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SOMAH Third Party Evaluation

Public Webinar on Phase II Research Plan

SEPTEMBER 21, 2020

AGENDA

- » Welcome and Introduction
- » Evaluation Overview
- » Phase I Evaluation Recap
- » Current Program Status
- » Phase II Evaluation Activities
- » Stakeholder Feedback and Questions
- » Phase II Timeline



ABOUT THE SOMAH EVALUATION

Objectives and Approach

» Evaluation Activities

- Process Assessment – Documentation of how SOMAH is working and areas for improvement
- Evaluability Assessment – Assess data collection protocols for future program evaluations
- Impact Assessment – Reporting on key metrics to assess SOMAH's performance vs. goals

» Two Phase Approach

- **Phase I focus:** Process assessment, evaluability assessment, participation analysis
 - Output: PTLM, program metric definition/assessment, participation assessment, Phase I Report
- **Phase II focus:** Gross Impact Assessment
 - Metrics evaluated: # installed projects, project costs, and program impacts [energy (MW and MWh), environmental (GHGs), and economic (bill savings)]

PHASE I EVALUATION RECAP

» Phase I Activities

- Reviewed PA tracking database and summary of key program metrics
- Program Theory and Logic Model (PTLM) development
- Established program metrics used to assess SOMAH Program performance
- Reviewed/documentated SOMAH data collection protocols
- Phase I Report publicly available

CURRENT PROGRAM STATUS

- » Program reached one-year mark on July 1, 2020
- » Implemented an annual incentive-step down of 5%
 - Continue to receive applications after the incentive step-down
- » Program funding available in 4 out of 5 territories
 - SDG&E is open for waitlist applications, with four projects on the waitlist
- » Continue to receive feedback from industry and participants and make program adjustments due to COVID-19
 - Such as extended application deadlines, online ME&O, and progress payments advice letter
- » Program Milestone: First SOMAH project received Permission to Operate in July 2020

SOMAH APPLICATIONS TO DATE

IOU	Number of SOMAH Applications		PV System Capacity (kW _{AC})		Average System Capacity (kW _{AC})
	#	%	kW	%	
Liberty Utilities	2	1%	223	0%	111.7
PacifiCorp	1	0%	149	0%	148.6
Pacific Gas and Electric	203	51%	42,656	48%	210.1
Southern California Edison	132	33%	29,739	33%	227
San Diego Gas and Electric	60	15%	16,044	18%	267.4
Total	398	100%	88,811	100%	223.7

- » 398 applications submitted (as of August 17th)
- » PV system capacity is 30% of 300 MW SOMAH Program goal
- » Reserved incentives ~ \$201M

PHASE II EVALUATION ACTIVITIES

- » **Program metric establishment** for future program assessment
- » **Evaluability consulting** to review the SOMAH PA's methods of assessing program metrics
- » **Interviews** with contractors and host customers
 - Integrated with PA surveying efforts
- » **Process flow chart (PFC)** development
- » **Program assessment:** #/characteristics of projects, program costs/spending, actual vs. goal
- » First-year **gross impact assessment:**
 - Electrical load (MW and MWh)
 - Economic
 - GHG reduction
- » **Final reporting** and webinar

PROGRAM METRIC ESTABLISHMENT

Identifying the best metrics for future program evaluations

Relevant research questions:

- » Are survey and interview data collection instruments designed to collect the data needed to feed into the program metrics?
- » Are the sampling frames and sizes designed to support statistically significant and measurable effects?

Deliverables: Memo providing recommended metrics

EVALUABILITY CONSULTING

Ensuring PA research instruments are set up to evaluate the program successfully

Relevant research questions:

- » Are survey and interview data collection instruments designed to collect the data needed to feed into the program metrics?
- » Are the sampling frames and sizes designed to support statistically significant and measurable effects?

Deliverables: Review of up to 5 PA data collection instruments (surveys, guides, etc.), depending on complexity of the instrument and/or sampling approach

CONTRACTOR AND HOST CUSTOMER SURVEYS

Program Actor	Group	Type	Sample	Target Completes	Research Objectives
Contractor	Participant	In-depth Interviews	9	4	Process flow chart, program participation experience, satisfaction, areas for program improvement, barriers to reaching program goals
	Non-Participant	“Barriers to Entry” survey (PA)	234	Census	Experience with the program, participation in other solar programs, plans for future participation, barriers to participation, areas for additional support and program improvement
Host Customer	Active SOMAH Project	In-depth Interviews and web surveys	69 Total 56 Active 31 Cancel	Interviews: 6* Web surveys: Census	Process flow chart, program participation experience, satisfaction, areas for program improvement, drivers/barriers to participation, likelihood of future participation
	Cancelled SOMAH Project			Interviews: 3** Web surveys: Census	Reasons for cancellation, likelihood of future participation, recommendations for program improvement
	Non-Applicants	Web survey	3,427 ***	Census	Reasons for not applying to the program, likelihood and timing of future program participation, help overcoming barriers to solar adoption, recommendation for program improvement

