

California Solar & Storage Association 2018 ANNUAL REPORT



2018

ONE MILLION MILESTONE

In 2003, Senator Murray (D-LA) teamed up with a little-known advocate at Environment California (yours truly) to introduce the first solar homes bill, SB 289. The bill passed its first committee but died shortly thereafter. But from this point forward, one thing was clear: solar had lost the battle but was winning the war.

SB 289 attracted high-profile media (including Rush Limbaugh!) as well as gubernatorial candidate Arnold Schwarzenegger who made building with solar a campaign pledge. Out of that pledge was born the Million Solar Roofs Initiative. The rest is history, but it is a history worth celebrating.

It is awesome to reflect on the sheer amount of work that has gone into getting the distributed solar and storage market to where it is today. Over the course of fifteen years, we have expanded NEM three times while fending off numerous attempts to gut the program. We have created and shaped several incentive programs, that have fostered innovation, lower costs, and smarter technologies. Solar is finally mandated on new homes and we are about to mark the official millionth “solar roof!”

Yet there is never any time for victory laps in California’s dynamic and competitive energy market. NEM is yet again on the chopping block. Red tape still abounds. And the goal posts continue to move via anti-solar rate structures – same as it ever was.

So, strap on your seat belts and get ready for a high-octane 2019. As always, we appreciate you being a part of the CALSSA community as we continue to defend and build California’s clean energy future.

Thank you for your support.



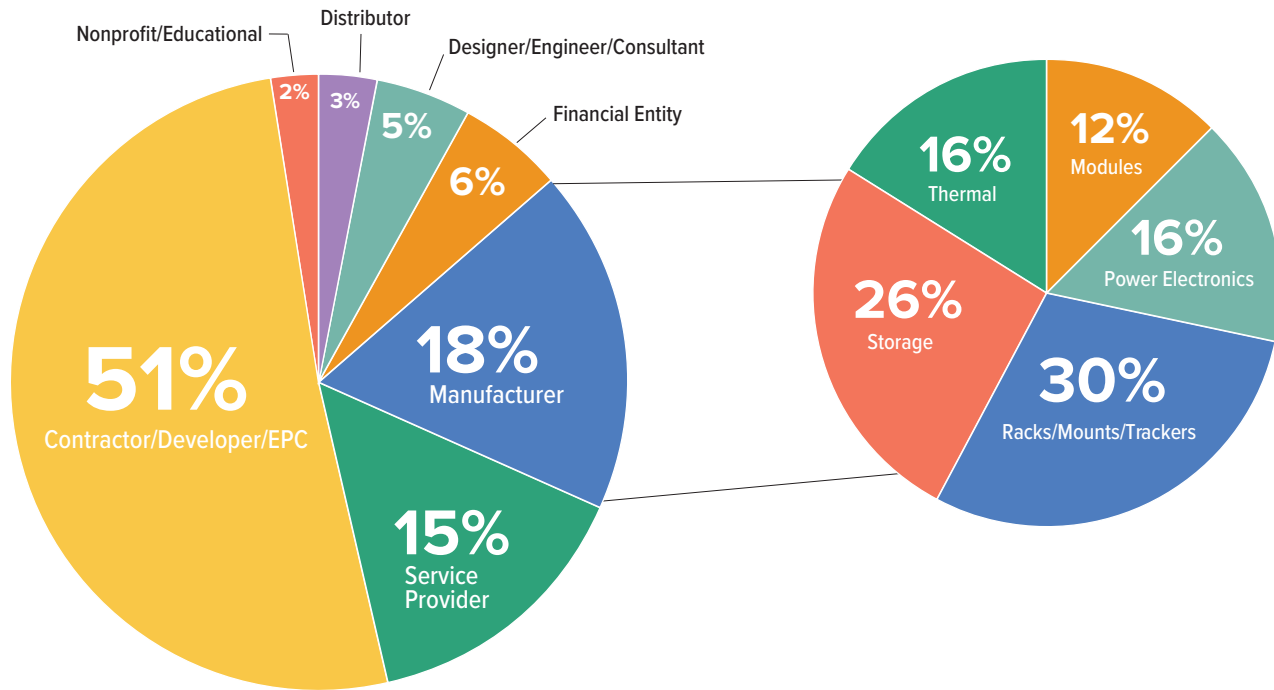
Bernadette Del Chiaro
Executive Director



