

CALSEIA ANNUAL REPORT 2016



2016

SHIFTING BATTLE LINES

From the historic razor-thin 3-2 CPUC vote to save Net Energy Metering in January to the proposed Time-of-Use rate structures that threaten to undermine the economics of solar, 2016 ushered in shifting battle lines for the California solar energy market that will define 2017 and beyond.

This shift in approach to slowing down the solar market from NEM to rate structures makes the work of CALSEIA ever more important – not only our work to represent the industry in the most critical decision-making forums in the state, but our ability to quickly turn around and inform you about these changes.

Further, the need to remove barriers and reduce soft costs are as important as ever. Through our permitting hotline as well as our interconnection teamwork at the CPUC, CALSEIA worked throughout the year to smooth the path forward and get our contractors out in the field building the state's clean energy future.

Then comes the work to build the opportunities of the future, which includes paving the way for storage to become mainstream and getting value from the capabilities of smart inverters.

Winning individual battles is great. But there is still a war of words, ideas, and policies raging in California and nothing should be taken for granted. We are your public voice working to ensure that California's solar policies remain strong, that you remain informed, and that solar energy is increasingly relied upon as the centerpiece of a modern energy system.

On behalf of the CALSEIA Board of Directors and staff, we thank you for your ongoing support.

Sincerely,

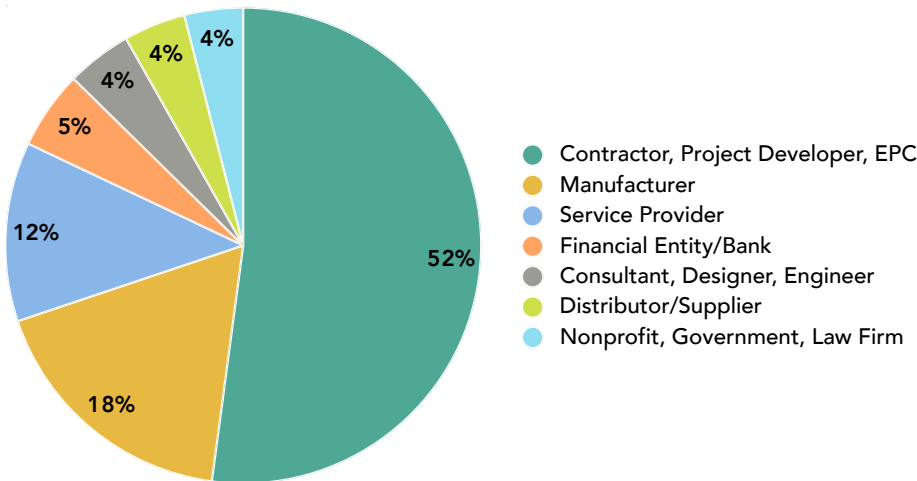


Ed Murray
Board President



Bernadette Del Chiaro
Executive Director

OUR MEMBERS



2016 Members by Business Type

180 Solar Power
 4 S.T.E.L. Engineering, Inc.
 4th Day Energy
 A-C Electric Company
 Above All Construction Inc.
 Absolutely Solar, Inc.
 ACR Solar International, Corp.
 Adara Power
 Adroit Energy, Inc.
 Advanced Solar Solutions Inc.
 Aerocompact
 AET Solar
 Aeterna Energy, LLC
 Affordable Solar Installation
 AgEnergy Systems
 Air Sun Solar
 Albion Power Company, Inc.
 aleo solar
 Alive Industries
 All Terrain Solar
 All Valley Solar Inc.
 Allana Buick & Bers, Inc.
 AllEarth Renewables
 Alpha Energy Management Inc.
 AlsoEnergy
 Alternative Energy Systems (AES Solar)
 Altsys Solar Inc.
 Ameco Solar Inc
 American Renewable Capital, Inc.
 Ampion
 Anca Solar Inc
 Antonioli Constructuion
 Apex Natural Renewable Generation, LLC
 APG Solar

Applied Solar Energy Solutions
 Apricus, Inc
 APsystems
 Aquatherm Industries, Inc.
 Arcadia Solar
 Arise Solar
 Arraycon
 ATE Solar Corp
 Aurora Solar
 Avalon Battery
 AWS Electrical & Solar Inc.
 Axis Solar Design
 Aztec Solar
 B & B Solar
 Baker Electric Solar, Inc.
 BannerSolar
 Barrier Solar Power Systems
 Battery Systems Inc.
 BayWa r.e. Solar Systems LLC
 Bland Solar and Air
 BlueFlame Energy Finance
 BMC Solar
 Booth Construction
 Bosch
 Boviet Solar USA
 Bozzuto & Company Insurance Svcs.
 Bright Harvest, Inc
 Bright Power
 BrightCurrent
 Brightline Defense Project
 Brighton Energy
 Brooks Engineering
 BTA Solar
 Burnham Energy Inc.