SURVEY BATTERIES

High-Level Research Categories	Contractors	Host Customers	Process Flow Chart
Current SOMAH participation experience	X	X	X
Dispersion of program benefits amongst intended benefactors	X	X	
Timeliness of application process	X	X	X
Adequacy of program education and assistance	X	X	
Program marketing activities and messages	X	X	
Barriers to SOMAH participation	X	X	X
Feasibility of attaining program goals	X		
Suggestions for program improvement	X	X	X

PROCESS FLOW CHART DEVELOPMENT

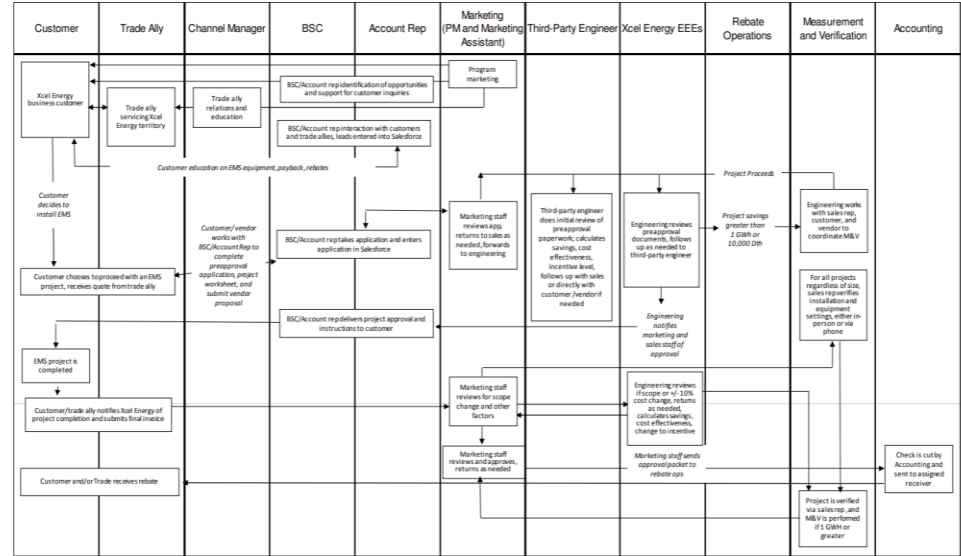
Providing a 'cradle-to-grave' view of operations and administration

Relevant research questions:

- » How does the program work in practice?
- » Are there barriers in the implementation or administration of the program?
- » Are there barriers preventing or impeding some participants from submitting or pursuing applications?

Deliverable: Process flow chart with write up as part of Phase II report

Figure 1-2. Colorado Energy Management Systems Program Process Flow Map



PROGRAM ASSESSMENT

Exploring key characteristics of program participants, projects, and project costs

Relevant research questions:

- » How many projects have been installed and what are the characteristics of these projects? Have applicants changed from the first to the second year of program?
- » What are total program/project costs to date? How do they differ by system ownership? Role of Federal tax credits?

Deliverables: Program assessment will be included as part of Phase II report

PHASE II IMPACT ASSESSMENT

» First-year gross impact assessment:

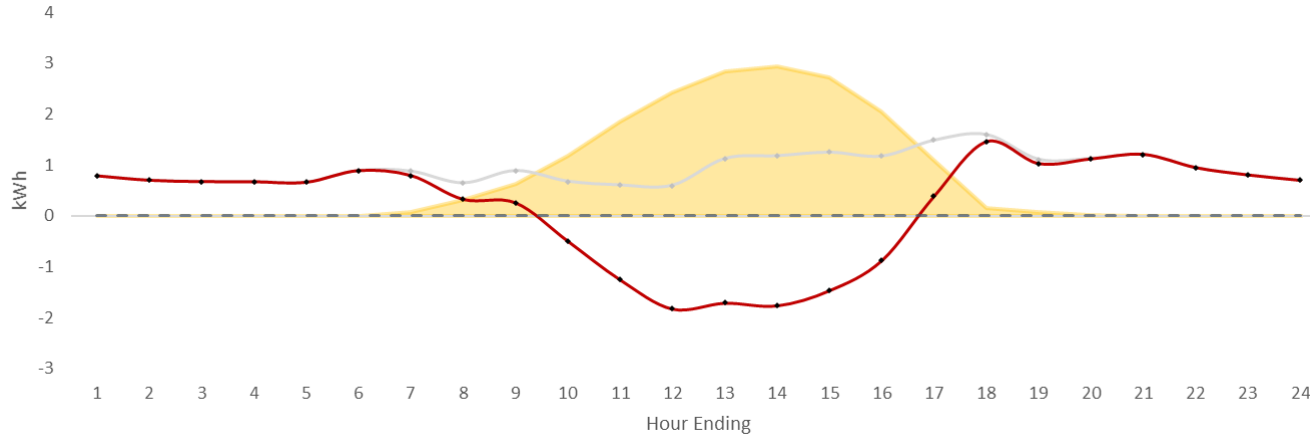
- Electrical load impacts (MW and MWh)
- Environmental impacts
- Economic impacts, including participant bill savings and CARE budgets reductions from SOMAH projects

