A applications were cancelled as a result of the Applicant not providing the program documentation required during the Upfront Technical Assistance Request step.** As a SOMAH PA-led or third-party evaluation activity, the evaluation team recommends exploring why these applications were not successful to identify trends and opportunities to better support this population.
- **Explore in Phase II of the evaluation the degree to which program financing and access to capital is a barrier to participation for smaller contractors and property owners.** If project financing issues are limiting the number of small contractors or property owners from participating in the program, investigate feasible project financing arrangements that can help these smaller entities cover the costs of program participation until the SOMAH incentive is paid in full.

[64] The tracking database contains eight Track A applications; however, two were duplicates.

Recommendation 4: Explore the gap between applicants who qualify as serving disadvantaged communities and income-qualified tenants. The SOMAH Program requires that solar installations occur on affordable housing properties. When the evaluation team reviewed the available data on qualifying applications, the team found that roughly one-quarter of applications qualified as serving both a DAC and income-qualified tenants.

- **Compare those that do and do not qualify for both categories to determine if there is a qualitative and material difference between the two.** By understanding how the buildings, ownership profiles, neighborhoods, and tenants' experiences differ across categories, the SOMAH Program will better grasp how the program funds are being allocated and the extent to which it meets the spirit of the legislation.
- **Closely examine those who qualify as serving disadvantaged communities but not as income-qualified tenants to determine the "need state" of tenants in the former category.** Specifically, it may be possible that the solar incentives are being allocated to buildings where most of the tenants are not experiencing economic hardship.

Recommendation 5: Create additional fields in the program tracking database to facilitate tracking and reporting on key program metrics. The SOMAH application does a good job managing the complex SOMAH application process and storing the multitude of forms that are required along the way. However, there are several data elements that are either stored within forms or program correspondence documents in PowerClerk and cannot be easily queried. This makes assessing the current state of some aspects of the program difficult and not easy to track. The evaluation team recommends adding fields to the tracking database such as the following:

- Reason for program suspension. Currently, this information is only stored in the letters that are sent to program applicants. Adding the primary reasons as a dropdown field in the tracking data would allow for more rapid identification and resolution of application issues.
- Reason for program cancellation. The evaluation team found nearly half of the SOMAH cancellations were due to duplicate applications. Having a field to identify the primary reason for application cancellation would allow for an improved understanding of the current status of the program.

Additionally, identify a process by which large errors encountered within the database related to PV capacity sizing or incentive reservation amount can be rectified in a more timely manner to free up funding for waitlisted projects and improve the accuracy of reported program capacity and incentive funding. Through a manual review of SOMAH applications, the evaluation team identified an application that had made a larger error in their estimation of the PV system size requirement for their property and thus also the reserved incentive amount. While this issue was noted in the program comments within the

application portal as an item that needs to be fixed, this application continues to reserve over $2 million in program incentive funding that could be released to a project that is currently waitlisted; the program continues to include this incorrect system size in its reserved capacity estimate.

Recommendation 6: Ensure coordination between PA and IOUs to understand what IOU data is available and to identify what data can best inform the Reservation Request step to ensure SOMAH solar PV systems are correctly sized. Properly sizing the SOMAH PV solar systems is essential to maximizing the reach of the SOMAH Program incentives. Currently, not all the IOU data received during the Reservation Request step contain the necessary fields, such as tenant occupancy and date corresponding to monthly consumption field, to ensure the historical consumption of the property is accurately known.[65]

Recommendation 7: Establish a formal data collection process to ensure all SOMAH project PV system performance data are stored and made available for future evaluation efforts. Without such a system, future M&E efforts are less likely to be successful and are likely to cost significantly more money. This data could either be Performance Monitoring and Reporting System (PMRS) data or the Net Generating Output Meter (NGOM) data. Failing to secure this data has had adverse consequences in past solar evaluations. For example, the final CSI evaluation (that is currently being finalized) was not able to obtain a significant amount of PV system performance data due to PMRS retention policies.

7.2 NEXT STEPS

Process Flow Chart: Given the early stages of SOMAH, the evaluation team concluded that a detailed and accurate Process Flow Chart could not be developed until some projects and processes had moved further toward completion. The evaluation team began data collection and development of the Process Flow Chart during Phase I of the study and it will be provided as a standalone memo during Phase II of the study.

Evaluability Support: As a next step, the evaluation team will conduct in-depth evaluability assessments of select program activities to ensure that the program's activities can be tracked, the metrics can be measured, and the Key Performance Indicators (KPIs) can be assessed. The evaluation team will conduct a more in-depth evaluability assessment of the SOMAH Program to facilitate more real-time self-evaluation and third-party feedback. By providing support for these two forms of feedback, the evaluation

[65] The availability of certain fields in IOU data is dependent on how the IOU billing systems and/or other data collection systems are set up; and not all IOUs have the same data fields available. Better coordination between the PA and the IOUs on what can be used to meet the requirements of the Reservation Request process can alleviate any issues in properly sizing the SOMAH PV solar system.

team will provide the SOMAH PA with the tools necessary to learn from, and adapt the SOMAH Program, to the market. Below, we outline the key activities of the next phase of evaluation:

- Review of program design to assess whether programs have been designed to establish quantifiable impacts against program goals.
- Review of program databases and/or tracking systems to determine whether program databases and tracking systems are specifying, collecting, and tracking the appropriate data to measure the program's success.
- Review of data collection instruments (e.g., surveys and interview guides) to assess whether collection instruments designed to collect the data and support the analysis are needed to feed into the program metrics.
- Third-party analysis and/or verification of PA-collected data to determine if data analyses can be verified through third-party replication.

Update Research Plan with Phase II Methodologies: The SOMAH Research Plan will be updated to reflect details on the proposed Phase II methodologies, specifically related to the quantification of the energy (kW and kWh), environmental (GHG), and economic (bill savings and CARE[66] budgets) impacts of the SOMAH Program, based on what we now know about the availability and completeness of program data.

Conduct Phase II SOMAH Impact Assessment: Once the updated SOMAH Research Plan has been finalized (after a review and comment period) the timing of the Phase II SOMAH impact assessment will be driven by program activity and the status of submitted program applications. At this time, no SOMAH projects have been completed and interconnected; however, by late Fall 2020 the evaluation team anticipates that a number of SOMAH projects will be installed and interconnected, allowing for PV generation and tenant and common area billing data to become available. The current SOMAH schedule has the Draft Phase II report released in mid-February 2021 and the Final Phase II report completed by the end of March 2021.

[66] California Alternative Rates for Energy (CARE) is a program offered by the IOUs that provides participating low-income customers discounts on the electric and gas bills.

APPENDIX A: PU CODE 913.8 REPORTING REQUIREMENTS

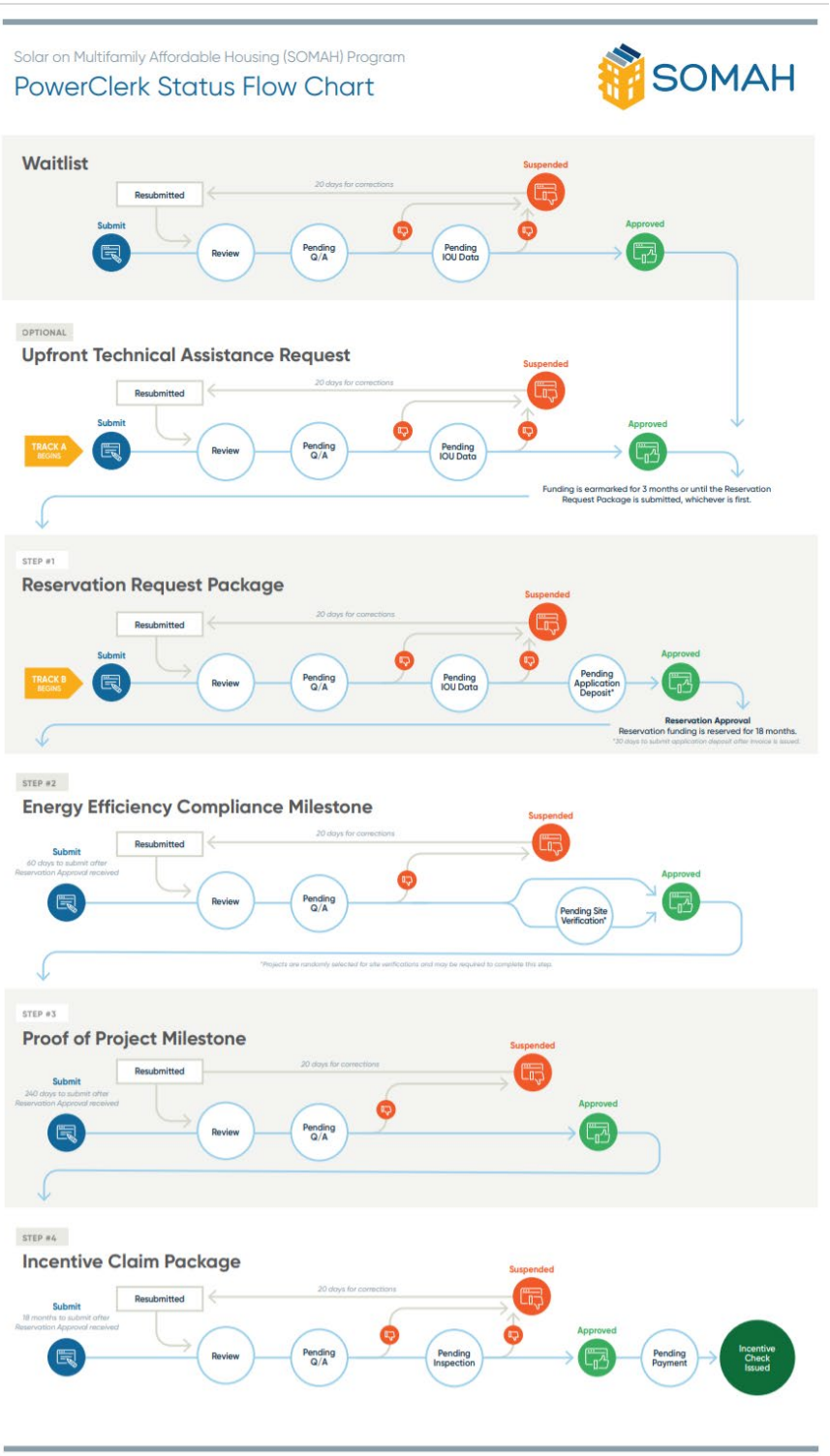
The Public Utilities (PU) Code Section 913.8 requires the CPUC to provide the Legislature with a comprehensive report on SOMAH Program participation and progress towards legislative goals by July 30, 2020. The table below provides a summary of the PU code reporting requirements and the extent to which they are met by this Phase evaluation report. As of the writing of this report, no solar PV systems have been installed through the program and thus the PU Code reporting requirements will be reported on in the Phase II SOMAH report. This table below indicates as such.