BWB Solar
 Byers Solar
 Caiman Engineering Inc.
 CalCom Solar
 California Solar Electric Company
 California Solar Electric Systems, Inc.
 California Solar Systems, Inc.
 California Solar Thermal
 Capital City Solar
 CED Greentech
 Cenergy Power
 Center for Climate Protection
 Centroplan USA LLC
 Century Roof & Solar
 Chaolysti
 Chico Electric
 Chico Solar Works
 Chilicon Power
 Chint Power Systems
 Ciel Et Terre USA
 Citigreen, Inc.
 CivicSolar
 Clean Energy of America Group, Inc.
 Clean Energy Solutions of CA
 Clean Energy Storage Inc.
 Clean Solar
 CleanFund Commercial PACE Capital
 CleanTech Energy Solutions, Inc.
 Cleantech Law Partners
 Clearline Technologies
 Coastal Constructors, Inc.
 Cobalt Power Systems
 CohnReznick LLP
 COLOSSUN USA Corp.
 Community College League of California
 Conergy
 Conserval Systems (SolarWall)
 Cosmic Solar
 Center for Sustainable Energy
 Custom Power Solar
 Dahlia Greer Public Relations
 Darfon America Corp.
 Davis Wright Tremaine
 Day One Solar
 Del Sol NRG, Inc
 Diablo Solar Services
 Dividend Solar
 DJI
 Draker
 DRH Solar and Electric
 Eco Foundation Systems Inc.
 Ecolilibrium Solar
 EcoVolt Finance LLC
 Eltropy Inc
 ENACT Systems Inc.
 Enegevity
 Energx Controls
 Energy Services
 Energy Toolbase
 EnergySage
 EnergyStars Construction
 Enovative Construction
 Enphase Energy Inc.
 EnterSolar
 Environmental Solar Design
 Equisolar
 ES Electrical Construction Inc.
 Estriatus Law, PC
 ET Solar Inc
 Everest Solar Systems
 Everyday Energy
 FAFCO
 Feather River Solar Electric
 Fidelity Home Energy

2016 Program Highlights



FIGHTING FOR NET METERING

The CPUC decision came in January, but the debate over the final tariff language continued through June. The utilities attempted to expand the assessment of non-bypassable charges, limit NEM grandfathering, and add departing load charges for some customers. CALSEIA fought for a strong NEM decision and then pivoted to block the implementation moves by the IOUs.

TIME-OF-SANITY

TOU rate structure took center stage as the battlefield for solar shifted away from NEM. Utilities and Cal-ISO proposed to move summer peak to the evening hours with no grandfathering. CALSEIA pushed back with load analysis and by bringing real stories of impacts on customers to the halls of the CPUC.

STORAGE

We continued stepping up our work on energy storage in 2016. The SGIP solicitation in February did not go smoothly and took months to sort out. Then the CPUC considered changes to the incentive structure. We successfully got 75% of the funds

dedicated to storage and made money that had been reserved for future years available sooner. We also added a storage company to the CALSEIA Board of Directors and put in motion plans to hire a storage-dedicated policy advocate to the CALSEIA team.

THERMAL

The massive leak at Aliso Canyon spurred state action to promote solar thermal technologies given their large potential to reduce natural gas use in the state. In fact, installing solar water heating on just 7% of the multi-family buildings in LA offsets the annual natural gas demand for withdrawals from Aliso Canyon for buildings in LA. At our encouragement, the state boosted CSI-Thermal rebates in SoCalGas territory, and we worked with SoCalGas to ensure the program worked for single-family homeowners. We also came excruciatingly close to passing a \$250 million statewide boost to the program for the next five years.

PERMITTING & SOFT COST REDUCTIONS

Soft costs account for as much as 64% of solar's total installed costs, according to the DOE. We

2016 Program Highlights

increased outreach efforts to help jurisdictions across the state implement AB 2188, the law to streamline permitting and make solar cheaper and easier for everyone. In addition, through our permitting hotline, we addressed at least one member permitting concern per week. CALSEIA also pressed for official national and California code clarifications, saving thousands of dollars for every installation that now avoids unnecessary center-fed panel upgrades.

