

SCE's 2018 Aliso Canyon Energy Storage 2 Request for Offers ("ACES 2 RFO") Bidders Conference

September 4, 2018

Skype Link (for the presentation only):

<https://meet.lync.com/edisonintl-sce/tamara.l.rodriguez/1SMTGM0V>

Call-in Information (Participants MUST dial in to receive audio):

Number: 800-857-9632

Participant Passcode: 9308122



Agenda

- RFO Overview (10 min)
 - Product and Eligibility Overview (15 min)
 - Offer Valuation (15 min)
 - Customer Composition (10 min)
 - RFO Website Overview (5 min)
 - Final Questions / Webinar Conclusion (15 min)
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- **A Q & A session will follow each section presentation. To ask a question, press *1 and wait for the prompt from the operator.**
 - **You may also submit a question by sending an email to: acesrfo@sce.com**

RFO Overview

Matt Lloyd

Origination - RFO Co-Lead

RFO Overview - Webinar Purpose

- In this Webinar, SCE will provide information to help potential bidders in understanding the need and purpose of the ACES 2 RFO, as well as understanding the RFO process and how to submit bids
- There is time allotted for Q&A after each section
- After the webinar, SCE will post this presentation and a recording of the webinar on the ACES 2 RFO website - <https://www.sce.com/acesrfo>
- This presentation is intended to be a summary level discussion of the information and requirements established in the ACES 2 RFO and does not include all of the detailed information that can be found in the documents posted to the ACES 2 RFO website
- To the extent that there are any inconsistencies between the information provided in this presentation and the information contained in the documents posted to the website, the information in the documents posted to the website will govern

RFO Overview – High Level Summary

- On October 14, 2017, Senate Bill 801 was signed into law, which directed SCE to solicit a minimum 20 MW of energy storage resources to help address electrical system operational limitations from reduced gas deliverability from the Aliso Canyon natural gas storage facility
- Both In-Front-of-Meter (IFOM) and Behind-the-Meter (BTM) Demand Response energy storage resources are eligible
 - Must be capable of providing a four-hour duration resource adequacy service and be dispatchable, in line with SB 801 requirements
- Projects can be located anywhere in SCE's service territory, south of Path 26, with "preferred locations"
 - Certain substations within the Moorpark Sub Area and Western LA Basin Sub Area

RFO Overview - RFO Structure

This RFO will employ a 2-step selection process:

- Offerors will submit initial prices prior to initial offer submittal deadline
- SCE will evaluate, shortlist, and negotiate contract terms with the shortlisted offers
 - Will employ its Least-Cost, Best-Fit (“LCBF”) valuation methodology
- Shortlisted offerors who have successfully negotiated contracts will submit last, best, and final prices/offers
 - Again, SCE will employ its LCBF valuation methodology
 - SCE will make final selection decisions from these final offers

RFO Overview - Independent Evaluator

- Merrimack Energy is the Independent Evaluator (IE) for this solicitation
 - The key contacts are Wayne Oliver (waynejoliver26@gmail.com) and Keith Oliver (keith.oliver@merrimackenergy.com)
- Role of the IE is to ensure fair and equal treatment of all bidders by:
 - Monitoring SCE's solicitation and negotiation processes
 - Monitoring SCE's valuation methodologies and selection processes
- The IE is privy to all Offers, invited to participate in all negotiations and must be copied on all correspondence between SCE and bidders

Offerors must include IE on email correspondence to SCE

RFO Overview - RFO Schedule*

Date	RFO Event
Friday, August 31, 2018	RFO Launch
Tuesday, September 4, 2018	Bidders' Conference
Thursday, September 27, 2018 (12:00 p.m.)	Offeror's Initial Offer Submittal Deadline to SCE
Tuesday, November 13, 2018	Target Date for SCE to issue Shortlist Notification
Friday, December 14, 2018 (12:00 p.m.)	Commercial Lockdown Deadline
Friday, December 21, 2018	PSA Negotiation Period Ends
Friday, January 18, 2019 (12:00 p.m.)	Offerors' Final Price Submittal Deadline
Monday, February 11, 2019	SCE's Target Date for Final Selection Notification
Monday, February 18, 2019	Deadline for Awarded Offerors to Execute PSAs
Tuesday, March 26, 2019	Target Date for Advice Letter Filing

*Dates and Milestones are subject to change

Product and Eligibility Overview

Gene Lee

Origination - RFO Co-Lead

General Project Eligibility

- Open to the following energy storage product types:
 - IFOM Energy Storage (RA Only)
 - IFOM Energy Storage (RA with Put)
 - BTM Demand Response
- Must be new (not existing nor repowered)
- Must be capable of providing a four-hour duration dispatch, available between 4 PM to 9 PM (*HE17 to HE21*), and accepting and executing dispatch commands
- Project size must be at least 1 MW
- Delivery start date by 06/01/2021 (*Includes attaining Net Qualifying Capacity for IFOM projects*)
- Preference for Offers that do not exceed a 10 year term. For Offers with a contract term greater than 10 years, must also provide a mutually exclusive offer with a 10 year or less term
- Must be proven, commercialized technology
- Offerors must be experienced developers