PU Code 913.8 Reporting Requirement	Reporting Status
The number of qualified MF affordable housing property sites that have a qualifying solar energy system.	No systems installed to date. This requirement will be covered in Phase II SOMAH report.
The dollar value of the award and the electrical generating capacity of the qualifying renewable energy system.	As detailed in Section 4.2 of this report, the PV system capacity of the 316 currently non-cancelled SOMAH applications based on the Reservation Requests is 81.6 MW_{AC}. The total value of the calculated SOMAH incentive for these applications is $179,891,944. The reserved incentive amount for the 37 applications that have had their Reservation Request approved is $13,939,606.
The bill reduction outcomes of the program for the participants.	No systems installed to date. This requirement will be covered in Phase II SOMAH report.
The cost of the program.	Section 5.5 lays out the total program expenditures through December 31, 2019.
The total electrical system benefits.	No systems installed to date. This requirement will be covered in Phase II SOMAH report.
The environmental benefits.	No systems installed to date. This requirement will be covered in Phase II SOMAH report.
The progress made toward reaching the goals of the program.	1) Expanding access to solar generation and its benefits to low-income customers in multifamily housing, where it is typically limited • As detailed in Section 7 of this report, the evaluation team found that the SOMAH PA, the IOUs, and the Energy Division are broadly aligned in their understanding of the SOMAH Program's role in delivering solar to disadvantaged and low-income communities through incentivizing affordable solar energy in multifamily affordable housing. Section 3.2.3 provides details on the benefits of the program across a diverse group of tenants, property owners, job seekers, and contractors. 2) Incentivizing the installation of at least 300 MWs of solar generation capacity • As detailed in Section 4.2 of this report, the PV system capacity of the 316 currently non-cancelled SOMAH applications is 81.6 MW_{AC} which is 27 percent of the overall program goal of 300 MW_{AC}. 3) Ensuring financial benefits accrue primarily and directly to tenants, and are not recaptured by other means • Section 4.2.3 presents Phase I analysis results which found that while the SOMAH Program only requires 51 percent of a project's electrical

	output to offset a tenant's load, on average across the SOMAH applications received to date, the tenant allocation (both on an application and system capacity weighted basis) is 90 percent. 4) Providing greater accessibility to the program for applicants through a single point of contact, full service technical assistance, and coordination with other low-income programs • Section 4.1.4 provides details on how the SOMAH Program is coordinating with other low-income programs. 5) Promoting local economic development through job training requirements and hiring practices • Section 3.3.2 provides details regarding SOMAH workforce development activities. 6) Facilitating efficient program administration by a single, statewide administrator • Section 7 presents the findings from Phase I of the evaluation. One of the overall findings was that the SOMAH PA is clear and internally aligned on the goals and objectives of the program and is working in the spirit of the legislation.
The program's impact on the California Alternate Rates for Energy (CARE) Program budget.	No systems installed to date. This requirement will be covered in Phase II SOMAH report.
Recommendations for improving the program to meet its goals.	Phase I findings and recommendations are provided in Section 7 of this report.
Analysis of pending program commitments, reservations, obligations, and projected demands for the program to determine whether future ongoing funding allocations for the program are substantiated.	As detailed in Section 4.2.1 of this report, to date a total of 340 SOMAH Applications have been received. Of these: • Two have completed the EE Compliance Milestone • 37 have had their Reservation Request Approved • One Track A Application has completed the Upfront Technical Assistance Request • 27 Applications are currently waitlisted • 24 Applications have been cancelled • 28 Applications are awaiting CPUC final decision regarding MASH/SOMAH incentive stacking • 223 Applications are in the Reservation Request step working with the PA on getting Approval
A summary of the other programs intended to benefit disadvantaged communities, including, but not limited to, the Single-Family Affordable Solar Homes Program established by the commission in Decision 07-11-045, the Multifamily Affordable Solar Housing Program established by the commission in Decision 08-10-036, and the Green Tariff Shared Renewables Program.	This summary is provided in Appendix F.

APPENDIX B: POWERCLERK STATUS FLOW CHART

This section presents a detailed graphic depiction of each of the steps in the SOMAH application process.



APPENDIX C: SOMAH PA RESPONSIBILITIES

The following sections describe the roles and responsibilities of the four organizations comprising the SOMAH PA in detail.

Center for Sustainable Energy (CSE)

CSE operates primarily in program administration and ME&O. CSE is responsible for creating and maintaining the PowerClerk database, processing applications, verifying low-income or DAC qualification, and providing any application troubleshooting assistance as needed. CSE oversees contractor education and outreach, including conducting the contractor training sessions required by the program. Additionally, CSE has prioritized maintaining engagement among waitlisted applicants; recognizing that some owners may find their projects waitlisted for one-two years, CSE has prioritized webinar series and other marketing activities to keep applicants engaged with the program during this time.

CSE coordinates with the IOUs to meet invoicing requirements and works closely with Southern California Edison (SCE), who is the fiscal agent overseeing the SOMAH PA contract, and the CPUC to get invoices for program administration and marketing submitted and approved on monthly and quarterly timelines.

GRID Alternatives (GRID)

GRID operates in all four of the major areas of program. Broadly, the GRID team oversees SOMAH's workforce development efforts in partnership with Community Based Organizations (CBOs), which it manages, as well as tenant outreach, materials, and evaluations. For Track A applicants receiving Technical Assistance, GRID performs the feasibility and economic analysis, which the Association for Energy Affordability (AEA) provides and explains to the applicant. It manages and oversees the SOMAH Advisory Council and hosts the quarterly meetings and creates the annual ME&O strategy.

GRID Affiliate offices may compete in the open market for SOMAH projects and incentive payments. To avoid conflicts of interest, GRID's SOMAH staff are not involved in program administration related to property owner and contractor outreach or market-facing technical assistance. A firewall within the GRID organization has been established, forbidding members of the GRID team who work as competing contractors from having responsibilities with the SOMAH administration team (and vice versa). In addition, a Conflict of Interest policy governing these operations and firewall separations was adopted by the SOMAH PA team and approved by the Commission via Resolution E-4987.

Association for Energy Affordability (AEA)

AEA is responsible for providing the upfront Technical Assistance (TA) and engineering planning provided to Track A applicants from the point of the initial intake call through the application submission process. The goals of the Technical Assistance are to provide applicants with the necessary information they need

to complete their applications, inform owners so that they can make a clearly informed decision to select a solar contractor, and ultimately maximize savings to tenants while minimizing financing costs.

AEA provides Technical Assistance for Track B applicants on an as-needed bases; however, their focus is on Track A applicants. In addition to this, they develop the API data transfer site for the data transfer of TA data between applicants and the PA (specifically CSE and CHPC). They are also responsible for designing and managing an API Technical Assistance Database to track the technical assistance process and to interact with PowerClerk. Additionally, AEA is responsible for sampling energy efficiency audits as part of Pathway 1 in the Energy Efficiency Compliance Milestone, required within 60 days of the reservation.

California Housing Partnership Corporation (CHPC)

CHPC provides affordable housing expertise within the SOMAH PA and leads outreach activities relating to property owners with an aim increasing participation of applicants on the Track A application path, specifically increasing participation among smaller and rural property owners, and focusing on sectors with the highest percentage of disadvantaged communities.

They also work to expand the pool of eligible properties by identifying and addressing barriers to participation in SOMAH caused by conflicting eligibility criteria (particularly with HUD and USDA funded properties), as well ensuring that relevant low-income programs can be leveraged with SOMAH by working with the PA.

APPENDIX D: PROGRAM GOALS AND SOURCE CITATIONS

PROGRAM GOAL	DECISION TEXT	HANDBOOK TEXT
1) Expanding access to solar generation and its benefits to low-income customers in multifamily housing, where it is typically limited.	AB 693 creates an incentive program to encourage the installation of solar energy systems to serve multifamily affordable housing with funding available for up to 10 years, between 2016 and 2026. The purpose of this program is to make solar energy, and the bill savings from on-site solar generation, available to low-income ratepayers throughout California. By subsidizing the costs of solar generation on certain types of multifamily affordable housing and allocating net energy metering (NEM) tariff credits associated with the system's generation to tenants and common areas of the property, AB 693 established the program to provide bill savings to low-income households that would otherwise be unable to benefit from on-site solar generation. (Decision 17-12-022, Section 1.1.1)	The SOMAH Program marks the largest potential investment of dollars in solar on multifamily affordable housing to date in California. This landmark program is uniquely structured to ensure long-term, direct economic benefits for low-income tenants, and create broad impact in disadvantaged communities. (Section 1)
2) Incentivizing the installation of at least 300 megawatts of solar generating capacity.	[The program] has an overall target of installing at least 300 megawatts (MW) of generating capacity on qualified properties by 2030. (Decision 17-12-022, Section 1.1.1)	The SOMAH Program is statutorily mandated to provide incentives for the installation and interconnection of at least 300 MW CEC-AC of solar generating capacity on qualified multifamily affordable housing statewide by December 31, 2030. (Section 1.1)
3) Ensuring financial benefits accrue primarily and directly to tenants and are not recaptured by other means.	Consistent with the requirements of AB 693, tariff credits accrued using the generation from Solar on Multifamily Affordable Housing (SOMAH) developments will be used primarily to offset the bills of tenants of qualifying properties. (Decision 17-12-022, Section 1.1.1).	All projects are required to provide direct tenant economic benefits and be primarily constructed for the benefit of tenants. (Section 1.1)
	Consistent with AB 693, when a system subsidized through SOMAH is owned by a third party, further requirements will apply to ensure that no additional costs of system maintenance or operation be passed on to low-income tenants. (Decision 17-12-022 Section 3.3.1)	At least 51 percent of the system's electric output must directly offset tenant load and be provided to tenants in the form of virtual net energy metering (VNEM) bill credits. (1.1.3)

4) Providing greater accessibility to the program for applicants through provision by the PA of a single point of contact, full service technical assistance, and coordination with other low-income programs.	In an effort to provide a true single-point-of-contact, we expect that the PA will have a solid understanding of the decision-making, finance capitalization, and ownership profiles characteristic of multifamily properties with HUD, California Housing Finance Agency, or Low Income Housing Tax Credit covenants. (Decision 17-12-022 Section 3.3.3.)	The SOMAH PA will function as a single entity, and offer a set of comprehensive, no-cost services to program participants including affordable housing owners/operators, contractors, tenants, and job training participants, among others. (Section 1.3)
	In accordance with Section 2870(f)(7), we require that properties served under the SOMAH Program be provided with energy efficiency services at least equal to those applicable in the current MASH Program. This includes undergoing energy efficiency audits and notifying tenants about the availability of the IOUs' Energy Savings Assistance (ESA) Program. (Decision 17-12-022 Section 3.3.3)	The primary objectives for Technical Assistance (TA) are to ensure affordable housing owners/operators receive accurate, useful, and helpful information; have a positive experience accessing SOMAH Program incentives; develop a robust understanding of other energy programs and options that can be pursued as a coordinated approach with their solar project; and receive assistance leveraging those programs. (Section 1.3.5)
5) Promoting local economic development through hiring practices and job training.	Section 2870(f)(6) requires the CPUC to establish local hiring requirements to promote economic development in disadvantaged communities. In compliance with this mandate, we adopt job training requirements similar to those currently in place for MASH contractors... In addition, we require the PA to collect and track data on both job training and local hiring provided by solar installers working on projects receiving SOMAH incentives. (Decision 17-12-022 3.3.2.)	One of the goals of the SOMAH Program is to stimulate local economic and workforce development, ensuring that community benefits are delivered to traditionally underserved communities. The SOMAH PA team will ensure that there are tools and resources available to contractors to facilitate adoption of local and targeted hiring, including an accessible network of job training organizations offering qualified candidates for first-source hiring via the job training organization directory, location-based search tools in the resume bank, and other resources. (Section 2.8.6)
6) Facilitating efficient program administration by a single, state-wide administrator.	Under AB 693, the CPUC must ensure that the program is administered efficiently, with administrative costs not to exceed 10 percent of the total program budget. (Decision 17-12-022, Section 1.1.1)	It also determined that the SOMAH Program would be administered by a single statewide program administrator (PA) selected through a competitive request for proposal process. (Section 1.1)

APPENDIX E: INTERIM TARGETS FOR MWS INSTALLED

The table below provides the estimated maximum MWs installed per year based on 100 percent of system benefits allocated to tenants and 51 percent allocated to tenants (the minimum amount required to be allocated to tenants) as listed presented in the SOMAH Program Implementation Plan.[67]

TABLE D-1: ESTIMATED MAXIMUM MWS INSTALLED PER YEAR

Year	100% Tenant Load (MW)	51% Tenant Load (MW)
2019	37	54
2020	39	57
2021	41	60
2022	30	45
2023	32	47
2024	34	50
2025	36	52
2026	37	55
2027	39	58
2028	41	61
TOTAL	**366**	**539**

[67] Revised SOMAH Program Implementation Plan. Section X. Interim Targets for Capacity Goals.