SOLAR FOR ALL

We continued our efforts to expand access to solar for all Californians. We outlined our vision for how to implement AB 693, a new solar rebate program for tenants of low-income multifamily housing projects, and continued to advocate for the diversification of the market under NEM 2.0.

MUNI NEM

All of our efforts to protect NEM at the CPUC unfortunately have no impact on the state's 40+ publicly owned utilities. Imperial Irrigation District (IID), for example, pulled the plug on NEM in February stranding 1200+ solar customers, many with solar on their roofs awaiting interconnection. CALSEIA fought tooth and nail and won a concession, negotiated by the state legislature, forcing IID to give full NEM status to the vast majority of these solar customers.

GRID MODERNIZATION

Issues related to grid modernization consumed a lot of brainpower. Utilities are improving their analysis of the hosting capacity of the grid, which will lead to a better interconnection process. An overhaul of the method for measuring the grid

benefits from solar and storage is also underway. This will lead to development opportunities and will form the backbone of NEM-3.

NEM-A BILLING

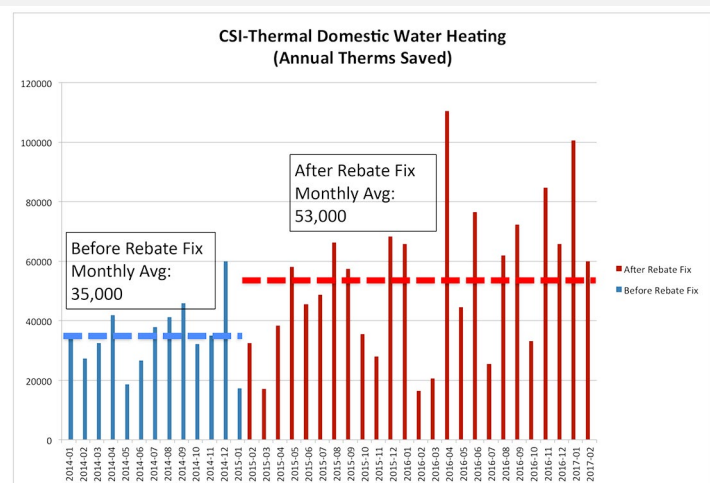
NEM-Aggregation customers have been frustrated by bills that are late, incorrect, and impossible to understand. CALSEIA has pushed hard to get utilities to increase staff resources and improve the billing format so that a horrible customer experience doesn't poison the market for solar.

INTERCONNECTION

CALSEIA pressed utilities to stop requiring unnecessary grid upgrades when interconnecting large solar systems and won approval for access to better data on local grid conditions that helps estimate interconnection costs.

CSI-THERMAL DOMESTIC WATER HEATING

Thanks to CALSEIA's efforts to set the CSI Thermal program's rebates at levels that work for the chronically low natural gas prices, installations have increased with larger monthly natural gas reductions since rebates were fixed in February of 2015.



CALSEIA

LEADERSHIP

Officers

President

Ed Murray, Aztec Solar

Vice President

Jeanine Cotter, Luminalt

Treasurer

Sanjay Ranchod, SolarCity

Secretary

Ben Airth, Center for Sustainable Energy

Board Members

John Berdner, Enphase

Allison Duffy, Yaskawa - Solectria

Gary Gerber, Sun Light & Power

Gina Heng, Mitsubishi Electric

Cathleen Monahan, GRID Alternatives

Les Nelson, IAPMO

Norm Nielsen, Chico Electric

Pat Redgate, AMECO

Rick Reed, SunEarth

Jeff Spies, Quick Mount PV

Walker Wright, Green Charge Networks



REGIONAL CHAPTERS

Thanks to our regional chapter leaders

Tara Kelly, Sullivan Solar Power - San Diego

Martin Learn, Home Energy Systems - San Diego

Eddie Price, Grid Alternatives - San Diego

Deep Patel, GigaWatt - Los Angeles

Brooke Behuin, Mitsubishi Electric - Los Angeles

Jack Ramsey, Altsys Solar - Central Valley

Jeff Brown, Highlands Solar - Central Valley

Rachel Van Wert Bird, Leadership for a Clean Economy - Bay Area

Randy Zechman, Clean Solar - Bay Area

Joe Roche, SunPower - Bay Area

Jeff Mathias, Synergy Solar - North Bay

Peter Renfro, Westcoast Solar Energy - North Bay

Becca Russell, Grid Alternatives - Sacramento

Ed Ayala, Eco Foundations Systems - Sacramento

Kristen Weingart, PROINSO - Sacramento

COMMITTEES

PERMITTING

Chair: Allen Fields (Sungevity)