» **As of August 31, 2020, no SOMAH projects have reached the incentive payment stage**

- Evaluation will rely on program application data to develop ex-ante estimates of program impacts

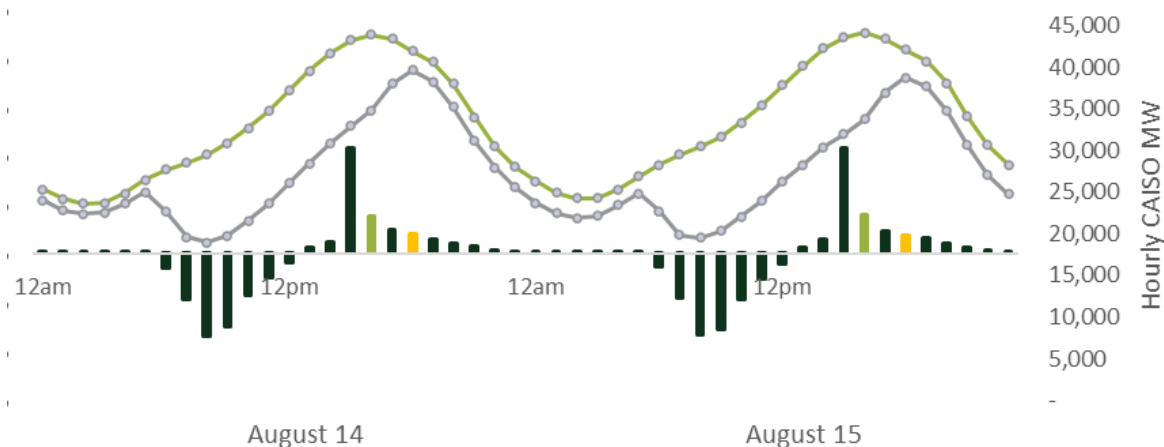
ELECTRICAL LOAD IMPACT ASSESSMENT

- » Develop estimates of typical year SOMAH project solar PV production based on the PV system characteristics as submitted in the application documents
 - Based on location, system size, tilt, azimuth, tracking type (if applicable), and module type



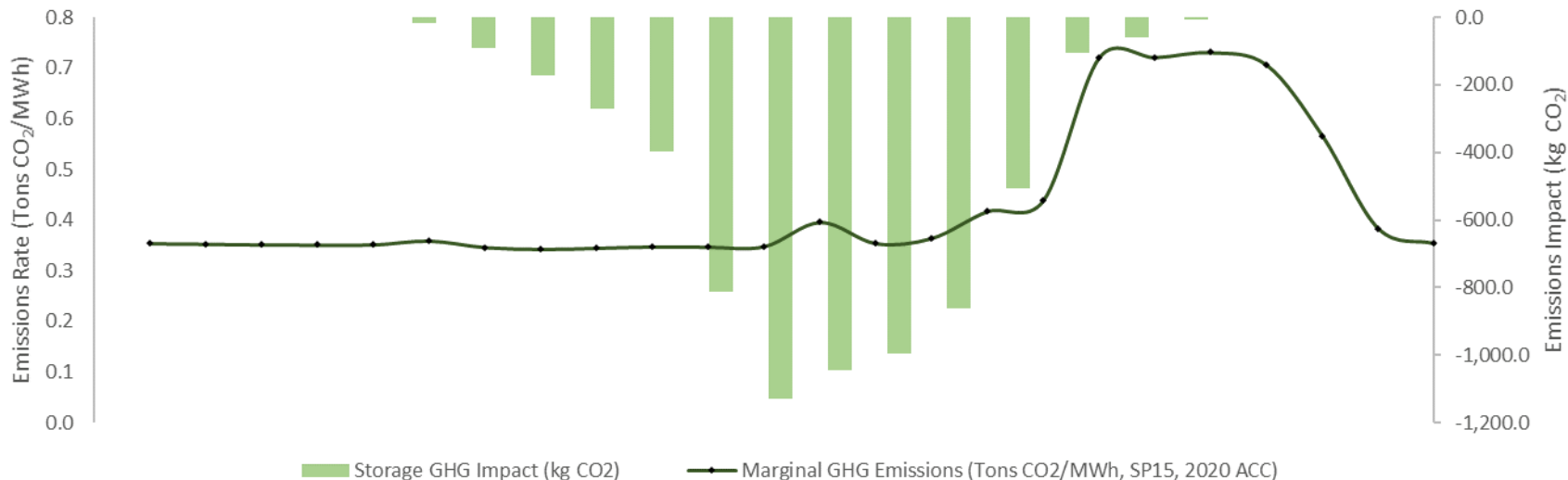
ELECTRICAL LOAD IMPACT ASSESSMENT (CON'T)