APPENDIX F: SUMMARY OF OTHER PROGRAMS BENEFITTING DISADVANTAGED COMMUNITIES

The SOMAH Program is one of a handful of programs in California offering incentives for installation of solar PV to directly benefit low-income customers and DACs. The SOMAH Program is not simply a continuation of California's legacy programs incentivizing access to solar PV for low-income qualifying customers. The program has distinct rules and eligibility requirements, including a focus on serving properties in DACs. In compliance with the terms of AB 693, the SOMAH Program will provide significant subsidies for the installation of solar PV systems on qualifying multifamily affordable housing properties (i.e., multifamily housing financed with low-income housing tax credits, tax-exempt mortgage revenue bonds, general obligation bonds, or local, state or federal loans or grants). To be qualified for SOMAH, properties must also be occupied by households with incomes at or below 60% of the area median income or be in a DAC as identified by the California Environmental Protection Agency (CalEPA).

This section presents a high-level summary of other statewide renewable programs that benefit disadvantaged communities.

Single-Family Affordable Solar Homes Program (SASH)

The SASH Program was established by the CPUC in 2007 in Decision 07-11-045 with $108 million in funding to provide incentives for installing solar PV systems on existing owner-occupied low-income households. The SASH Program is one of the California Solar Initiative's (CSI) two low income solar programs (the other program, MASH, is described below). In 2013, AB 217 extended the CSI low-income programs (SASH and MASH) by $108 million ($54 million for SASH) and established a goal of installing an additional 15 MW of solar on low-income single-family homes by 2021. As of December 2019, the SASH Program in PG&E service territory is fully reserved and therefore closed to new applications.

The objectives of the SASH Program are to:

- Create broad community engagement with solar in low-income affordable housing.
- Provide education for low-income homeowners on the benefits of energy efficiency and solar technologies.
- Enroll and refer qualifying families to providers for energy efficiency services.
- Enable low-income families to access money-saving solar technologies by providing up-front incentives.
- Provide opportunities for community volunteers to participate and for public-private partnerships supporting low-income communities to develop.
- Support local green-jobs training and workforce development programs by enabling job trainees to participate in solar electric system installations.

As of May 2020, the SASH Program (including DAC-SASH described below) had 29.7 MW_{AC} of interconnected solar capacity from more than 9,400 projects, with an additional 2.2 MW expected from active reservations. SASH has paid out more than $133 million in program incentives to date.[68]

Disadvantaged Communities – Single-Family Affordable Solar Homes Program (DAC-SASH)

The Disadvantaged Communities - Single-family Affordable Solar Homes (DAC-SASH) Program, which was modeled after the Single-family Affordable Solar Homes (SASH) Program, provides assistance in the form of up-front financial incentives for the installation of rooftop solar generating systems. The incentives provided through DAC-SASH assist low-income DAC customers in overcoming barriers to the installation of on-site solar energy, such as lack of capital or credit needed to finance a solar installation. To qualify for DAC-SASH, homeowners must live in one of the top 25 percent most disadvantaged communities statewide using the CalEnviroScreen.[69]

The DAC-SASH Program officially launched with the CPUC's approval of the DAC-SASH Program Handbook and Program Implementation Plan in Resolution E-5020 on September 12, 2019. GRID Alternatives serves as the statewide program administrator for both the SASH and DAC-SASH Programs.

As of May 2020, the DAC-SASH Program had 1.1 MW_{AC} of interconnected solar capacity (3.6 percent of the total SASH capacity) from approximately 300 projects, with an additional 1.1 MW expected from active reservations (representing 51 percent of the capacity of active projects in the SASH pipeline at this time). To date, DAC-SASH incentives paid were just over $3 million (2.4 percent of the total SASH incentives paid to date).

Multifamily Affordable Solar Housing Program (MASH)

The MASH Program was established by the CPUC in 2008 in Decision 08-10-036 with $108 million in funding to provide incentives for solar PV systems on qualifying, multifamily affordable housing properties. MASH is the low-income, multifamily component within the California Solar Initiative (CSI) Program. In 2013, AB 217 extended MASH by $54 million and established a goal of installing an additional 35 MW of solar on MF affordable housing by 2021. The MASH Program is currently closed to new applications.

The overall goals of the MASH Program were to:

- Stimulate the adoption of solar power in the affordable housing sector;

[68] The SASH program status to date (and MASH status presented below) is based on data downloaded from DG Stats on of May 20, 2020. These figures include DAC-SASH projects which are broken out in the section below.

[69] https://oehha.ca.gov/calenviroscreen

- Improve energy utilization and overall quality of affordable housing through the application of solar and energy efficiency technologies;
- Decrease electricity use and costs without increasing monthly household expenses for affordable housing building occupants; and
- Increase awareness and appreciation of the benefits of solar among affordable housing occupants and developers.

In 2013, AB 217 set the following additional goals for the program:

- Maximize the overall benefit to ratepayers;
- Require participants who receive monetary incentives to enroll in the Energy Savings Assistance (ESA) Program; and
- Provide job training and employment opportunities in the solar energy and energy efficiency sectors of the economy.

As of May 2020, the MASH Program had 49.8 MW_{AC} of interconnected solar capacity from more than 550 projects, with an additional 16.1 MW expected from active reservations. To date, MASH has paid out nearly $115 million in program incentives. Tens of thousands of units participating in virtual net energy metering (VNEM) as a result of the MASH Program.

Green Tariff Shared Renewables Program (GTSR)

Senate Bill (SB) 43 enacted the Green Tariff Shared Renewables (GTSR) Program. The GTSR Program is intended to (1) expand access "to all eligible renewable energy resources to all ratepayers who are currently unable to access the benefits of on-site generation," and (2) "create a mechanism whereby institutional customers…commercial customers and groups of individuals . . . can meet their needs with electrical generation from eligible renewable energy resources." The statute further provides that the GTSR Program should "provide support for enhanced community renewables programs to facilitate development of eligible renewable resource projects located close to the source of demand." By statue, the costs of GTSR may not be borne by customers who did not elect GTSR service.

The GTSR Program enables PG&E, SCE, and SDG&E customers to receive 50 to 100 percent of their electricity demand from renewable sources. The program has a capped enrollment of 600 megawatts (MW) statewide. Of these, the Environmental Justice reservation sets aside 100 MW for areas identified by the CalEnviroScreen tool as being in one of the 20 percent most disadvantaged census tracts in each IOU's territory. These projects must be between 500kW and 1MW and can fall within 200 percent of the maximum executed contract price, rather than 120 percent for standard GTSR power purchase agreements.

The GTSR Program has two components: the Green Tariff (GT) component and the Enhanced Community Renewables (ECR) component. Through GT, a customer may pay the difference between their current generation charge and the cost of procuring 50 to 100 percent renewables. With ECR, a customer agrees to purchase a share of a community renewable (typically solar) project directly from a developer, and in exchange will receive a credit from their utility for the customer's avoided generation procurement. Neither of these program sub-components are dedicated a certain amount of the overall 600 MW cap.

As of December 2019, 163 MW of new renewable capacity has been built on behalf of the GTSR Program. Each of the IOUs have rebranded their respective GTSR Programs. The rebranded programs for the residential market are now known as the following:

- PG&E: "Solar Choice"
- SCE: "Green Rate"
- SDG&E: "EcoChoice"

APPENDIX G: COMPILED COMMENTS RECEIVED ON DRAFT PHASE I REPORT

#	Comment/feedback/change requested	Evaluator's Response
1	Given that the MASH Program has completed approximately 55 MW of projects in a dozen years and seen 59 percent of applications cancelled or withdrawn (according to the Low-Income Solar PV data set 2020-05-28), SOMAH's goal of 300 MW in 10 years should be considered ambitious. Sunrun therefore believes that the Commission's efforts to improve the program (which is the mandated function of the evaluation) should focus on promoting, enabling, and expanding the program. Any changes should be additive, to bring more participants, properties, disadvantaged communities, and low-income renters into the program. Changes should aim to simplify and streamline, so the bar is lowered for potential program participants to engage.	One of the goals of this evaluation is to document the application process, improve understanding of the ME&O process, and identify ways in which program participation can be improved to facilitate the engagement of a larger pool of program participants. The research conducted in Phase II of the evaluation will explore what can be done to bring more participants into the program.
2	GOALS. The program must be evaluated according to its goals. The statutory goals are to make solar energy systems more accessible to low-income and disadvantaged communities by supporting at least 300 MW of solar across the state, in order to reduce the energy bills of low-income. This is expressly stated in the legislation, in Section 1, E & F, which provide as follows: (e) It is the goal of the state to make qualifying solar energy systems more accessible to low-income and disadvantaged communities and, as in the case of the Multifamily Affordable Housing Solar Roofs Program, to install those systems in a manner that represents the geographic diversity of the state. (f) It is the goal of the state to install qualifying solar energy systems that have a generating capacity equivalent to at least 300 megawatts for the express purpose of lowering the energy bills of tenants at low-income multifamily housing.	The evaluation is conducted to assess (1) the statutory goals of the program, (2) the programmatic goals articulated and outlined by the decision, and (3) the extent to which these goals are translated into the program design. For this reason, the over-arching goals are evaluated as well as the success of the program's efforts in achieving its goals and objectives.
3	GOALS. What is the legal authority to change legislative intent? This is not a case of needing to develop metrics to flesh out vaguely stated legislative intent. Rather, AB 693 and PUC 913.8 provide highly detailed goals and metrics already.	See comment above. The program evaluation's efforts are to evaluate the program design and its stated goals. The program evaluation clarified the primary and secondary goals. However, all will be formally evaluated.
4	GOALS. What was the process used to weight the various goals stated in the legislation or based on dicta in the SOMAH decision (D.17-12-022), provisions in the Handbook, and interviews with administrators (the PA, the IOUs and PUC staff)? The program does include desired ancillary benefits, and it is appropriate to develop metrics to evaluate the efficacy of the program in providing such benefits, but these goals and metrics need to be clearly subordinate to the primary, legally mandated program goals.	All sources outlined here were included in the decision. Please note that the evaluation team did not seek to place a weight on the goals but rather articulated the goals as provided by the sources cited here.