Location Eligibility

- Located anywhere in SCE's service territory, south of Path 26
- Preference for projects located in Disadvantaged Communities
- Preference for projects in "preferred locations" that enhance both gas system and electrical system performance and reliability
 - Moorpark Sub Area
 - Goleta 220/66 kV
 - Santa Clara 220/66 kV
 - Western Los Angeles Basin Sub Area
 - El Nido 220/66 kV
 - La Cienega 220/66 kV
 - La Fresa 220/66 kV
 - Laguna Bell 220/66 kV
 - Villa Park 220/66 kV
 - Projects that are located in the Moorpark Sub Area will receive a greater qualitative benefit because they are able to meet the local capacity requirements (LCR) need identified by CAISO
 - Must achieve delivery start date of 03/01/2021 to meet the LCR need in that area and receive an associated qualitative benefit

Location Eligibility (cont'd.)

- Offerors who previously submitted energy storage-based Offers for the 2018 Moorpark Local Capacity Requirements/Goleta Resiliency Request for Proposals are strongly encouraged to also submit Offers for the 2018 ACES 2 RFO
 - Must indicate whether Offers are mutually exclusive of each other between the two solicitations
 - If Offers submitted into the two solicitations have different prices for the same project, Offerors are required to substantiate the difference in pricing
 - Offers **CANNOT** be submitted mutually inclusive of each other across solicitations

Interconnection Eligibility

- IFOM projects must be able to demonstrate that they have participated in the interconnection study process. Fulfillment of this requirement can be achieved by submitting to SCE evidence which includes one of the following:
 - a) Fast Track Review report demonstrating the project has “passed” the respective Initial Review Fast Track screens;
 - b) Minimum of a completed Phase I Interconnection Study Report in the cluster study process (for projects in Queue Cluster 10 or earlier) or a System Impact Study Report in the independent study or detailed study process;
 - c) Signed interconnection agreement for Full Capacity Deliverability Status, or for Energy Only Deliverability Status with the demonstration that it has entered into a request for Full Capacity Deliverability Status into one of the deliverability assessment processes described in (a) above; **or**
 - d) Has entered into the Queue Cluster 11 interconnection process and can provide proof of a complete and active QC11 interconnection request from SCE and/or CAISO
- An interconnection request with Full Capacity Deliverability Status is a requirement of this RFO
- Interconnection studies or interconnection agreement must support the project’s forecasted COD

Offer Valuation

Michael Freeman

Energy Procurement Planning & Valuation

Valuation - Introduction

- SCE incorporates “Least-Cost, Best-Fit” principles by accounting for quantifiable attributes explicitly in the valuation process (“Least-Cost”) while qualitative attributes are accounted for implicitly in the selection process (“Best-Fit”)
- SCE will estimate the Net Present Value (NPV) of each offer by calculating discounted value of contract benefits minus the costs required to receive those benefits over the contract delivery period
- The selection process employs the NPV metric described above and SCE will run a rank-ordering or an optimization (along with other qualitative considerations) to develop possible selection sets

Quantitative Valuation Components

- Methodology
 - SCE will develop price forecasts (P) for various market attributes such as capacity and energy. SCE will also calculate the forecasted quantity (Q) of the respective attribute provided by an offer over the contract delivery period. Then, the benefits stream will be estimated by $P \times Q$, which is netted against the costs
 - Benefits are described on slides 16 & 17; cost are described on slide 18

Component	Definition	P	Q
Resource Adequacy Value	Value of the RA capacity attribute that can be counted towards SCE's RA compliance requirement	<u>RA Price Forecast</u> Based on SCE's assessment of RA market prices	SCE considers its net short RA position while determining RA quantity to ascribe to the offers Based on CPUC definition of RA eligibility requirements for storage resources
Energy Value	Market value of delivered energy or energy savings	<u>Energy Price Forecast</u> Based on forward market traded prices from broker quotes in the short run blended with fundamental prices from unit commitment dispatch model in the long run	For dispatchable resources, SCE uses its dispatch models to determine the most economic dispatch of the resource given the market conditions and resource's operating characteristics and constraints <i>Note: be aware that a low Energy Rate bid in the Demand Response product may result in the project getting dispatched frequently</i>