Ed Murray
Board President

OUR MEMBERS

2018 Members by Business Type



- 180 Solar Power
- 365 Pronto
- 4 S.T.E.L. Engineering, Inc.
- A-C Electric Company
- ACR Solar International, Corp.
- Adara Power
- Advance Power
- Advanced Conservation Systems, Inc.
- Advanced Microgrid Solutions
- Advantage Energy Capital Partners
- Aerocompact
- AES Solar
- Aeterna Energy, LLC
- AgEnergy Systems
- Aguillon Enterprises LLC
- Alameda Electrical Distributors
- Albion Power Company, Inc.
- ALIVE Solar & Roofing
- All Save Energy
- All Terrain Solar
- All Valley Solar Inc.
- Alpha Energy Management Inc.
- AlsoEnergy
- Altadena Energy & Solar Inc
- Altever Inc
- Altsys Solar Inc.
- Amalgamated Bank
- Ameco Solar Inc
- Ameresco
- Apex Natural Renewable Generation
- APG Solar
- Apricus, Inc
- APsystems
- Aquatherm Industries, Inc.
- Arcadia Solar
- Arise Solar
- Arnold Solar Inc
- Arraycon
- Aurora Solar
- Avalon Battery
- Axiom Exergy
- Axis Solar Design

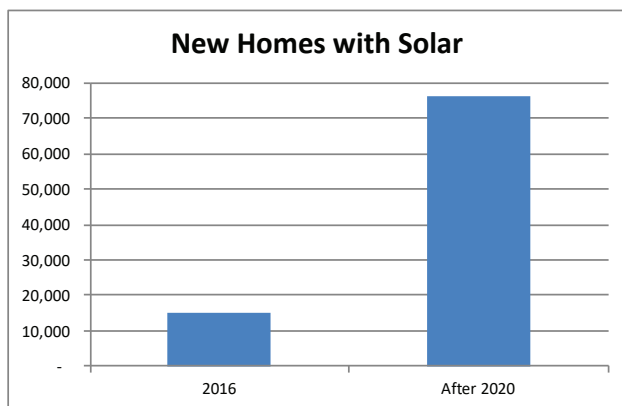
- Aztec Solar
- B & B Solar
- Baja Carport
- Baker Electric Home Energy
- Barrier Solar Power Systems
- BayWa r.e. Solar Systems LLC
- Bear Solar Inc.
- Belvedere Solar Finance
- Berger Solar Electric, LLC
- Blue Planet Energy
- Blue Sky Utility LLC
- BlueFlame
- Bolton & Company
- Booth Construction
- Borrego Solar Systems, Inc.
- BPI
- Bright Power
- Brighton Energy
- Broadstreet Power
- Brooks Engineering
- BTA Solar
- Burnham Energy Inc.
- BVI Solar
- Byers Solar
- Caiman Engineering Inc.
- Cal Paso Solar Electric
- CalCom Energy
- Cali One Services
- California Clean Energy LLC
- California Solar Electric Company
- California Solar Electric Systems, Inc.
- California Solar Integrators, Inc.
- Canadian Solar
- Canyon Construction Services
- Capital City Solar
- CED Greentech
- Cenergy Power
- Center for Climate Protection
- Center for Sustainable Energy
- Centrica Business Solutions
- Century Roof & Solar
- Chico Electric

- Chico Solar Works
- Chint Power Systems
- Cinnamon Energy Systems
- Citadel Roofing & Solar
- Citigreen, Inc.
- CivicSolar
- Clean Energy Group
- Clean Rays Energy
- Clean Solar
- CleanFund Commercial PACE Capital
- CleanTech Docs, Inc.
- CleanTech Energy Solutions, Inc.
- Cleantech Law Partners
- CleanView Capital
- ClearEnergy
- CM Solar Electric
- Coastal Constructors, Inc.
- Cobalt Power Systems
- Coldwell Solar
- Cool Earth Solar
- Corda Solar, LLC
- Cosmic Solar
- Cox, Castle & Nicholson LLP
- CSA Group
- Custom Power Solar
- Darfon America Corp.
- Davis Wright Tremaine
- Del Sol NRG, Inc
- Diablo Solar Services
- Discover Battery
- Dividend Finance, LLC
- Earth Electric
- Eco Foundation Systems Inc.
- Ecolibrium Solar
- EcoPower Energy
- EDF
- Edisun Microgrids
- Electricious
- ElectriQ Power
- EMCOR Mesa Energy Systems
- ENACT Systems Inc.
- EnelX

2018 PROGRAM HIGHLIGHTS

New Homes Mandate

In a policy heard around the world, nearly all new homes in California will be built with solar PV starting in 2020, and many will include storage as well. The advocacy that led to this decision dates back to the push for solar-ready home requirements in 2003. In 2018, the California Energy Commission recognized solar as universally cost-effective. The CEC also created an option for energy storage to help meet the standards.