5	GOALS. Why are desired ancillary benefits of the program, such as job training, being given equal weight with the express statutory goals of the program? Why are the administrative interviews and unspecified "document review" being used to enumerate six apparently co-equal goals?	The program theory and logic model is designed to visually represent all aspects of the programs' inputs, activities, outputs, and outcomes. The PTLM is not meant to represent a hierarchy of goals, but rather to illustrate streams of activities against the decisions and program implementation plans. The aim of the PTLM is to be comprehensive and categorize streams of work based on the program design.
6	GOALS. Why is one of the six listed goals, job training and workforce development, being given weight as a "second prong" equal to the statutory goals and above all the other ancillary benefit? Why does the logic model similarly elevate this ancillary benefit to be co-equal with the program goals stated in the legislation? Why were none of the other ancillary benefits included?	As stated above, the program theory and logic model is designed to visually represent all aspects of the programs' inputs, activities, outputs, and outcomes. The PTLM is not meant to represent a hierarchy of goals.
7	GOALS. The draft report articulates "implicit goals" on p. 3-4 and in Table 3-2 on p. 3-5. None of them are objectionable on their face, but they must be clearly subordinate to the statutory goals. This is important because they could work at cross purposes. To the extent such "implicit" goals or desirable outcomes are encouraged and reasonably limited PA budget is directed to provide outreach, education and assistance, that's fine. But if efforts to increase secondary goals are hardened into strict requirements or major efforts that drain limited PA resources that could prevent achieving the statutorily required objectives, that would be clearly impermissible. On the other hand, the succinct statement of metrics to be evaluated in Phase 2 (shown on slide 4 of the 6/4 webinar) clearly captures the primary objectives.	Correct, the program evaluation activities, and long-term metrics, capture the primary goals of the program. Other stated goals contribute to the legislative objective of the program.
8	GOALS. When questions were asked about program goals during the June 4 webinar on the draft report, on several occasions panelists stated that the issue was so convoluted that there wasn't time to get into it in any detail on the webinar; one stated it could take hours to discuss by itself. Yet the panelists also said there will be no further opportunity for public comment prior to the report being issued (other than this comments matrix). How are goals being weighted? The legislative goal of providing at least 300 MW of solar on multifamily affordable housing that primarily provides a bill credit to low income renters is codified. How does this legislative goal rank with ancillary goals?	Refer to comments provided above.

9	GOALS. When questions were asked about program goals during the June 4 webinar on the draft report, on several occasions panelists stated that the issue was so convoluted that there wasn't time to get into it in any detail on the webinar; one stated it could take hours to discuss by itself. Yet the panelists also said there will be no further opportunity for public comment prior to the report being issued (other than this comments matrix).	The draft report contains the metrics referenced here. There are no additional webinars planned. Please note that the metrics for this evaluation may be refined in Phase II, drawing on additional learnings from the evaluation efforts. The Phase II report will also allow sufficient time for comment.
10	GOALS. The questions the Program Logic model attempts to answer, according to the bulleted list on p. 2.2, is too broad, or has been applied too broadly. As discussed above, the evaluator does not have a mandate to change goals and metrics laid out in statute or in the SOMAH Decision. A program logic model has value for some types of evaluations, but there is no basis for substituting an evaluator's analysis or preferred logic for a program in place of clearly stated legal goals and objectives. What is the justification for coming up with different goals than those articulated in the AB693 legislation and the SOMAH Decision?	Please note that the goal of the evaluation is to assess the programs' effectiveness in reaching its legislative goals as well as its programmatic goals, as articulated by the CPUC and the program. All are covered in the program theory and logic model, in accordance with the program's inputs, activities, outputs, and outcomes.
11	LEGISLATIVE INTENT. Assemblymember Susan Talavantes Eggman, the author of AB 693, describes the SOMAH Program thusly: "AB 693 .This bill directs the California Public Utilities Commission (CPUC) to create a new program to install 300 MW of rooftop solar on multifamily affordable housing units through 2030. The program would direct $100 million per year in funds from the electric sector cap and trade auction revenues. The funds will fully subsidize installation of 300 MW of solar on qualified multifamily affordable housing units to benefit tenants." https://a13.asmdc.org/article/key-bills-2015 Is the legislative intent as described by the author of AB 693 relevant to program evaluation?	These are cited in the model and the report. Please see previous comments on the purpose of the program theory and logic model.
12	KEY METRICS. The efficacy of a government program can be measured by the amount of good done per dollar of public investment. This is appropriate for the SOMAH Program, which has a defined cap on revenue (up to $100 million annually for 10 years) and a specific overarching numeric goal, at least 300 MW of solar installed serving low-income apartment complexes and their residents. The key metric for SOMAH, therefore, is not the cost of each system (generally expressed on a per Watt basis), but rather the ***incentive*** per Watt. The program expressly provides lower incentives when combined with certain tax credits. This is to leverage the tax credits and induce private investment, which allows the limited amount of SOMAH incentive funding to provide greater benefits to more low-income renters. The way tax credits work is that certain costs are allowable in the eligible basis for the credit under IRS rules. This includes certain development and financing costs that may not normally be	The cost of solar is not being provided in the report as a "metric" but rather as a data point associated with the program that is informative. It is not intended to be used as a metric to judge the program's success. The text of the report already clearly states that the average cost of a PPA system is not comparable with that of a host customer owned system as many additional items are included in the total PPA project cost (as allowable by IRS rules). The report does show a number of figures/tables with the total

	reported for a simple cash-for-construction installation contract. Taxpayers legitimately work within the rules to capture all costs allowable in basis, to allow greater tax credits -- creating more private capital that can create more MW of low-income solar for a given amount of SOMAH funding. It makes no sense to focus on the total cost reported for tax-credit deals, not only because it is not looking at the same universe of costs, but also, more importantly, because those reported costs allow a reduction in public rebate dollars spent by the SOMAH Program. What is the purpose for using the cost of solar as a metric for projects that utilize other leverage such as low-income housing tax credits, and the Investment Tax Credit? Should success be measured by the incentive dollars spent for the total MW deployed rather than the cost of solar in multifamily affordable housing on the whole?	system cost per kW and incentive per kW (which is lower for PPA).
13	ENGAGEMENT. What is the process for meaningful stakeholder participation? It appears this will be informing Commission decisions, so it needs a fully developed record with an opportunity to comment.	An informal comment period of 15 days (extended to 21 days) was allowed for draft report review and comment. Additionally, a public webinar was held to present the findings from the draft report. This report has yet to be ruled into the record of the R.14-07-002 proceeding. Should that occur, a formal comment and reply process will likely be employed.
14	ENGAGEMENT. Why was this released as a Webinar announcement, with one week's lead time plus one week from webinar to comments due date, given that the report states, "This report represents the first deliverable of the SOMAH Program's first evaluation study and thus is a critical step towards setting up the program for successful evaluations presently and in the future" on p. 1-1. Does staff believe two weeks is sufficient?	Announcement was released on Tuesday 5/26, Webinar occurred on Thursday 6/4, and comments were due 6/10. The deadline was extended to 6/15 upon request. Contact information was provided for CPUC Staff and Evaluation PM so questions or comments could be raised during that review and informal comment period.
15	ENGAGEMENT. The top-level summary on p. 1-4 states, "Through iterative stakeholder interviews and document review, the evaluation team found that the SOMAH PA, the IOUs, and the CPUC Energy Division are aligned..." Table 2.1 seems to define stakeholders as administrative stakeholders only. Why were only administrative stakeholders considered in this summary, and not program participants as well as organizations with a broad interest in affordable housing, low-income advocacy, access to clean energy, and environmental justice? Currently no host customers, applicants, system owners, or host customers have been interviewed about the efficacy of the	Additional stakeholder interviews will be included in Phase II (applicants, system owners, and other affordable housing advocacy/environmental justice groups that are not part of the PA). The findings from Phase II of the evaluation will be included in a final report and will also be used to inform regulators.

	SOMAH Program. Why is the focus on administration rather than participation? Should the SOMAH Program be measured by successful participation and achievement of program goals enumerated in AB 693 and P.U. Code 913.8? Would it not then follow that the Administration of the program could be better evaluated in terms of inducing participation, which is the necessary prerequisite to achieving any goals? The Phase 1 report must be written with awareness that many perspectives are missing, and won't be available until Phase II. Should any recommendations or reports to the legislature be delayed until there is meaningful data that can inform legislators and regulators as to whether the SOMAH Program is working as intended (reaching the 300MW goal and providing bill credits to low income renters?)	
16	PARTICIPANT DIVERSITY. Please provide the factual basis for the assumption that the current state of the SOMAH Program, with concentration among a small number of solar providers, does not reach diverse low-income and disadvantaged communities across this geographically diverse state. What goal of the SOMAH Program would be met by limiting participation by affordable housing owners, developers, limited partnerships, and solar contractors?	As stated in response to other similar submitted comments on participant diversity, Phase II of this evaluation will explore any impacts or consequences resulting from a limited pool of eligible contractors participating in the SOMAH Program
17	PARTICIPANT DIVERSITY. The concept of capping participation by contractors is found, in part, in SGIP (Self-Generation Incentive Program). That was the result of Commission findings that a small number of participants were in effect gaming the system, taking all the incentives available (or available in a certain step), and shutting other contractors and host customers out of the program. Is there any evidence or concern that any party is trying to game the SOMAH application system?	There is no evidence of any contractors trying to "game" the system at this time. It was a concern with the rapid oversubscription of the program on the first day opening of the program in June 2019; however, as the program is currently open to new applications at 4 of the 5 IOUs this appears to no longer be a significant concern.
18	PARTICIPANT DIVERSITY. Is there any evidence that a relatively small number of solar contractors has any negative effect on the diversity of host customers or low-income renters being served by the program?	The impact and consequences of a small number of solar contractors being the only active participants in the program will be explored further in Phase II of this evaluation.
19	PARTICIPANT DIVERSITY. The report states that Sunrun (following its acquisition of the Everyday Energy portfolio and team) accounts for 63 percent of applications. Sunrun has used that breadth of expertise and capacity to fund projects large and small all across the state, in urban, suburban and rural areas. Sunrun is providing solar to farmworkers in the San Joaquin Valley. Sunrun is the applicant for the lone projects in each of Liberty and PacifiCorp territories. Sunrun serves non-profit and for-profit affordable housing sponsors of all sizes, from a national developer to small community organizations. Sunrun is	The evaluation team indicated that, in order to meet the program's stated goals of increasing Track A participants (which was created to broaden program participation), the program should consider placing a cap on Track B projects in order to ensure there are sufficient incentives reservations