CODES & STANDARDS

Chair: Jeff Spies (Quick Mount PV)

THERMAL

Chair: Les Nelson (IAPMO)

HEALTH & SAFETY

Chair: Robin Repass (SolarCity)

LEGISLATIVE & REGULATORY POLICY

Chair: Ben Airth (CSE)

STORAGE

Chair: Andy Schwartz (SolarCity)

RATES

Chair: Marc Kolb (SolarCity)

COMMUNITY CHOICE AGGREGATION

Chair: Ryan Carney (CSE)

MUNI NEM COMMITTEE

Chair: Gina Goodhill Rosen (SolarCity)

CONSUMER PROTECTION

Chair: Gary Gerber (Sun Light & Power)

SMART GRID

Chair: Brad Heavner (staff)

INTERCONNECTION

Chair: Andrew Hoffman (CalCom Solar)

BOARD ELECTIONS

Chair: Ed Murray (Aztec Solar)

ETHICS

Chair: Ed Murray (Aztec Solar)

EVENTS

Chair: Ed Murray (Aztec Solar)

MEMBERSHIP

Chair: Jeanine Cotter (Luminalt)

REGIONAL CHAPTERS

Chair: Carter Lavin (staff)

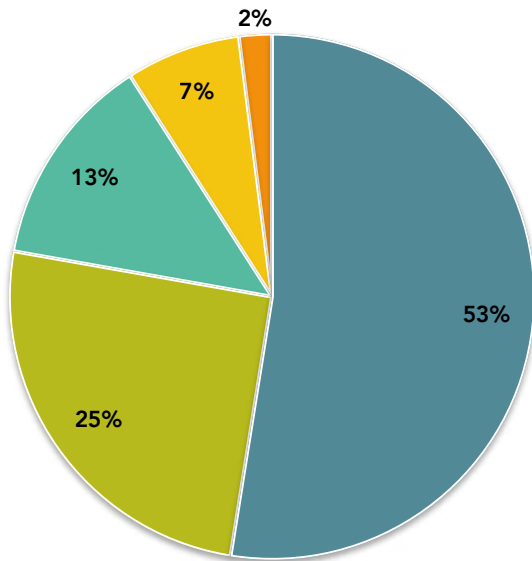
CHAPTER UPDATES

In 2016 the regional chapters grew significantly and the torch was passed to a new generation of leaders. Collectively, the chapters hosted over 24 events across California with more than 500 attendees. CALSEIA members gathered for chapter events in Petaluma, Santa Rosa, Sacramento, Rocklin, Vallejo, San Francisco, Oakland, San Jose, Fresno, Tulare, Los Angeles, Cypress, Irvine, and San Diego. Chapter meetings covered a wide range of topics including selling energy storage, CCAs, hiring and training best practices, high voltage system design, net metering aggregation, and permitting.



Bay Area Chapter Meeting with the Mayor of San Jose

Member Resources



2016 REVENUE SOURCES

- Membership Dues
- Intersolar
- Other Events
- Grants
- Special Campaigns/Other

MEMBER EDUCATION

In addition to CALSEIA's work to advance pro-solar policy, CALSEIA also works to make policy accessible and understandable to our members. To keep members up-to-date with what's going on with California solar policy and events, the organization sent out 51 weekly updates and an additional 135 informational emails. CALSEIA's members received action alerts on NEM fights throughout the state, opportunities to meet with key elected officials, updates on the NEM policy changes every step of the way, and numerous special promos and invitations to over a dozen special events.

51 weekly newsletter updates

135 informational emails

13 fact sheets

9 policy education webinars

In 2016, CALSEIA created 13 fact sheets on everything from how to calculate non-bypassable charges to rule 21 dispute process. We also hosted nine policy education webinars and set up NEM status trackers for municipal utilities, PG&E and SCE. Members can download these resources for free from CALSEIA's website.