Self-Generation Incentive Program

A highlight of 2018 was passage of SB 700, which will add up to \$800 million to the SGIP budget. It took two years with a lot of help from a lot of people, but CALSSA defied the odds and overcame many obstacles to get the bill passed and signed.

After research showed that the earliest SGIP-funded storage systems caused a slight

increase in greenhouse gas emissions, policy makers have been developing new rules to ensure the trend does not continue. CALSSA demonstrated that outdated rate design was the culprit and has already been fixed, and we worked to ensure that the new rules are not excessively burdensome.

NEM Solar Plus Storage

CALSSA worked hard to advance our proposal to allow customers to install DC-coupled solar plus storage systems larger than 10 kW under net metering and to allow larger AC-coupled systems without additional metering. This new rule will enable customers to store solar power in the daytime and discharge it onto the grid in the evening for high value net metering credits. It will also enable batteries to be used for self-supply while maintaining net metering for solar.

Rates

Years of debate over shifting peak periods in time-of-use rates concluded in 2018. The rate cases mostly ended in the utilities' favor, but CALSSA was successful in trimming some of the worst aspects and gaining approval for new rates designed specifically for customers with energy storage.

Consumer Protection

When customers sign agreements they do not understand, it can harm individuals and the market. Policy makers are interested in regulating



888 kW solar parking canopy system for Madera Community College Center by member company, ForeFront Power, as part of a 7.4 MW portfolio for State Center Community College District.

the solar sales process. CALSSA negotiated the content of a contract cover sheet and a consumer guide, and debated a new process for responding to consumer complaints.

Permitting

CALSSA's permitting hotline helps members get local approval for projects and keeps fees in check. We coordinated with fire protection officials in the rollout of new standards for setbacks and pathways. We worked with state agencies to develop a book of best practices on permitting energy storage and helped produce and distribute storage fact sheets for building departments.

Interconnection

CALSSA has taken a leadership role in a stakeholder group that is rewriting core pieces of Rule 21. Our proposals include setting timelines for grid upgrade work, reducing upgrade costs, and replacing proxies used in interconnection review with actual grid hosting capacity according to publicly available data. The proposals are awaiting CPUC decisions.

CALSSA stepped in to help when residential customers were increasingly tagged with costs to upgrade transformers after they had installed solar. We clarified the process for customers to request pre-installation review and convinced utilities to accept enhanced inverter settings in lieu of upsizing transformers.

Separately, CALSSA is making sure smart inverter standards do not push interconnection off the rails. Utility implementation plans would have brought the market to a standstill for all sizes of projects. We rang alarm bells and caused utilities to change their plans.

Solar Water Heating Incentives

CALSSA successfully advocated for increased incentive levels for commercial pools and pushed to delay the termination of the CSI-Thermal program for six months. We have been busy teeing up the next phase of policy support after that program has expired. We got solar water heating included in plans for new programs in the Central Valley and laid the groundwork for eligibility in statewide programs.

Protecting Against Legislative Attacks

A coalition of utility employees is seeking every opportunity to push bill provisions limiting the value of distributed energy resources. In 2018, they inserted language attacking local solar and storage into a bill about responding to fire risks. CALSSA mobilized forces and assembled a coalition to fight back. After months of high tension, the offending language was struck from the bill.

Our fact sheets and webinars are available on our website at www.calssa.org/members-only. Be sure to use these resources to stay informed.

LEADERSHIP

Officers

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Walker Wright, *ENGIE Storage Services*

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Gary Gerber, *Sun Light & Power*