	able to use its position in the financial markets to bring extremely low-cost third-party owned solar to small affordable housing properties at scale. Sunrun is able to make marginal properties feasible for an affordable housing sponsor by making up for it on other properties with the same sponsor. Sunrun uses a variety of subcontractors and consultants all across the state, from larger firms to small shops with a handful of people in rural areas. In Sunrun's experience there is no relationship between the size and volume participation of the solar contractor and the diversity of participants ultimately served by the program. In fact, we believe it is our strength and capacity that allows us to serve everyone, not just the most economically viable deals. Is it the point of view of staff or of Itron that Sunrun's participation somehow games the SOMAH Program? If so, what evidence of gaming exists? Is there any evidence of gaming similar to participants in the SGIP Program several years ago that caused the Commission to limit SGIP participation to 20 percent? Isn't it true that the SOMAH Program is specifically included in the SGIP Equity Budget? Isn't it true that the 20 percent participation limitation in SGIP specifically does not apply to participants in the SGIP equity budget? Should it then follow that the SOMAH Program should be subject to the same exemption from participation limitations?	remaining for those applicants who require greater technical assistance in the application process. This is not a comment on the integrity or motives of Track B applicants.
20	PARTICIPANT DIVERSITY. In the discussion of Reco. #3, it suggests only a "select few firms will benefit from the program in its first year." The top 3 solar developers, per the 5/25/20 SOMAH data set, have applied to provide free solar to over 24,000 qualifying households comprising nearly 75,000 low-income and disadvantaged Californians in all five IOU territories up and down the state. Why is this a problem to be fixed? Also, why is there an assumption that only a few firms benefit? Isn't it true that thousands of low-income tenants will benefit? Isn't it true that the property budgets that fund common operations, maintenance and amenities for hundreds of deed-restricted affordable housing properties will benefit?	A "select few firms will benefit from the program in its first year" was in reference to participating project contractors, not tenants. Phase II will explore the barriers faced by nonparticipating contractors and also the degree to which the larger contractors subcontract to smaller firms thereby expanding the actual pool of participating contractors.
21	PARTICIPANT DIVERSITY. The initial round of SOMAH funding was exhausted and a wait list created in only one utility territory, San Diego Gas & Electric. Incentives remain available for any applicant in the other four IOU territories. Three contractors are on the SDG&E wait list, and all three are also participating in other, active projects, in SDG&E territory and/or in other IOU territories, so none of the three has been shut out of the program. Is there any evidence that any contractor or host customer has been shut out of participating in the program because of a relatively large volume of participation by another contractor or host customer?	In the first year of the program (July 2019 opening) this may have been the case but does not appear to be now. Phase II of the evaluation will include interviews with non-participating contractors to determine why they have not participated in the program to date.

22	PARTICIPANT DIVERSITY. Despite the concern about gaming and prior Commission action in the SGIP Program, in reforming the SGIP Equity Budget the Commission recently chose specifically to waive the developer volume caps for Equity projects. The Commission also specifically determined that SOMAH projects would automatically be deemed Equity projects, thus not subject to the developer volume cap. Why would the Commission choose to reverse that recent decision in the SOMAH Program itself, particularly if there is no evidence of some solar contractors crowding out others or any evidence of gaming the program for an unfair advantage?	At this time, no developer caps are being added. Should the program pursue modifications to further specific goals, those forums (the advice letter process, formal activities within the proceeding, etc.) rely on transparent and public processes. Those processes work in concert with the greater policy directions taken by the Commission at large.
23	PARTICIPANT DIVERSITY. Approximately 110 solar contractors have signed up for workshops pre-qualified for the program. Yet only 9 have submitted applications or been selected as contractor on the over 300 applications filed to date (per the SOMAH working data set as of 5/25/20). Why have the other 100 not chosen to participate? This underscores the need to simplify the program and interview program participants.	This will be researched further in Phase II of the evaluation through interviews with non-participating contractors (including those who are on the qualified list as well as those who have attended a training but are not on the qualified list).
24	TRACK A PARTICIPATION. Given the very low conversion of contractor registrations to active participation, and the very low rate of uptake of Track A services, what other program changes could help make the program more accessible to larger numbers of solar contractors and host customers? Is there any benefit/cost analysis of whether such measures would be worthwhile, relative to other uses of program funds such as paying out incentives?	This will be researched further in Phase II of the evaluation through interviews with non-participating contractors (including those who are on the qualified list as well as those who have attended a training but are not on the qualified list).
25	TRACK A PARTICIPATION. Sunrun welcomes well-considered efforts to bolster Track A. To that end, we offer these questions and comments. 1) Why are affordable housing sponsors overwhelmingly choosing Track B? 2) Why have so many of the Track A participants dropped out? 3) Track B market participants are evidently using private resources to reach out effectively to affordable housing owners across the state, with zero cost to the ME&O budget. How can the PA support those effective efforts? How can the PA learn from those efforts to make Track A more effective?	These are all excellent questions that will be explored further via interviews with Track A and Track B applicants during Phase II of the evaluation. As the evaluation report states, of the 8 Track A applications submitted to date, 1 has had its Technical Assistance Approved, 2 were cancelled as they were duplicates, 1 was dropped as they had previously participated in MASH, and 4 were cancelled as the deadline passed for them to submit the required documentation. In Phase II, the evaluation team will attempt to contact these 4 applicants to understand why they failed to provide the required program documentation.

26	TRACK A PARTICIPATION. Is there any basis to presume that Track A projects are better than Track B projects? Is there any evidence they produce better outcomes, better achieve program goals, or provide greater benefits to affordable housing residents? If so, are appropriate resources being made available, and is that funding supported by a benefit/cost analysis (including, relative to other uses of program funds)? If not, why should there be any preference for Track A?	Neither Track A nor Track B applicants are presumed to be "better" than one another. The aim of the additional program support offered for Track A applicants, and the proposed preference they receive in lottery, is to help ensure accessibility and the equitable allocation of program funds to all eligible properties including those may be less experienced in the realm of solar PV installation and need additional program resources to be able to participate. The evaluation team recommends when the volume of completed Track A and Track B projects is sufficient that a comparison of these projects be completed to assess their performance with respect to a number of the key program metrics.
27	DACs. Finding 1 is wrong and Recommendation 1 is therefore off the mark. The definition of a DAC is very clear and precise, for the required purpose of program eligibility. This exact question was extensively discussed in the record, dating from the staff proposals and through the Decision and public comments around it. The discussion has continued post decision, for example as recently as the comments following the Dec. 27, 2019 ALJ Ruling and up through D.20-04-12, always with a clear understanding of the basic rules.	The evaluation team notes that the definition of a disadvantaged community was clearly stated with respect to those served by multifamily solar. However, documentation was unclear with respect to workforce development. We have adjusted Recommendation 1 to reflect this.
28	DACs (continued). Footnote 6 is unwarranted. There is already a clear definition of "disadvantaged community," defined by the Commission for the program. It is outside the scope of an evaluation to redefine it.	The footnote has been deleted.
29	DACs (continued). That said, there are two relevant findings. The first is that a number of parties have in the past and continued to advocate for expanding the strict CalEPA definition – for example, on the June 4 webinar, one of the panelists mentioned two very similar properties literally across the street from one another, but one was eligible and the other was not. Phase 2 of the evaluation may be an opportunity to expand eligibility in reasonable, limited ways that stay true to the legislative mandate of "disadvantaged communities", as many parties including Sunrun have advocated for a number of years.	This is a topic that we will explore in Phase II of the evaluation.

30	DACs (continued). The second relevant issue is that, specifically for the limited purposes of directing workforce development efforts, the best ways to reach disadvantaged communities may be unclear. This is likely because, outside of the very specific job training requirements, economic development is not a defined program goal with direct operational requirements but rather a desired ancillary benefit to be promoted. Recommendation 2 better gets to this question.	We note that this recommendation's aim is not to subvert the over-arching goal but rather to clarify the objectives of economic development in terms that are actionable and measurable.
31	JOB TRAINING – Finding 2 is reasonable, if interpreted very narrowly to concern the geographic component of hiring. Job training program requirements (number of trainees and hours, qualifying work) are already clearly defined. Again, priority order must be kept in mind: creating job training opportunities is a statutory requirement, and promoting local economic development is a desired ancillary benefit to be encouraged.	We appreciate that these requirements are clearly outlined (and we cite them in the report in Table 3-3), and note that, same as the previous comment, this recommendation's aim is not to subvert the over-arching goal but rather to clarify the objectives of economic development in terms that are actionable and measurable.
32	AFFORDABLE HOUSING. Finding and Recommendation 4 reflect a limited understanding of affordable housing that should be improved with interviews with host customers, and perhaps with more focused interviews with PA member CHPC. (CHPC are affordable housing finance experts.) All SOMAH properties are affordable housing. Regulated affordable housing in CA has a mix of income limits. First, many SOMAH DAC properties may be "low income" but not income qualified for SOMAH. "Low income" under most state law refers to households earning less than 80 percent of area median income (AMI). SOMAH adopts a more stringent standard of 60 percent AMI (also used by the Federal Low Income Housing Tax Credit). A number of SOMAH DAC properties with subsidized funding from various state and Federal housing programs have a substantial proportion of units restricted at 80 percent AMI. Second, it is state policy in some cases to have a mix of incomes rather than a concentration of lower-income households. The regulated apartment complex may have some "moderate income" units or unregulated "market rate" units mixed into the complex. In many cases, the "market rate" tenants do not make substantially higher incomes than the occupants of the regulated units, by the nature of the housing offered. In Sunrun's experience, fewer of the DAC projects have a substantial portion of unregulated units, compared to those regulated at higher income limits than 60 percent AMI.	This will be a focus of the research conducted in Phase II.

33	USAGE DATA. The draft report recommends a database flag to identify over-reserved projects, noting that a project was found with a large error in estimated load that therefore reserved too much incentive. SOMAH, learning from the MASH experience, was designed specifically to address this. The program includes a requirement for the utilities to provide actual property usage, and the system size and reservation to be capped accordingly; moreover, this rightsizing step is scheduled early in the reservation cycle. Is this anecdote indicative of a systemic problem, or is Itron's comment based more on the MASH experience? What further measures are contemplated by Itron? Would a change in the current frontloaded process be necessary and effective to address the issue? As an applicant, Sunrun has experienced difficulty in timely provision of utility load data (which we greatly desire to receive as early as possible), and had somewhat productive discussions with the PA on getting the data more quickly. It remains, however, an issue. Does Itron have any suggestions on how to improve this identified problem with the process?	As identified through this review process, it appears the primary delays in obtaining utility load data are a result of incorrect meter or address data provided in the VNEM allocation forms. Recommendations in this report have been revised to reflect this and to direct the PAs to work with Applicants to ensure the accuracy of the data provided in these forms. Additionally, the example provided was not meant to be indicative of a systematic problem, more to illustrate one issue found which resulted in the reservation of excess incentive funding and over reporting of overall application system capacity reserved.
34	Thank you for confirming in the June 4, 2020 workshop that these comments will be attached to the report to the Legislature.	Noted and confirmed that these comments and responses will be included as an appendix to the final report.
35	The PA recommends that Itron remove the part of Recommendation 1 that refers to needing to define DACs for purposes of this program. The recommendation to "identify and specifically define the operational definition of a 'disadvantaged community'" does not seem to make sense given the regulatory framework for the SOMAH Program and the very clear definition of a DAC that exists within it. Assembly Bill 693 (Eggman, 2015), which sets the eligibility for the program, clearly defines DACs for the purposes of this program (Section 2870(3)(A)): (3) "Qualified multifamily affordable housing property" means a multifamily residential building of at least five rental housing units that is operated to provide deed-restricted low-income residential housing, as defined in clause (i) of subparagraph (A) of paragraph (3) of subdivision (a) of Section 2852, and that meets one or more of the following requirements: (A) The property is located in a disadvantaged community, as identified by the California Environmental Protection Agency pursuant to Section 39711 of the Health and Safety Code. The legislation is clear that "DACs" for the purposes of SOMAH are communities that CalEPA identifies pursuant to Section 39711 of the Health and Safety (H&S) Code.	The evaluation team notes that the definition of a disadvantaged community was clearly stated with respect to eligibility requirements for program participation. However, documentation was unclear with respect to workforce development. We have adjusted Recommendation 1 to reflect this.