2016 EVENTS

In 2016, we organized several events throughout the state to support business-to-business networking while also providing CALSEIA with much needed resources to keep the California market growing. From huge parties like Summerfest at Intersolar to intimate events like the holiday parties and golf tournaments, over 3,000 business professionals joined in the fun.

A special thanks to Intersolar for outstanding support of CALSEIA and California's solar market



2016 Members (con't)

Folsom Labs
Fortune Energy
Fresco Solar
Fronius USA
Fusion Power Design, LLC
GAF
GCI Solar, LLC.
Geli
GetTheReferral.com
GigaWatt, Inc.
Gold Electric Inc.
Golden Gate Power
Golden West Energy
GoSolarPros
Graybar
Green Charge Networks
Green Technical Education and Employment
GreenLancer
Greenwired
GRID Alternatives
Hamon Engineering, Inc.
Hansol Technics
Harrison Electric & Solar
Haskell & White LLP
HB Fuller
Heliodyne Inc.
Helios Renewables
High Def Electrical Inc
Highlands Energy
HiQ Solar
Home Energy Systems, Inc.
Horizon Solar Power
Hot Purple Energy
Hot Sun Industries Inc
Humless
Hyundai Heavy Industries Co., Ltd.
IAPMO
iDemand Energy Storage
IGS Solar
Impress Labs
Indaspec, LLC
Integra Insurance Services, Inc.
International Code Council (ICC)
IronRidge
Itek Energy
Itron
James G. Parker & Associates
JDC Energy Solutions dba RePower
JKB Energy
JP Electric and Solar
Just Solar Holdings Corp.
K2 Clean Energy Capital
Kahn Solar
Kenwood Energy
Keyes & Fox LLP
Kina'ole Capital Partners, LLC
Kinsman Solar Power Systems Corporation
KRC Enterprises
Kurios Energy
Kyocera International, Inc.
LA Source Consulting
Land and Sea Solar
Laplace Systems, Inc.

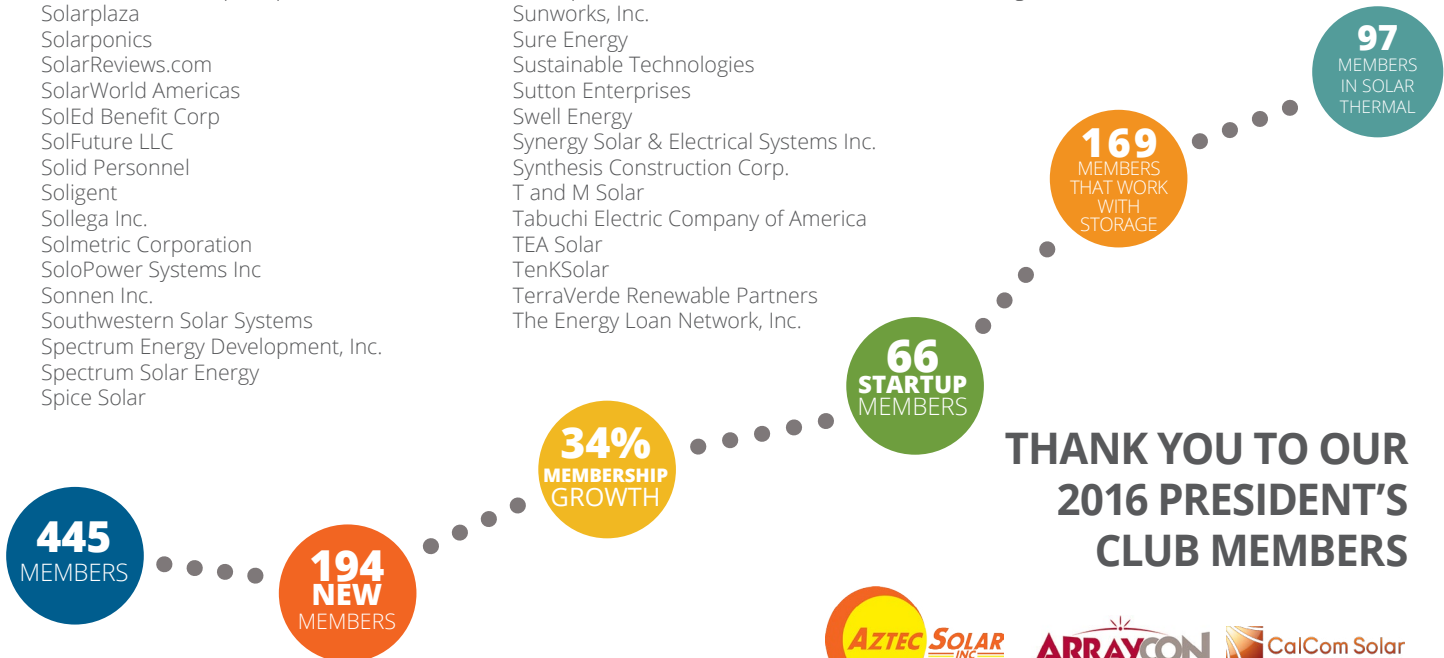
Leadership for a Clean Economy
Legacy Risk and Insurance Services
Lendlease
LG Electronics U.S.A. Inc.
Lifestyle Solar, Inc.
Luminalt Energy Corporation
Lunarium, Inc.
M+W Group
Magic Sun Solar Inc.
Matadors Community Credit Union
McCalmont Engineering
Mechatron Solar Inc
Mendocino Solar Services
Meteocontrol North America
Michael & Sun Solar, Inc.
Mid-State Solar
Milholland Solar & Electric
Mission Solar Electric
Mitsubishi Electric, US Inc.
Model Three LLC
ModSpace
Mohr Power Solar
Mosaic
MyDomino
NABCEP
Namaste Solar
Natron Resources Inc.
Neurio
Nevados
New Day Solar
New Energy Structures (NESCO)
Next Energy
NEXTracker, Inc.
Nexus Solar
NH Research
North Coast Solar
Northern Electric and Power LLC
Nova West Solar
Novasolix
Nuance Energy Group, Inc.
Occidental Power Solar & Cogen
Offline Solar Electric
OMG Roofing Products
OneRoof Energy
OnGrid
OpTerra Energy Services
Optony
Owen Dunn Insurance Services
Pacific Energy Company
Pacific Land & Energy, LLC
Palomar Solar Ltd
PanelClaw, Inc.
Pathways Energy
Pav-Solar
Pegasus Solar, Inc.
Peimar Inc
Peltons Solar Service
PetersonDean
PFMG Solar LLC
Pick My Solar Corp.
Pickett Solar
Pika Energy
Platt Solar
POCO Solar Energy Inc.
Polar Solar