Quantitative Valuation Components

Component	Definition	P	Q
AS/RT Value	Market value of Ancillary Services (AS) capacity and Real Time (RT) energy delivery	<u>AS/RT price forecast</u> Based on statistical regression model and fundamental model Includes reg-up, reg-down, spin, non-spin and real-time energy prices	Based on offer's AS capacity and SCE's dispatch model that performs co-optimization of energy and AS
Deferral Value	If offers are determined to defer distribution upgrade need, offers will receive the deferred cost as an implicit benefit	Distribution upgrade project cost estimate and deferral need will be used to estimate normalized dollar value	Offer's delivery time period alignment with deferral need time period of the given substation/circuit

Quantitative Valuation Components

Component	Definition	Methodology
Contract Payments	Includes capacity payments, energy payments	Estimated from contract capacity rate and capacity, and/or energy rate and projected delivery
T&D Upgrade Cost	Transmission & Distribution network upgrade costs that are reimbursed by SCE, or any Transmission Provider under the jurisdiction of the CAISO	SCE uses Offeror's supplied aggregate network upgrade cost, and annualizes them by using SCE's discount rate and taxes over the expected life of the asset
Debt Equivalence Cost	It is the term used by credit rating agencies to describe the fixed financial obligation resulting from long-term purchased power contracts	SCE uses the Standard & Poor's methodology along with CPUC prescribed 20% risk factor, to estimate the financial obligation resulting from the contracts

Network Upgrades Cost Information

- In the IFOM energy storage Offer Workbook, Offerors are asked to enter their 'Total Reimbursable Network Upgrade Costs'
 - These costs *may* include reliability network upgrade costs, area delivery network upgrade costs, and local delivery network upgrade costs
 - Offerors instructed to base this total dollar amount on the latest interconnection study applicable to the Project
 - If no study exists, then the amount should be based on a qualified interconnection specialist's/consultant's estimate
 - The following are not reimbursable by SCE and should not be included:
 - Distribution Provider's Interconnection Facilities
 - Distribution Upgrades

Qualitative Valuation Components

- Project location in a Disadvantaged Community
- Project location at a Preferred Substation
- Initial delivery date
- Contract term length
- Permitting and interconnection
- Pre-development & development milestones
- Portfolio fit of energy, capacity, & term
- Offeror concentration
- Technology concentration