36	The PA recommends that Itron modify Recommendation 2 to be clear that it is recommending that the Commission augment workforce development requirements. It may be helpful to provide context to clarify the bolded recommendation above and explain why the program requirements are structured the way they are. The Commission did adopt some structure and requirements for the job training and workforce development (WFD) components by stating in the Decision: "We find that it is reasonable to follow the existing job-training model used in MASH, with some additions". Per the Decision, the Commission then directs the PA to: 1) "develop job training guidelines that emphasize the quality of training for each job training participant, rather than maximizing the number of participants trained;" 2) "develop strategies to encourage local hiring by participating contractors"; and 3) "collect and track data on both job training and local hiring provided by solar installers working on projects receiving SOMAH incentives." The SOMAH PA implemented the Decision and modified the current MASH job training requirements to include additional hours for trainees. The MASH + SOMAH job training requirements align job tasks with NABCEP categories and require similar levels of reporting. Because of the Decision's language, i.e., "We do not at this time adopt specific local hiring requirements, but we direct the PA to develop strategies to encourage local hiring by participating contractors", the PA itself is unable to implement Recommendation 2 to "Tighten the workforce development requirements to ensure the job seeker benefits are being applied to the intended populations". Accordingly, it may be helpful to add specificity that only the Commission has the regulatory authority to change this.	The evaluation team will clarify this point and direct the recommendation to the CPUC, if adopted.
37	The PA recommends that Itron modify Recommendation 4 (or related discussion in the report) to make it clear that even if incentives are being allocated to buildings where most of the tenants are not experiencing economic hardship, that the statute specifically allows for their equitable participation; and the most recent Commission directive (in Decision 20-04-012) relates to ensuring properties in DACs - which may have a lower % of low-income tenants - are proportionally represented in the program. Both qualifying property types must be allowed to access incentives equally under the current Commission rules. Therefore, while it may be possible that the solar incentives are being allocated to buildings where most of the tenants are not experiencing economic hardship (i.e., properties located in DACs that have the minimum affordable units to be P.U. Code 2852-compliant), the PA does not have the authority to restrict or hinder properties that meet either P.U. Code 2870 (3)(A) or 3(B) from participating. In fact, there is broad support and	This recommendation has been revised to clarify the evaluators position that there is still quite a bit that is unknown about the differences between those qualified for the program as DACs and those qualified as low-income. It is for this reason that the evaluation team recommends additional research be conducted in this area during Phase II of the evaluation.

	encouragement from the Commission for the PA to ensure that properties in DACs, that meet only 2870(3)(A) are proportionally included in the program, as evident from the recent Decision 20-04-012 on the matter of inclusion of DAC-only properties, which states: "Further, and again because the program only commenced less than a year ago, we reserve judgment on whether and how to modify the program regarding equitable distribution of funds in disadvantaged communities. We support the goal of making the program as equitable as possible…"	
38	**Feedback:** Section 4.1.3 of the SOMAH Phase 1 Draft Report claims that the SOMAH PA does not have a method to properly collect solar data from each incentivized system's Performance Monitoring and Reporting Service (PRMS) provider for M&E purposes. They also claim that the PMRS is responsible for providing 15-minute interval production data to the IOUs to "apply the tenant and common area VNEM allocations and calculate the resulting participant bills net of the accumulated bill credits." PMRS data is primarily for the purposes of providing the developer and host customer with solar production data to ensure the system is working properly and to be able to troubleshoot issues in real time. The SOMAH PA does reserve the right to receive access to the data, but it is not their primary point of receiving solar production data. Instead, the SOMAH PA and the IOUs have agreed to transfer solar production received from the utilities Net Generation Output Meters (NGOM) on an annual basis. Since all eligible projects are required to utilize VNEM, and 100% of the system production goes through the NGOM, it is a simpler way for the SOMAH PA to collect solar production data rather than from PMRS providers of all incentivized systems. Furthermore, IOUs will use solar production data gathered through the NGOM for purposes of calculating bill credits, not from PMRS data. Lastly, determining tenant and common area VNEM allocations is not done through the PMRS, but instead it is a predetermined allocation provided to the IOUs through the VNEM allocation form, submitted in the interconnection application.	The draft report has been updated to reflect this comment.

39	**Comment:** A point of clarification - the SOMAH Program was not designed to "guard against" an influx of applications from a small number of contractors upon program launch. The SOMAH PA fully expected this influx, as a result of an existing project pipeline from MASH. Rather the SOMAH PA was intentional about designing the Program to encourage diverse contractor participation on an ongoing basis. Additionally, the SOMAH PA is placing increased emphasis on encouraging Track A applications, which will likely result in greater contractor diversity. **Change Requested:** The SOMAH PA would like to suggest a fourth bullet point under Recommendation 3. Through the course of our conversations with contractors to understand the impacts of COVID-19 on their business operations, it's been expressed that project financing and access to capital is a barrier to participation for smaller contractors and property owners who are unable to float the cost of the system until post-incentive claim. By breaking up the lump-sum SOMAH incentive payment into staged progress payments tied to discrete project milestones, we may be able to make the program more accessible to a more diverse set of contractors and property owners. **Feedback:** We understand that contractors and property owners were not interviewed for this Phase 1 report. To continue to inform and refine recommendations around applicant diversity, the SOMAH PA suggests that Itron conduct interviews with participating contractors, contractors who are eligible for the SOMAH Program but have not submitted a project to date, and contractors who completed the SOMAH training but then chose not to register as an eligible contractor. We can provide contact information if needed. The SOMAH PA is conducting two such surveys in the coming months to better understand barriers to participation and will be happy to share results with the evaluation team. Additionally, while there are relatively few contractors submitting SOMAH project applications, the SOMAH PA understands from discussions with contractors that many are employing subcontractors for portions of the work, and thus the benefits of the program are spreading beyond just the applicant contractor. We do not currently track the extent of subcontracting and encourage the evaluation team to explore this in potential interviews with contractors.	We appreciate this insight into potential contractor barriers and difficulties under the current system and conditions. We have noted this the section discussing Contractors in the report and flagged it for attention in future evaluations. Thank you for your comment. We have made edits to Finding/Recommendation 3 in both Section 1 and 7 response to your comment. Additionally, in Phase II of the evaluation we plan to conduct interviews with contractors and applicants and will be sure to include question batteries to further explore the issues raised in this comment.
40	**Comment:** The SOMAH Program was designed with robust requirements to ensure solar PV systems are sized appropriately based on actual on-site electricity usage and account for all cost-effective energy efficiency measures. While the SOMAH PA stands by these requirements, we note that they create a level of complexity in the project development and incentive application process that may make the program less accessible to smaller contractors that are not specialized in serving the multifamily sector or do not have the resources to meet the rigors of the	Thank you for your comment. We have shared this with CPUC ED Staff.

	SOMAH application. If encouraging greater contractor diversity is a high priority, we encourage Energy Division to work with the SOMAH PA to identify ways to simplify requirements and remove barriers to participation related to complexities in the eligibility requirements and application process.	
41	**Feedback:** The SOMAH PA seeks to clarify and contextualize the lengthy application processing times presented in Table 4-2. The SOMAH PA acknowledges room for improvement and will continue to work with Energy Division Staff, program applicants, and the IOUs, as well as assess and implement internal process improvements to reduce total processing times and frequency of application suspensions. The SOMAH PA notes that the timelines included in Table 4-2 include normal timeline suspension periods, data request processes, internal review efforts that may entail PA partner review, and normal Milestone turnover timeframes. Reaching Reservation Approval is a collaborative process that requires the Applicant's compliance with the Program guidelines as well as the PA's review and verification process. Common sources of delay in application reviews include the following: - **Volume of applications submitted upon Program launch.** As noted in the Draft Evaluation Report, the program experienced an influx of applications on the opening day, which is not representative of the anticipated steady flow of applications once the program is fully operational. - **Lack of familiarity with SOMAH forms and requirements.** The challenges presented by said influx of applications were compounded by the fact that applicants were still familiarizing themselves with SOMAH Program requirements and forms, leading to higher level of suspensions than anticipated. Additionally, the SOMAH PA team expects reduced review times as application reviewers become more familiar with the PowerClerk application and eight required documents – while reviewers were trained extensively prior to program launch, there is inherently a "learning by doing" aspect to application and document review. - **Multiple suspensions and utilization of the full suspension period.** The SOMAH PA notes that the application review timelines include time during which an application is "Suspended" and awaiting further documentation or corrections by the applicant. During these times, the applications are effectively out of the SOMAH PA's hands. Applications to date have been suspended between 2-5 times, and applicants typically use between 14 to 20 days of the 20-day suspension period to provide corrections.	Thank you for your comment. We have shared this with CPUC ED Staff. Additionally, in Phase II of the evaluation we plan to conduct interviews with program applicants to discuss the application process and help identify areas which could be improved to reduce application processing times.

42	**Feedback:** The SOMAH PA continues to strive for improvement and has implemented several process enhancements during Year 1, including: - Tailored Contractor Training Webinars to cover recent application updates, application nuances, and best practices - Implemented estimation approach into data request to reduce timelines and the need for troubleshooting for less than 10% of the tenant units - Incorporated additional help text in PowerClerk for clearer guidance - Fostered open communication with Applicants to identify and overcome ongoing application deficiencies, learning opportunities, and program suggestions - Added additional language into suspension notices regarding expectations for document resubmissions and potential program repercussions - Refined various PowerClerk data fields to better align with Utility-specific processes - Employ flexible review procedures to avoid unnecessary administrative burdens on the Applicant and Host Customer (without compromising Program requirements) The SOMAH PA considers the use of infractions for Applicants that prove to be non-compliant with the Program with no aim for improvement. However, the SOMAH PA prefers an educational approach and fosters open communication with SOMAH Applicants, directly to: 1) to identify and overcome ongoing application deficiencies and sources of confusion; 2) discuss potential program and application improvements; as well as to 3) encourage diligent document and eligibility review prior to applying to the SOMAH Program. This has allowed the SOMAH PA and its stakeholders to collaboratively overcome many of the issues that have led to long processing times in this initial Program year. The SOMAH PA feels confident that future processing timelines will be reduced when compared to Year 1 metrics.	The evaluation team recognizes the efforts put forth by the PA to improve this first year program in real-time as issues are identified. In Phase II of this evaluation the evaluation team will compare the application timelines for applicants who applied to the program in 2019 (the first year of funding) to the timelines of those who applied in 2020 (when the program was refunded) to determine the overall impact these changes have had on application processing timelines.
43	**Change Requested:** Removal of Recommendation 5, bullet #3: The SOMAH application process requires that the Applicant submit a reservation with their best estimate of a system capacity that would accommodate the project site. During Reservation Request Milestone, once site eligibility has been confirmed and RR documents approved, the SOMAH PA performs the data request. Every application is then suspended and provided with the data request results. (PowerClerk performs an automatic calculation to showcase if an application is oversized for either the tenant or common portion, or both.) This is the point during the Reservation Request Milestone that the Applicant can refine the system capacity to not exceed the annual load (which inherently adjusts the incentive amount, too). Most applications are oversized upon RR Submittal, but no	We understand the current application process and how it allows the applicant to revise the system capacity submitted during the reservation request phase, however the point of this bullet is that the process of making this update in some cases is extensive. In the example provided the issue with the significantly oversized system sizing was for a project that applied to the program on 7/1/2019 and as of 6/22/2020 the incentive and system size is