PowerTree
Precision Electric Solar Company
Preformed Line Products / DPW Solar
Prime Solar
PROINSO USA
Promise Energy, Inc.
ProQuality Contracting, Inc.
ProSight Specialty Insurance
ProSolar (Professional Solar Products)
Pure Power Solutions
PV Racking
PV-Cables, Inc.
Quabbin Solar (UTR West L.L.C.)
Quality Home Services
Quick Mount PV
R.T. Maher Construction
Rackam Technologies
Radiant Solar Technology
RBI Solar, Inc.
REC Solar
ReGreen Inc.
Renew Financial
Renewable Solar, LLC
Renova Energy Corp.
Renovate America
Renvu Solar Equipment Distribution
REPOWER by Solar Universe
REPOWER by Solar Universe Monterey
REPOWER Santa Rosa
REPOWER South San Francisco
Revco Solar
Rexel
Rockwood Management Corporation
Roof Integrated Solar Energy
Roof Tech Inc.
Rooftop Solar Inc
Rosendin Electric
Roy E. Hanson Jr. Mfg. Inc.
RS Energy
Run on Sun
S-5!
Safe Fleet
Sage Renewables
Salal Credit Union
San Diego City College
San Diego County Solar
Sandbar Solar
Santa Cruz Solar
Sapa Extrusions
Savenia Solar Ratings
Sawmill Solar Electric
Scatec Solar North America, Inc
Scout
Scudder Solar Energy Systems
Scurfield Solar & Heating
SEAI America, Inc. (S-Energy America)
Seaward Group
SEE Systems
Semper Solaris
SepiSolar, Inc.
Shorebreak Energy Developers
Sierra College - Energy Technology Dept.
Sierra Pacific Home & Comfort
Skelly Electric
Sky Power Solar
Slingshot Power, PBC