Cathleen Monahan, *GRID Alternatives*

Les Nelson, *IAPMO*

Sanjay Ranchod, *Tesla*

Pat Redgate, *AMECO*

Rick Reed, *SunEarth*

Jeff Spies, *Planet Plan Sets*

Catherine Von Burg, *SimpliPhi Power*

Howard Wenger, *Wenger Ventures*

COMMITTEES

CODES & STANDARDS

Chair: Jeff Spies, *Planet Plan Sets*

COMMUNITY CHOICE AGGREGATION

Chair: Ben Davis, *CALSSA*

CONSUMER PROTECTION

Chair: Gary Gerber, *Sun Light & Power*

ETHICS

Chair: Ed Murray, *Aztec Solar*

HEALTH & SAFETY

Chair: Carlos Ramirez, *Sunrun Inc*

INTERCONNECTION

Chair: Jeff Lounsberry, *CalCom Solar*

LEGISLATIVE & REGULATORY POLICY

Chair: Ben Airth, *CSE*

MUNICIPAL UTILITIES

Chair: Ben Davis, *CALSSA*

PERMITTING

Chair: Mark Rodriguez, *Sunrun Inc.*

SMART GRID

Chair: Tim McDuffy, *CalCom Solar*

STORAGE

Chair: Andy Schwartz, *Tesla*

THERMAL

Chair: Les Nelson, *IAPMO*

REGIONAL CHAPTERS

Chapters are where professionals from across the storage, PV, and thermal value chain get together, network, share best practices, and learn the latest industry developments. In 2018, our six chapters organized 21 events with nearly 800 attendees covering important topics such as energy storage solutions, solar insurance, legal considerations for solar businesses, navigating permitting requirements, TOU rate changes and collaborating with CCAs. Meetings are open to all employees at member companies so if you have not attended a meeting yet, make sure to join us in 2019! You can sign up for chapter updates on our website.



CALSSA members attend a San Diego chapter meeting to hear from Steve Jones, Assistant Building Official for the City of Oceanside and the President of the Sustainable Energy Action Committee (SEAC), on permitting for energy storage systems.

Thank You To Our REGIONAL CHAPTER LEADERS



Bay Area

Rachel Bird, *Borrego*
Mary Shaffer Gill, *AMS*
Charlie Seltzer, *CivicSolar*
Adrienne Underwood, *Sunrun*
Tor Valenza, *SepsiSolar*
Randy Zechman, *Clean Solar*

Central Valley

Jack Ramsey, *Altsys Solar*
Joseph Smick, *Renew Financial*

Los Angeles

Deep Patel, *GigaWatt*
Eric Presley, *Ironridge*

North Bay

Keith Kruetzfeldt, *Suntegrity Solar*
Jeff Mathias, *Synergy Solar*
Bret Young, *Fronius*

Sacramento

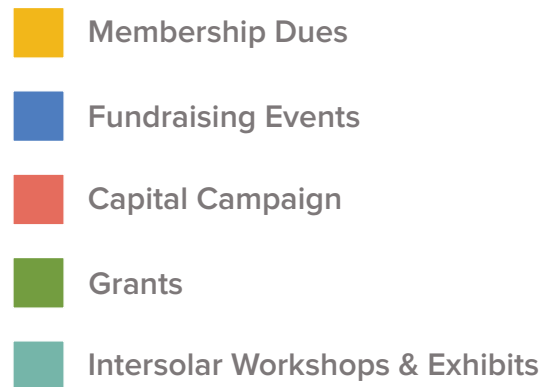
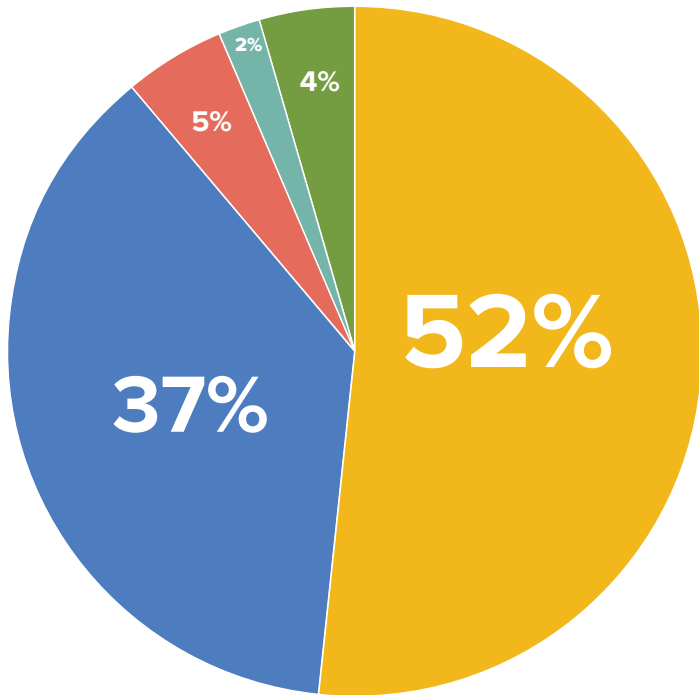
Ed Ayala, *Eco Foundations Systems*
Steve Geiger, *Grid Alternatives*
Lori Hodel, *Owen Dunn Insurance*

San Diego

Cecilia Aguillon, *Aguillon Enterprises*
Tara Kelly, *Sullivan Solar Power*
Martin Learn, *Home Energy Systems*

RESOURCES & EVENTS

2018 REVENUE SOURCES



MEMBER EDUCATION

In 2018, CALSSA helped members understand, navigate, and succeed in an increasingly competitive marketplace. Each week we publish a high-level weekly update for members only, that provides timely information about changes and developments in the market. We also publish fact sheets, hold webinars and provide in-person trainings throughout the year to keep our members armed with the latest information to continue to run their business successfully.