	applications will be oversized at RR Approval. Funding that is freed up as a result of data request "attrition" is applied to Waitlisted projects.	still incorrect which means these funds have been unnecessarily reserved for nearly 1 year. The recommendation has been not been removed but has been modified in Sections 1 and 7 in response to this comment.
44	**Feedback:** The SOMAH PA will continue to work with SCE to encourage month and year to be included in data requests and will explore the possibilities of addressing occupancy in data requests with SOMAH PA and Utility partners. This may result in leveraging the 36 months of data in a new way or launching further investigation into what the process would be for each Utility territory.	Thank you for your feedback. The evaluation team requests that the PA keep the evaluation team in the loop about changes made to the IOU data provided.
45	**Change Requested:** On page 3-7, the draft report states, "solar installations can proceed once the application receives approval for both Project Milestones." While the solar installation is most likely to take place after the Proof of Project Milestone, this is not a program requirement. Projects can start installation at any time during the application process.	This sentence has been removed.
46	**Change Requested:** On page 3-1, the draft report states, "the program allocates tariff credits associated with the system's generation to tenants and common areas of the property through virtual net metering (VNEM)". The program does not allocate the credits. The property owner and contractor fill out the VNEM allocation form that is submitted to the IOU during the interconnection application, and then the IOU allocates the credits to the individual tenant and common area utility bills.	The draft report has been updated to clarify it is the IOU that allocates the credits to the tenant and common area bills.
47	**Feedback:** Recommend updating language to: "To ensure no conflict of interest….a firewall was implemented at GRID between the SOMAH PA team and GRID's installation teams, and operations of the SOMAH PA team are governed by a Conflict of Interest policy that was approved by the Commission in Resolution E-4987".	The draft report has been updated to reflect this clarification
48	**Feedback:** Recommend updating language to: "GRID's Affiliate offices may compete in the open market for SOMAH projects and incentive payments. So as to avoid conflicts of interest, GRID's SOMAH staff are not involved in program administration related to property owner and contractor outreach or market-facing technical assistance. A firewall within the GRID organization has been established, forbidding members of the GRID team who work as competing contractors from having responsibilities with the SOMAH administration team (and vice versa). In addition, a Conflict of Interest policy governing these operations and firewall separations was adopted by the SOMAH PA team and approved by the Commission via Resolution E-4987.	Language updated in the report. Thank you for the language clarification.

49	**Change Requested:** On page 4-3, the draft report states, "each IOU downloads [VNEM Allocation forms] and uses them to calculate the SOMAH bill credits". The VNEM allocation form is submitted to both the SOMAH PA and to the IOU, separately. The SOMAH PA uses the VNEM allocation form to verify the allocation percentage breakdown between the common area and tenant units and to request the consumption data from the IOUs. The IOUs receive the VNEM allocation form directly from the contractor in the interconnection application. It is also important to note that while the tenant meter numbers are a required data field for the IOU at interconnection, they are not required for the SOMAH PA at the Reservation Request step, with the exception of the SDG&E territory. SDG&E requires the SOMAH PA send the tenant meters to access and pull the past consumption data.	Report has been updated to clarify the distribution of the VNEM allocation form
50	**Change Requested:** 4th bullet on the page, "Program notes that are inconsistent…". These program notes are internal only, and the PA requests any references to internal notes be removed from this public Report. Additionally, the PA requests that no specific application IDs are specified to avoid external concern. **Feedback:** The SOMAH PA will be diligent in ensuring that all internal notes are up to date and accurate to avoid any confusion internally. The note used in this example was outdated and not thorough enough, and the project is, indeed, eligible.	Report has been updated to remove reference to internal notes and all application IDs. The report continues to stress the importance of ensuring the program status is accurate.
51	**Feedback:** The PowerClerk database permits application submissions by territory based on the self-report zip code for the project site. Any Application that was submitted to the wrong territory was either due to user error or close proximity of zip codes to different IOU service territories. In the case of close proximity zip codes to service territories, the SOMAH PA has reviewed the project site and service territory information to ensure the backend PowerClerk permissions are set accordingly.	This clarification has been added as a footnote in the report.
52	**Feedback:** 2nd to last bullet on the page, "… One IOU data feed currently groups tenants by the rate they are on and then provides aggregate monthly consumption and bill amount for each unique rate found at the site. … Including the number of … tenant units that are on each rate in each month would enhance the value of this data feed." The Utility is only authorized to provide the SOMAH PA with aggregated information, which may be a barrier to this recommendation.	The report text was updated to include "if it is allowed due to aggregation and privacy rules". The evaluation team will work with the IOUs in Phase II to determine what additional information can be provided.
53	**Change Requested:** 3.2.1 Program Eligibility: SOMAH PA requests that this section be modified to reflect that the low-income deed restriction is the baseline requirement, accompanied by either: 1) DAC; or 2) 80% @ 60%. (Swap the order in which these requirements are presented, because the deed restriction is the gateway eligibility baseline requirement.)	Report revised to reflect this requested change.

54	**Change Requested:** The CPUC released Resolution E-5054 on June 5, 2020. The Resolution directs the SOMAH PA to: 1) cancel the SOMAH applications that have already received a MASH incentive; and 2) notify the Applicants with active MASH applications that they will need to provide documentation indicating that their corresponding MASH application has been cancelled or withdrawn. Both activities need to be completed within 15 days of issuance of the final Resolution.	The report has been updated to reflect Resolution E-5054.
55	**Change Requested:** While the JTO database has been established, the list of JTOs continues to grow through outreach, which is still active. The PA recommends that the description under this section be changed to: "The SOMAH PA has created a database of JTOs….and continues to conduct outreach to increase JTO participation and broaden the reach of the SOMAH Program".	Report revised to reflect this requested change.
56	**Change Requested:** The PA subcontracts with CBOs to support tenant outreach and education and workforce development, specifically. While many of the program's MEO activities fall under these categories, oversight of all MEO activities is performed through and by the PA team. The PA recommends updating the language to soften the role of CBOs and elevate the role of PA, e.g., "with support of community-based organizations".	Report revised to reflect this requested change.
57	**Change Requested:** The PA team leads ME&O efforts to property owners, which is not reflected in the logic model. The logic model focuses only on the role of CBOs with eligible tenants, not property owners. The PA recommends modifying the existing flow chart and table or adding PA ME&O efforts to property owners: 1) Identify and manage data of eligible properties; 2) Complete ME&O with co-marketing partners; 3) Property owners of eligible properties participate in SOMAH.	Report revised to reflect this requested change.
58	**Change Requested:** Ensuring the participation of trainees and helping contractors meet job training requirements is a key objective of SOMAH's ME&O efforts. The PA recommends adding an additional section/activity around supporting trainees and contractors in fulfilling job training requirements.	Report revised to reflect this requested change.
59	**Feedback:** A large part of property owner outreach is supporting them with their tenant education requirements. The PA recommends adding **"**...collaborates with local CBOs to engage property owners about the SOMAH Program **and support tenant education"** to this description.	Report revised to reflect this requested change.
60	**Feedback:** Would recommend adding some mention around co-marketing with existing/related renewable energy programs and affordable housing associations as a key ME&O strategy. Could include in section 5-1 *Engaging Property Owners*. Update text to read: "...The SOMAH PA collaborates with CBO partners to conduct outreach to owners of small or rural properties, who are	Report revised to reflect this requested change.

	otherwise less likely to participate. T**he SOMAH PA also works collaboratively with other non-profits, affordable housing associations, CCAs, and IOUs to co-market the program with related programs and outreach efforts and plans to expand and increase participation."**	
61	**Feedback:** Suggest "(i.e., larger projects do not seem to bring **down** the cost per kW due to an economy of scale)".	Edit made to report.
62	**Change Requested:** Recommend updating language to provide clarity: "While Track B applicants <u>are not eligible for Upfront Technical Assistance, standard TA services from the SOMAH PA are available throughout the project lifecycle.</u>"	Report revised to reflect this requested change.
63	**Change Requested:** Recommend updating language for clarity: "**Submitting the Upfront Technical Assistance Request** is the first step for Track A applicants."	Report revised to reflect this requested change.
64	**Change Requested:** Recommend updating language for clarity: "Additionally, the PA has developed a detailed process flow to create a seamless experience for both upfront (Track A) and standard **(Track A or B)** technical assistance requests."	Report revised to reflect this requested change.
65	**Feedback:** If the 6 percent of applications referenced that are within DACs but did not appear on CalDGStats are in any status prior to Reservation Approved, this data field should not be considered verified yet. The SOMAH PA would look forward to engaging with ITRON to compare assessment methods and identify any oversights.	During Phase II the evaluation team will work with the PA to compare DAC verification methodologies
66	**Change Requested:** The SOMAH PA not responsible for pulling and uploading PowerClerk data to DGStats. DGStats reporting is part of the subcontract with Energy Solutions. The data is pulled via an API, similar to other program reporting for CSI and MASH. Energy Solutions ensures data integrity and weekly publication of the working data set. The working data set does not include any PII.	This appears to be Page 4-1 not 4-12. The report text has been updated to reflect this comment.
67	**Change Requested:** Proposed redlines to clarify eligibility requirements: "Through in-depth interviews with the SOMAH PA, IOUs, and the CPUC, we identified two primary goals that drive program activities: 1) Increasing access to solar and its benefits among low-income Californians residing on a deed-restricted low-income property that is located within a who are low-income and/or live in DACs and/or maintains at least 80% residents whose income is 60%, or less, than the AMI to reach an installed generating capacity produce output of at least 300 MWAC of installed generating capacity by 2030; ...".	Report revised to reflect this requested change.
68	**Change Requested:** The SOMAH Program has 2 Track A applications.	Based on the data extracted on May 4th, 2020 there was only 1 Track A application that had not been cancelled. One PG&E application had a current status of "Waitlist: Suspended - Upfront Technical Assistance Request"

		however when the evaluation team reviewed this application in PowerClerk the notes stated the deadline had passed for documentation and so the application was cancelled.
69	**Change Requested:** Proposed redlines to 1st bullet on the page: "A signature issue on the submitted document: Signature issues ranged from the forms not being signed, being signed by the wrong individual, or not including the correct type of signature (some forms require wet signatures and others electronic signatures), being a verifiable electronic signature". **Feedback:** Any form can be signed by hand or electronically.	This change has been made in the document, however the comments provided to the applicants do not clearly indicate that forms can be signed in either manner. Comments regarding the reason for suspension include: 1 - "The form was not signed using verifiable electronic signatures. Please resubmit including electronic signatures for all parties". This makes it sound like a hand/'wet' signature is not acceptable. This comment was applied to a number of documents including the Reservation Request Form, the Affidavit ensure 100 percent Tenant Economic Benefits, and others.
70	Remove the recommendation to "identify and specifically define the operational definition of a "disadvantaged community." This is already very clearly defined by the CPUC in the Decision related to this program.	The evaluation team notes that the definition of a disadvantaged community was clearly stated with respect to those served by MF solar. However, documentation was unclear with respect to workforce development. We have adjusted recommendation 1 to reflect this.
71	Footnote 6 on page 1-4 states that "unless otherwise noted, the use of "disadvantaged community" in this report will denote the broader definition of a historically disadvantaged community…" in order to avoid confusion and/or conflict with the Decision, the term "Disadvantaged community" should refer only to the communities that meet the approved definition under SB 535 (see https://oehha.ca.gov/calenviroscreen/sb535) All others should be termed something else (i.e., vulnerable population or low-income population).	The footnote has been deleted and verbiage has been clarified throughout.
72	Delete "This led to long delays in the application process as the SOMAH PA waited for the IOUs to rectify the issue." SDG&E can provide evidence if requested on the multiple data issues experienced and our responses back to the Program	The report has been revised to clarify that the delays experienced are not necessarily the fault of the IOUs.