Smart Solar Solutions, Inc.
 Smarttrak Inc.
 Sol Systems
 Sol-Tek Industries, Inc.
 Solair Allied Intelligence
 Solar Action Network
 Solar Census
 Solar Energy Collective
 Solar Energy Marketing
 Solar FlexRack
 Solar Forward
 Solar Hydronics Corporation
 Solar Optimum
 Solar Richmond
 Solar Roof Dynamics
 Solar Roof Services
 Solar System, Inc.
 Solar Technologies
 Solar Unlimited Inc
 Solar Vast
 Solar Works
 Solar-Oversight
 Solar2Power
 SolarAI
 Solarcentury
 SolarCity
 SolarCraft
 Solare Energy, Inc.
 SolarEdge Technologies
 SolarGem Electrical
 SolarGnosis
 Solaris Energy, Inc.
 SolarNexus
 SolarOPS - Radiocap Corp
 Solarplaza
 Solarponics
 SolarReviews.com
 SolarWorld Americas
 SolEd Benefit Corp
 SolFuture LLC
 Solid Personnel
 Soligent
 Sollega Inc.
 Solmetric Corporation
 SoloPower Systems Inc
 Sonnen Inc.
 Southwestern Solar Systems
 Spectrum Energy Development, Inc.
 Spectrum Solar Energy
 Spice Solar

Spiffy Solar
 Spruce Finance Inc.
 Standard Solar
 Stanford Transportation Group
 Staten Solar Corporation
 Stellar Solar
 Stem
 Sullivan Solar Power
 Summit Technology Group, Inc.
 Sun Action Trackers
 Sun Light & Power
 Sun Pacific Solar Electric, Inc.
 Sun Solar Energy Solutions
 Sun X Solar Inc.
 Sunchiller, Inc.
 Suncrest Solar
 SunEarth, Inc.
 Sunergy Construction Inc.
 Sungage Financial, Inc.
 Sungenia Solar Solutions
 Sungevity
 Sunlight Energy Systems Inc.
 Sunline Energy
 Sunmizer Solar Roofing Systems
 SunModo Corporation
 Sunpower Corporation
 Sunrun
 SunSolar U.S. Inc.
 SunSpark Technology Inc
 SunStreet Energy Group LLC
 Sunthurst Energy, LLC
 Suntrek Industries, Inc.
 Sunvalley Solar
 Sunvapor
 Sunworks, Inc.
 Sure Energy
 Sustainable Technologies
 Sutton Enterprises
 Swell Energy
 Synergy Solar & Electrical Systems Inc.
 Synthesis Construction Corp.
 T and M Solar
 Tabuchi Electric Company of America
 TEA Solar
 TenKSolar
 TerraVerde Renewable Partners
 The Energy Loan Network, Inc.

The Solar Energy Company
 ThinkWire Energy Services
 TRA Snow and Sun
 UC Solar/UC Merced
 UMA Solar Inc.
 UNIRAC, Inc.
 Uptown Solar
 US Solar Distributing, Inc
 UtilityAPI
 Valence Technology
 Vasco Solar Energy
 Verdera Partners
 VERT Solar Finance LLC
 Villara Building Systems
 Vista Solar
 Walter Mortensen Insurance/INSURICA
 Walters & Wolf Glass Co.
 Watton Tech
 Watts New Under the Sun, Inc.
 Wave Solar
 Wendel Rosen Black & Dean LLP
 WESCO Distribution
 West Hills Construction, Inc.
 Westcoast Solar Energy
 Western Sun Systems, Inc.
 Wing Solar & Wood Energy, Inc.
 Wired Into The Future
 Wunder Capital
 Xero Solar
 Yaskawa - Solectria Solar
 Ygrene Energy Fund
 Your Solar Mate
 YourSolarPlans, Inc.
 Zing Solar LLC



THANK YOU TO OUR 2016 PRESIDENT'S CLUB MEMBERS



CALSEIA STAFF

Bernadette Del Chiaro



EXECUTIVE DIRECTOR

Brad Heavner



POLICY DIRECTOR

Meghan Vincent-Jones



MARKETING &
DEVELOPMENT
DIRECTOR

Elise De Grande



OPERATIONS DIRECTOR

Kelly Knutsen



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Laura Gray



ENERGY STORAGE
POLICY ADVISOR

Carter Lavin



MEMBERSHIP
MANAGER

Will Gonzalez



LOBBYIST
GONZALEZ, QUINTANA, & HUNTER LLC

Donald Simon



LEGAL COUNSEL

Wendel, Rosen, Black & Dean LLP



1107 9th Street, Suite 820
Sacramento, CA 95814

www.calseia.org
(916) 228-4667
info@calseia.org