Customer Composition

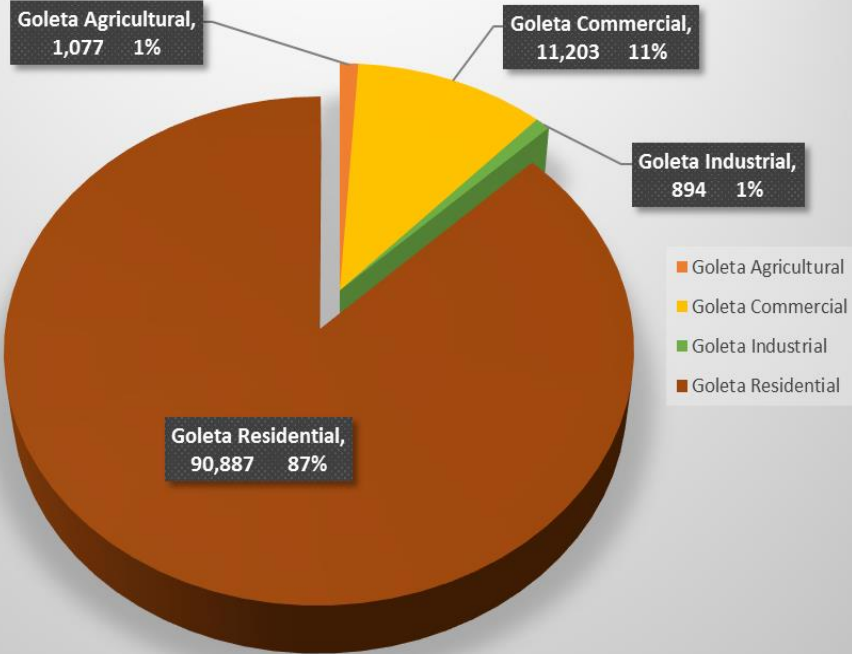
Janice Wang

Customer Service

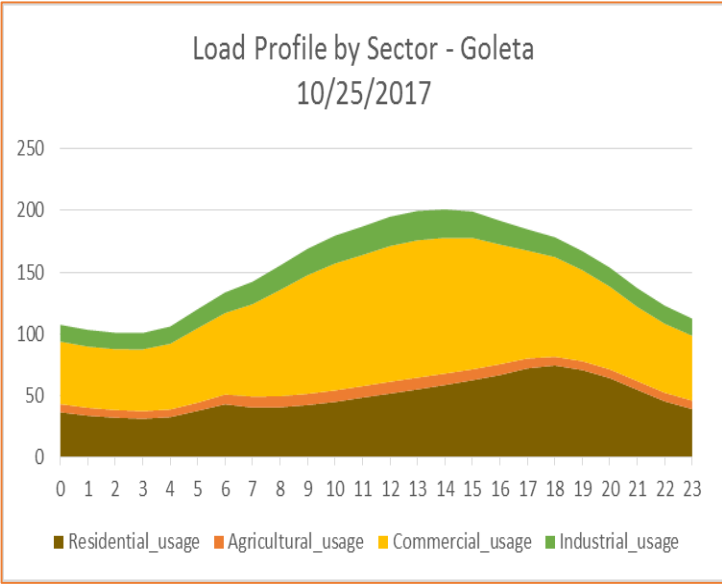
Moorpark Sub Area

Goleta Substation

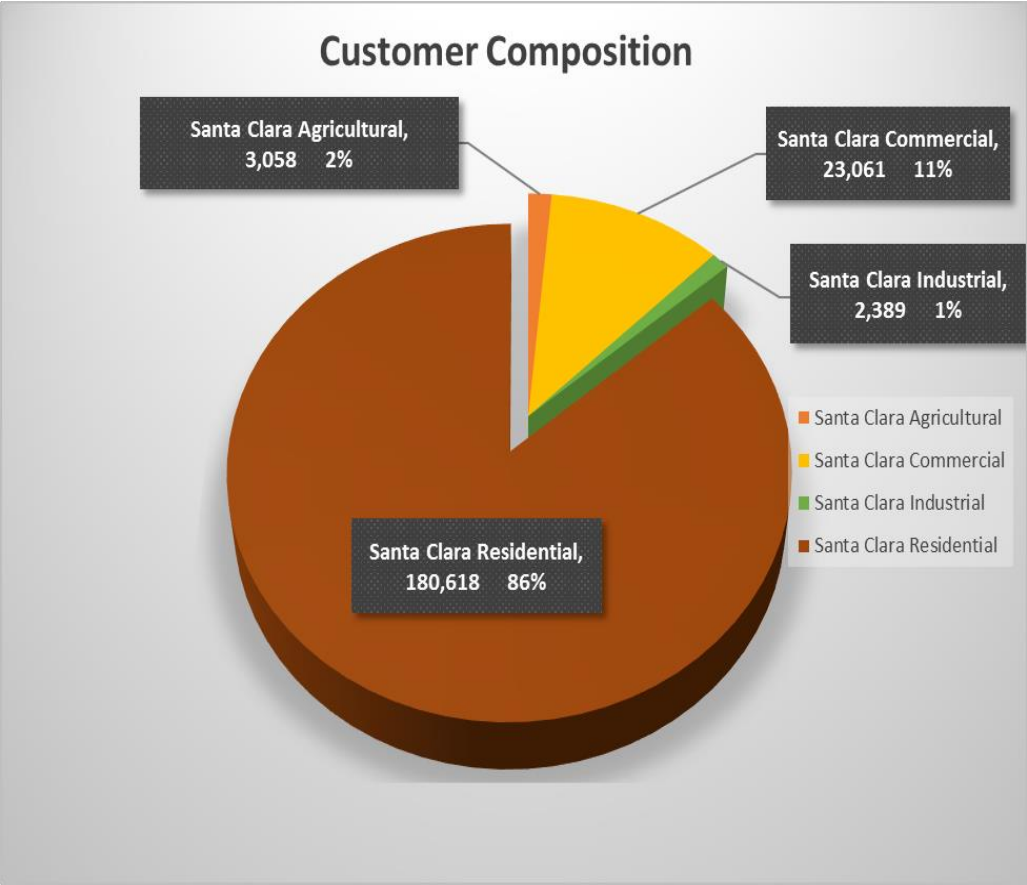
Customer Composition



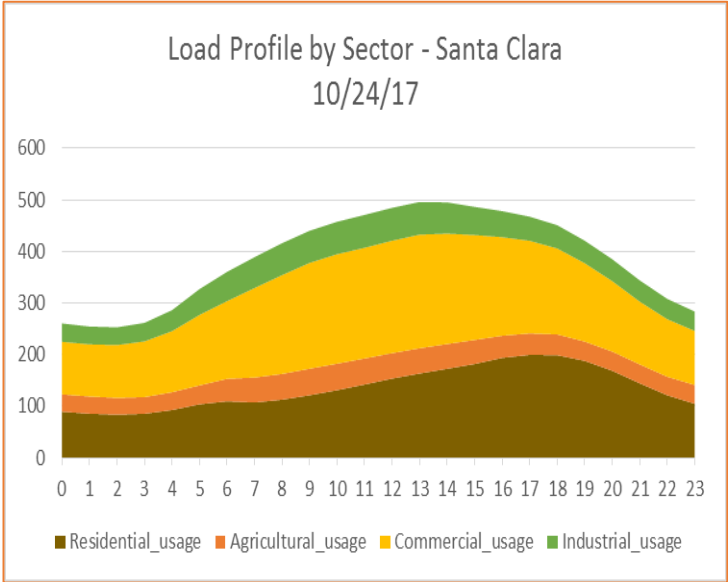
Goleta		
Peak day	Hour	Peak Load (MW)
25-Oct-17	14:00:00	201