	Administrator that the IOU needed better data inputs from the PA in order to provide accurate responses. The assertion that the PA had to "wait" on the IOU is misstated and inaccurate if our evidence shows that the issued needed to be "rectified" by the PA first.	
73	Delete "At this time there is no verification that the IOUs are acting upon the file they receive from the SOMAH PA…" and replace with "At this time, at least one of the IOUs has not received any file from the SOMAH PA with any ESA Program referrals." While SDG&E cannot comment on whether or not other IOUs have received ESA referrals with contact information, SDG&E has not received any specific referral from the SOMAH PA at any time, despite multiple documented requests.	The report has been revised to clarify that no ESA Program referrals have been provided by the PA to the IOUs as this time.
74	Consider a finding to explore the ESA Referral process in order to examine whether the timing of the referral to the IOU ESA Program is appropriate. Per page 4-7 The ESA Program referral comes after the "Reservation Request" approval is completed. On page 4-12, SDG&E notes that this approval notice comes at the culmination of the reservation request package. There is no indication of the timing from when a package is received to when a package is approved - this lag should be explored to find out if an ESA referral could come sooner in the process. In addition, SDG&E notes that the "Energy Efficiency Compliance Milestone" must be submitted within 60 days of receiving the Reservation Approval Notice, and that "documentation of an on-site whole building walkthrough or proof of enrollment in an IOU... whole building energy efficiency program in order to complete the Energy Efficiency Compliance Milestone." is required. Considering the loading order, and that Energy Efficiency improvements available through the ESA Program should necessarily happen prior to the sizing of a solar system and the determination that the energy efficiency compliance milestone is satisfied, this exploration of timing of the referral process seems critical to the evaluation of the benefits of the program overall.	The solar sizing tool is used to identify EE measure that could be installed to bring down tenant or common area usage. In Phase II will further explore the timing of ESA Program participation and its impact on PV system sizing.
75	Change "To fulfill the requirement that SOMAH tenants be informed about the IOU's ESA Program, the SOMAH PA provides the IOU's ESA Program point of contact with a monthly list of SOMAH property owner contact information for applications that have received Reservation Request Approval." to the following : "To fulfill the requirement that SOMAH tenants be informed about the IOU's ESA Program, the SOMAH PA is required to provide the IOU's ESA Program point of contact with a monthly list of SOMAH property owner contact information for applications that have received Reservation Request Approval." This change illustrates the fact that not all IOUs (namely SDG&E) have received this monthly list.	The report has been revised to clarify that no ESA Program referrals have been provided by the PA to SDG&E at this time.

76	SDG&E questions the validity of Recommendation 4. The recommendation presents a fundamental misunderstanding, that there is a strong correlation between a disadvantaged community and income level. There is a higher propensity for customers that live in disadvantaged communities to be lower income, but it is not surprising to SDG&E that there is not greater overlap. Conclusions in the report leading to recommendations must be fact-based and use critical thinking and statistical data analysis that determines where overlaps may exist, or where there is less correlation.	Recommendation 4 merely suggests further research in Phase II of the evaluation to explore the differences that exist between the two SOMAH eligible populations.
77	Revise recommendation 6 to: Ensure coordination between PA and IOUs to understand what IOU data is available, and to identify what data can best inform the Reservation Request step to ensure SOMAH projects are correctly sized. Comment - The availability of certain fields in IOU data is dependent on how the IOU billing systems and/or other data collections is set up; there is a false assumption that all IOUs have the same data fields available. Better coordination between the PA and the IOUs on what can be used to meet the requirements of the reservation request process can alleviate any issues in properly sizing the SOMAH PV solar system.	This revision has been made and a footnote added to report on the differences that may exist between IOU tracking and billing systems which may impact that data that can be provided.
78	Revise the logic model to reflect the SOMAH Decision that requires coordination between SOMAH and ESA. Given that the PA has not been provided funding to market ESA, nor would SDG&E expect it to do so, and SDG&E has the role to market ESA, SDG&E must assume that the coordination would be in the form of ESA referrals from the SOMAH PA to SDG&E. This is not happened to date. As a short-term program outcome, the report is lacking is addressing this decision requirement.	Thank you for this suggestion. We have included a metric intended to capture the output of ESA referrals, however, as these referrals form part of the application process more broadly, we feel it is represented in the activity of the PA processing applications.
79	Metrics in Program Spillover section should include number of ESA savings (kW or MW) from providing ESA referrals to IOUs.	Please refer to the previous comment.
80	"The utilities are required to process ESA Program referrals from the SOMAH Program. At this time there is no verification that the IOUs are acting upon the file they receive from the SOMAH PA; however, a comparison of enrollment in the ESA Program across the IOUs can be completed in the future based on data provided by the IOUs (described below) which will help to identify the success rate of these referrals." At this point in time, SDG&E has yet to receive any ESA Program referrals from the SOMAH Program PA.	The report has been revised to clarify that no ESA Program referrals have been provided by the PA to SDG&E at this time.
81	5th bullet under research questions -- the barriers and recommendations for overcoming the barriers were not adequately addressed in this draft report. Since they are stated as a research question for this draft report, can the report add a section that specifically speaks to it?	The evaluation team was unable to investigate barriers in great detail due to the stage of the program at the time of the evaluation and the scope of the evaluation budget. However, any learnings gathered through Phase

		II work will be included in the Phase II report.
82	Recommendation #1 -- Since an official definition of "disadvantaged communities" already exists, can the recommendation be limited to setting benchmarks for success around the existing definition?	Thank you for this suggestion, the evaluation team has clarified this Recommendation.
83	Recommendation #2 -- "explore ways to support and develop trainees" -- Can the report provide more specific recommendations? For example, SDG&E offers no cost training for disadvantaged workers. Also, next year the IOUs will launch a statewide program for workforce readiness that will target disadvantaged workers and communities.	The evaluation team will address this recommendation in the Phase II report after greater evaluability support has been provided.
84	Table 3-1: why are tenants considered job trainees? The relationship of tenant to job trainee was not discussed in the report. Can the report explain how the program recruits job trainees from participant property tenants? This activity is also not shown in the PTLM.	The report notes job training eligibility criterion in Section 3.3.2 on Workforce development, and the evaluation team has endeavored to highlight this more clearly.
85	"At this time there is no verification that the IOUs are acting upon the file they receive from the SOMAH PA." This sentence is unnecessarily critical. Can the report add that for SDG&E the SOMAH PA has not provided any file to date.	The report has been revised to clarify that no ESA Program referrals have been provided by the PA to the IOUs as this time.
86	Table 5-1: Can the table add columns for the budgeted amounts by category?	The PA provided the evaluation team their annual budgets, however they are not directly comparable to the expenditure categories in table 5-1 and so have not been included in the table. According to the budget spreadsheet provided, the total PA budget in 2018 was $3,926,477 and the total budget in 2019 was $8,069,019.
87	J -- "projects completed" are shown as a short-term outcome. Given the delays described in the report, would this outcome better fit as a mid-term?	We acknowledge the delays in the process to date but believe that by design project completion would be a nearer-term outcome. The logic model is intended to address the underlying logic of the program rather than document it's progression from a fixed start date.
88	(Links 4 & 8) Statement in theory says efforts lead to increased understanding but related metrics are to measure awareness. Recommend changing theory to "awareness" also.	We agree and will revise this in the model.
89	(Links 4 & 8) Measuring change in awareness of solar benefits in general and of other programs must take into account other non-program related information sources. Not all increases in	The PTLM only reflects the investments made with program dollars and cannot account for all

	awareness will come from this program's educational efforts. Can the report acknowledge this and discuss how this will be measured?	sources of learning. However, sources of education that may occur outside of the program can be measured in data collection. This may include, but is not limited, utility-funded marketing, education, and outreach.
90	(Link 7) Assumes "diverse" participants would not participate without this program's technical assistance. Can the report acknowledge this assumption and discuss how to take into account when metrics are measured?	We have clarified in the report that "diverse" is not meant to describe the demographics of participants but rather the number and range of participants.
91	(Links 12 to 17) -- the proposed metrics refer to "trainees residing in IQ and DACs" -- is this definition set by the program? Decision 18-10-008, OP 9 provides an official definition of "disadvantaged worker" -- would this apply in this context?	Yes, this refers to the definitions set by the program. We would refer the second half of this comment to CPUC.
92	The second bullet under recommendation #1 does not seem to belong there and is a repeat of the first bullet in recommendation #2.	We have revised this finding and recommendation.
93	"The evaluation team recommends working with the IOUs during Phase II of the evaluation to examine feasible alternatives to acquire tenant occupancy both during the SOMAH Application process and program evaluation." In many instances, it is difficult for the IOU to acquire tenant occupancy due to data limitations and inconsistencies with how move-outs/tenant occupancy are handled by a property owner.	The report has been revised in response to this comment
94	" This led to long delays in the application process as the SOMAH PA waited for the IOUs to rectify the issue." More accurately, the list of meters or addresses provided by the applicant was incomplete due to listing some meters multiple times when each unit should have a unique meter ID. SDG&E has responded to all data requests within the outlined timeline and has been awaiting the applicant to resubmit their corrected applications, which in most cases has not happened.	The report has been revised to indicate the issues obtaining billing data from the IOUs often stem from issues with the unit level data (meter #s or addresses) provided by the applicant on the VNEM forms making it difficult for the IOUs to identify the appropriate bills to provide to the PA
95	"the IOUs have had difficulty matching the tenant addresses and meter numbers entered during the application process to those listed in their billing system. This led to long delays in the application process as the SOMAH PA waited for the IOUs to rectify the issue." This report makes no assessment of the accuracy of information submitted to IOUs on VNEM forms, or the appropriate level of detail provided by the applicant. For example, SDG&E understands that the applicants do not work with tenants to true up their applications.	Please refer to the previous comment.

96	Finding 6: The datasets agreed between PA and IOUs are clearly identified in Commission Resolution E-4987 Appendix B "Approved Data Elements for the SOMAH". The IOUs will require extensive coordination with IT to modify any such datasets. Additional data should be discussed with a wider audience.	We acknowledge the coordination needed with utility IT departments prior to requesting any changes to the data feeds provided by the IOUs to the SOMAH PA. This recommendation suggests the current data feeds include the appropriate data elements to ensure proper program solar sizing.
97	Finding 7: As ITRON states in footnote, occupancy data is not readily available by the IOUs. The property manager should be a better source. Suggesting that the IOUs provide more data creates additional issues.	The footnote has been revised to reflect that in Phase II the evaluation team will work with both the IOUs and PA to determine the optimal source of occupancy data which may include the property manager.