- » IOU and CAISO load data will be obtained for the CAISO OASIS website. We will use 2020 as the reference year to estimate peak demand impacts, GHG emission impacts, and avoided costs



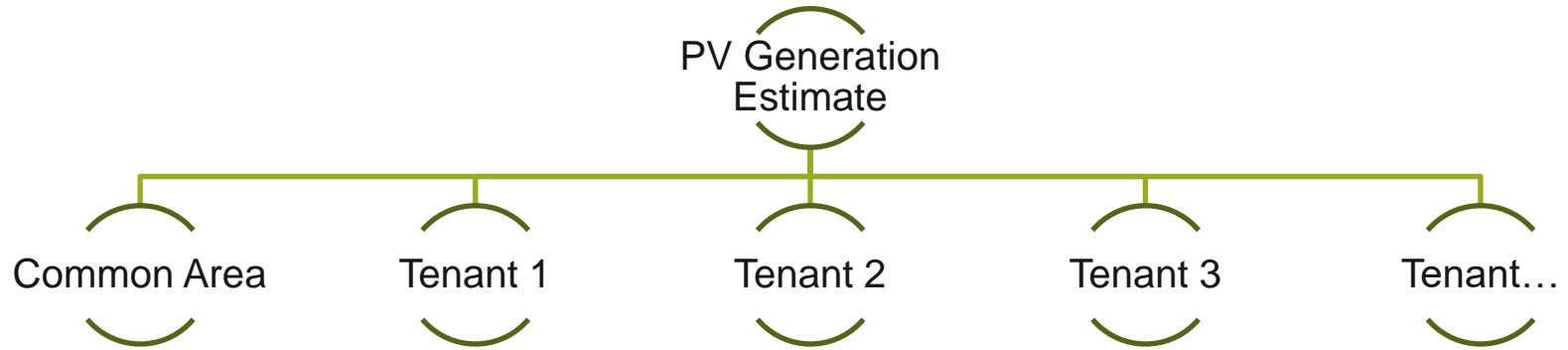
ENVIRONMENTAL IMPACT ASSESSMENT

» Quantify greenhouse gas impacts of PV generation based on marginal emissions rate



ECONOMIC IMPACT ASSESSMENT

- » Use tenant share allocations tracked by the SOMAH PA to allocate expected solar PV generation to tenants and common areas



OPEN DISCUSSION

**FEEDBACK
AND
QUESTIONS**

PHASE II TIMELINE

» **October – December 2020**

- Metric finalization - October
- Evaluability consulting – Ongoing
- Interviews – contractors, property owners – October/November
- Process Flow Chart development – November/December
- Participant billing data, Solar PV data preparation– December
- Program Participation Assessment – January
- Impact Assessment – January/February

» **January – March 2021** - Phase II reporting and public webinar



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PHASE II EVALUATION RESEARCH QUESTIONS

- » Which Phase I metrics are key to measure program's success in successive evaluations?
- » What barriers exist to successful implementation/administration of the program?
 - Is the program reaching the intended properties/customers?
 - Barriers to participation? Reasons for cancellation?
 - Is participation timeline reasonable/expected? What opportunities exist to expedite timeline?
- » How many projects have been installed and what are the characteristics of these projects? Have applicants changed from the first to the second year of program?
- » What are total program/project costs to date? How do they differ by system ownership? Role of Federal tax credits?
- » What are the Program's energy (MW and MWh), greenhouse gas (GHG), and economic (bill savings) impacts to date?