Santa Clara Substation



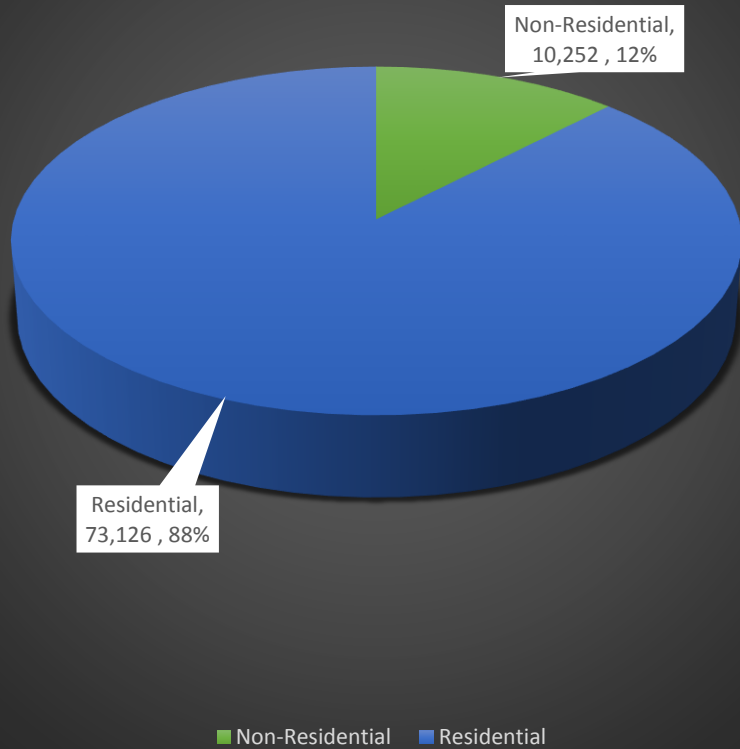
Santa Clara		
Peak day	Hour	Peak Load (MW)
24-Oct-17	14:00:00	496



Western Los Angeles Basin Sub Area

El Nido Substation

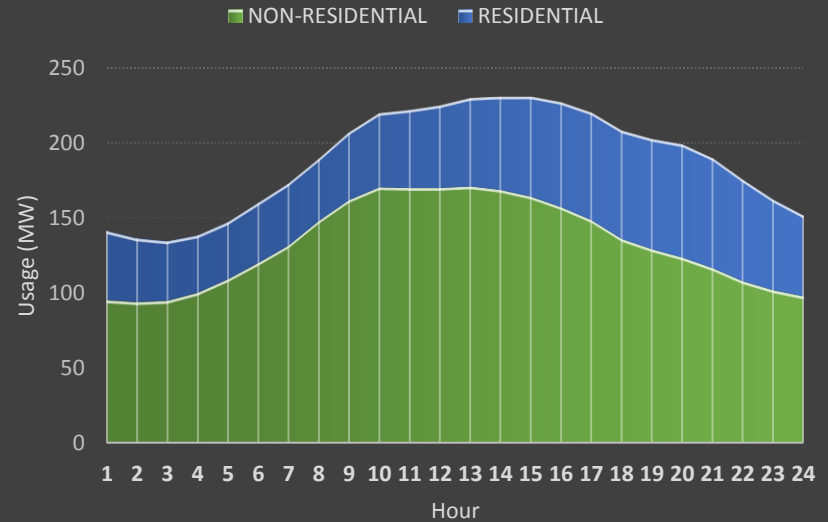
Customer Composition



El Nido

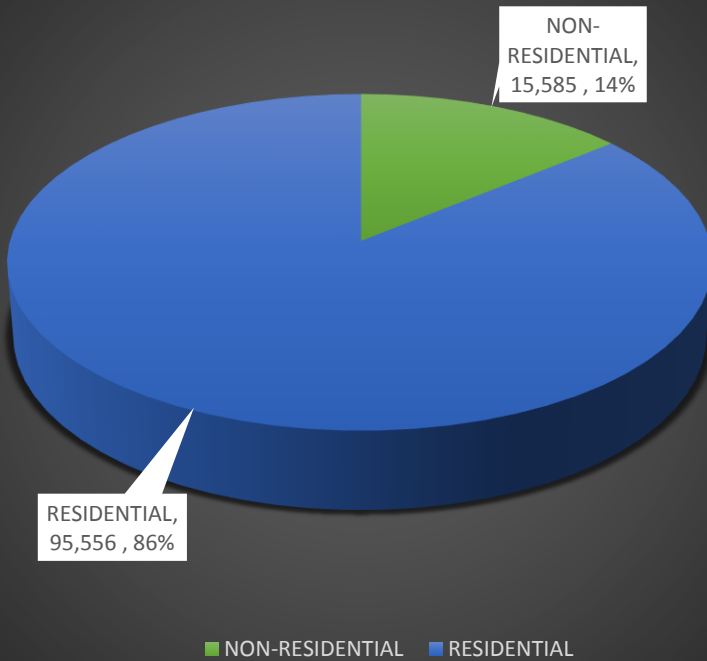
Peak Day	HE	Peak Load (MW)
24-Oct-17	15:00:00	231

Load Profile by Sector - El Nido



La Cienega Substation

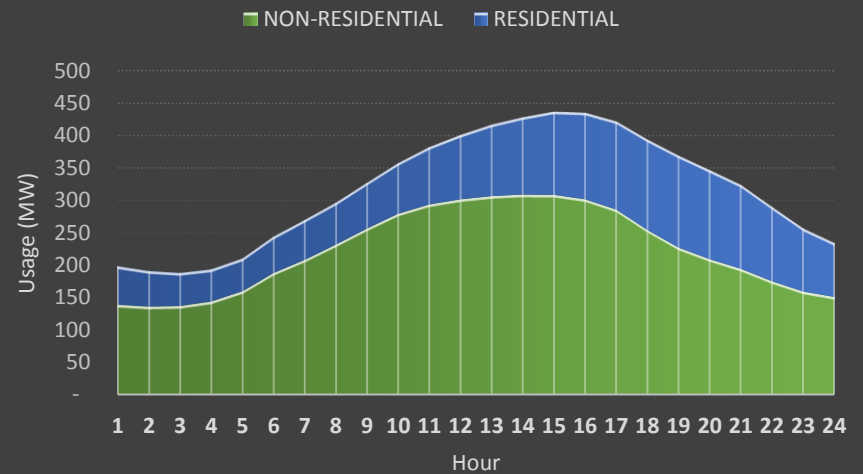
Customer Composition



La Cienega

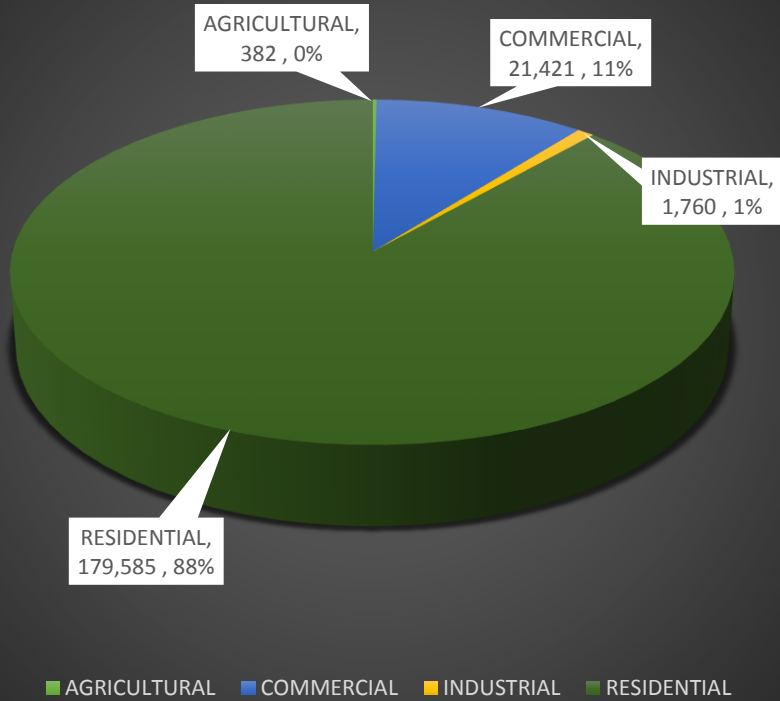
Peak Day	HE	Peak Load (MW)
24-Oct-17	15:00:00	436

Load Profile by Sector - La Cienega



La Fresa Substation

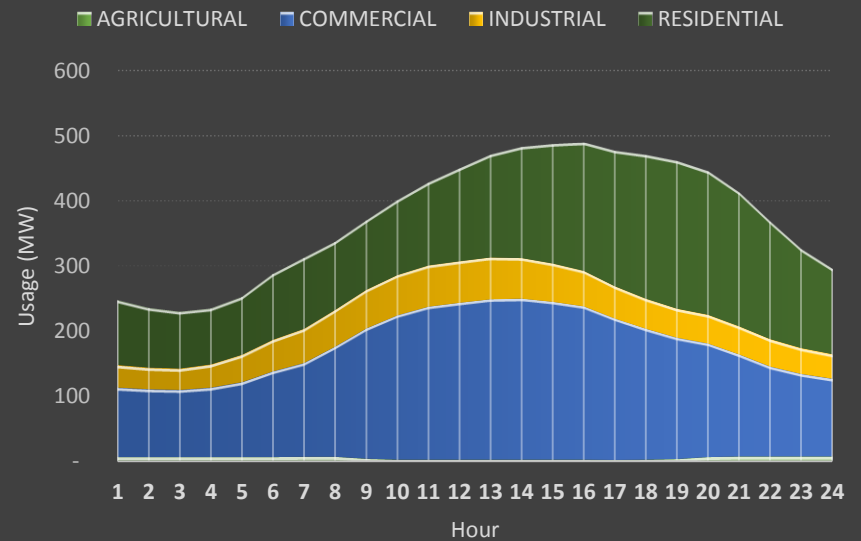
Customer Composition



La Fresa

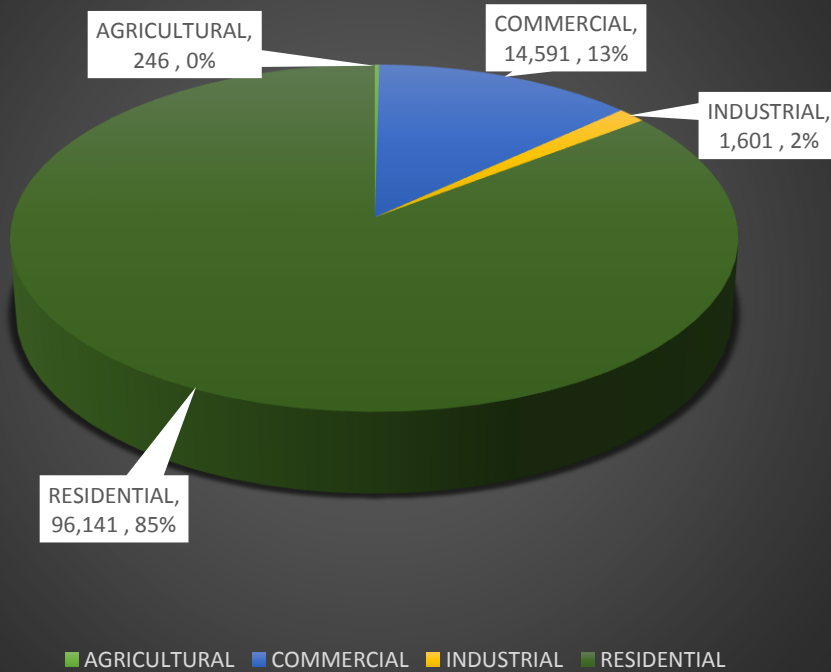
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24-Oct-17	16:00:00	489

Load Profile by Sector - La Fresa



Laguna Bell Substation

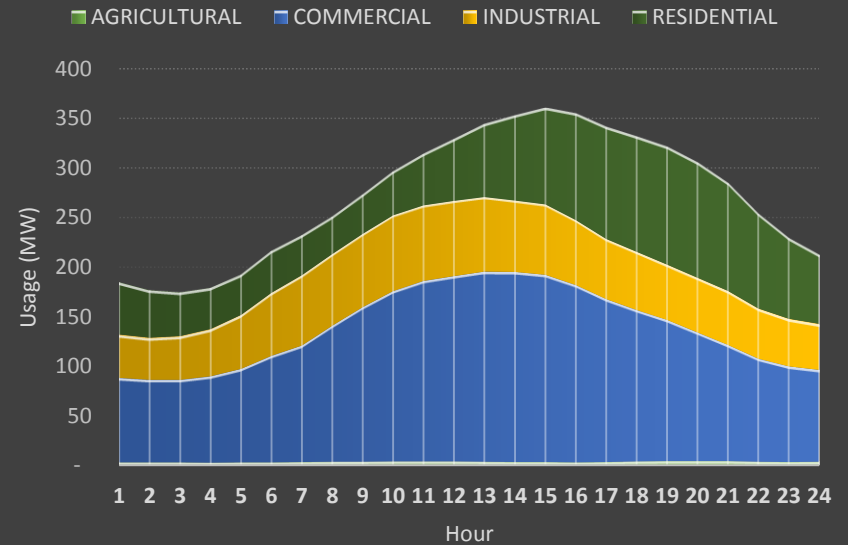
Customer Composition



Laguna Bell

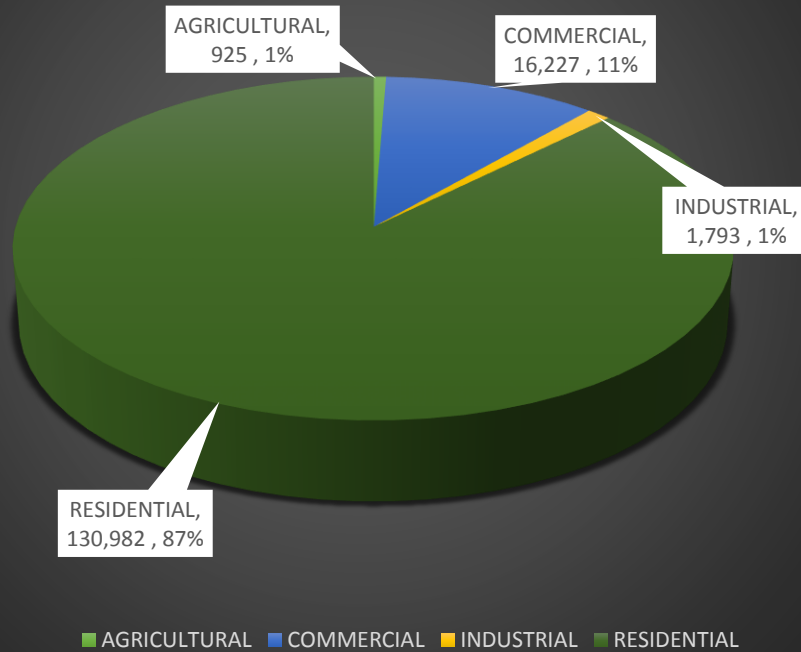
Peak Day	HE	Peak Load (MW)
24-Oct-17	15:00:00	360

Load Profile by Sector - Laguna Bell



Villa Park Substation

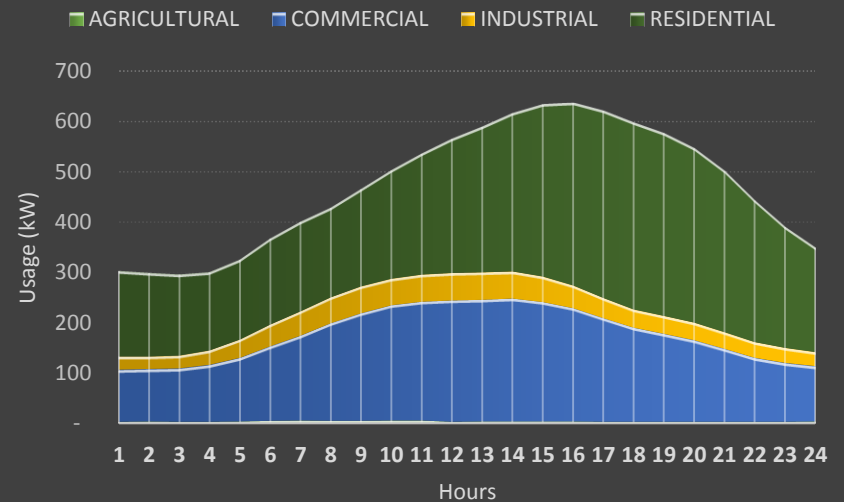
Customer Composition



Villa Park

Peak Day	HE	Peak Load (MW)
24-Oct-17	16:00:00	636

Load Profile by Sector - Villa Park



RFO Website and Offer Submission

Matt Lloyd

Origination - RFO Co-Lead

RFO Website Overview

- The RFO Website is located at www.sce.com/ACESRFO, and is where all documents are available for download, including:
 - RFO Instructions
 - Product Pro Formas
 - All other required Offer submittal materials
- The primary communication method for asking questions and submitting Offer materials will be via email at acesrfo@sce.com
 - Respondents must copy the IE at waynejoliver26@gmail.com and keith.oliver@merrimackenergy.com on all correspondence
- A complete and conforming Offer package must consist of:
 - A completely filled-out Bidder Information Workbook
 - A completely filled-out Offer Workbook(s)
 - Seller Proposal Letter
 - Non-Disclosure Agreement
 - PSA Term Sheet (if applicable)
 - Developer Experience Attestation
 - MUA Services Questionnaire
 - Mutual Exclusivity-Inclusivity Template
 - Consent for Release of Interconnection-Related Information (*for IFOM projects*)
 - Deemed Complete Interconnection Application -**or**- Latest Interconnection Study (*for IFOM projects*)

Final Questions / Conclude Webinar
Thank you!