2018 EVENTS

In 2018, we organized events throughout the state to support business-to-business networking while also providing CALSSA with much needed resources to keep the California market growing. From huge parties like Solar Battle of the Bands to our more intimate events like Contractor Day and our SoCal Golf Tournament, thousands of business professionals joined in the fun. We'd like to thank all of the companies that support our events through sponsorship and involvement. Without the industry's active participation in our events, our work would not be possible!



2018 Members (con't)

Energport, Inc
Energx Controls
Energy Savings Pros
Energy Toolbase
EnergySage
ENGIE Storage Services
Enphase Energy Inc.
EnterSolar
Environmental Solar Design
EPC Power Corp.
EVA Green Power
Everest Solar Systems
Evergreen Solar
Everyday Energy
Exponent Solar Energy LLC
Extensible Energy
EZ Solar Electric
F & L Contractors, Inc.
FAFCO
Feather River Solar Electric
Fidelity Home Energy
Folsom Labs
ForeFront Power
Fortress Power
Fortune Energy
Fronius USA
Fusion Power Design, LLC
GAF
GE Solar
Geli
Generate Capital
GermanSolar
GetTheReferral.com
GigaWatt, Inc.
Gilmore Heat Air & Solar
Gold Electric, Inc.
Gold Rush Energy Solutions
Golden Energy
Good Sun
GoSolarPros
Gr8 Energy
Graybar
GRID Alternatives
GridPoint
Hagadol Solar
Harrison Electric & Solar
HCI Solar
Hecate Energy
Heliodyne Inc.
Helios Services
HES Solar
Highlands Energy
Horizon Solar Power
Hot Purple Energy
Hot4Solar
Hoymiles
Human Lift
Hyperlight Energy
Iacharya Silicon Limited
IAPMO
IGS Solar
Impact Energy And Solar Inc
Indaspec, LLC
Infinity Energy
International Code Council
IronRidge
Itek Energy
James G. Parker Insurance & Associates
JinkoSolar (U.S.) Inc.
JKB Energy
JP Electric and Solar
JTG/Muir
Jumpout Trading
Just Leaks
K2 Clean Energy Capital
KACO New Energy

Kahn Solar
Kenwood Energy
Keyes & Fox LLP
KiteRocket
Krogh & Decker, LLP
Kurios Energy
Land and Sea Solar
Layered Conceptz
Leap
Legacy Risk and Insurance Services
Lendlease
Lets Get Solar
LG Chem
LG Electronics U.S.A. Inc.
Liberty Bay Solar
Lumeta Solar
Luminalt Energy Corporation
M Bar C Construction, Inc.
Magic Sun Solar Inc.
Malden Solar
MAR Structural Design
Martin Herzfeld
Matadors Community Credit Union
MBL Energy
McCalmont Engineering
Meecotech
Mendocino Solar Service
Meta Solar
Michael & Sun Solar, Inc.
Mid-State Solar
Mission Solar Electric
Mission Solar Energy
Mitsubishi Electric, US Inc.
MMCSolar
Modular Lifestyles, Inc.
Mohr Power Solar
Mosaic
Murley Consulting Group
naak inc
NABCEP
Natron Resources Inc.
NEC Energy Solutions
New Day Solar
Nexsus Solar
NEXTracker
NH Research
Nikola Power
North Coast Solar
Nova West Solar
Now Go Solar
Nuance Energy Group, Inc.
O&M Solar Services, LLC
Occidental Power Solar & Cogen
Offline Solar Electric
OmegaComp HR
OMG Roofing Products
Onswitch LLC
OpenEGrid
Optony
Opus One Solutions
OutBack Power
Owen Dunn Insurance Services
Pacific Energy Company
Pacific Land & Energy, LLC
Palmetto Clean Tech
Palomar Solar Ltd
ParagonSun
Pathways Energy
PCL Construction
Peak Demand
Pegasus Solar, Inc.
PermaCity Construction Corporation
PetersenDean
PFI
Photon Brothers
Pick My Solar Corp.
Pickett Solar

Pika Energy
Planet Plan Sets
Planet Solar
Platt Solar
POCO Solar Energy Inc.
Power Structures
PowerTree
Preformed Line Products / DPW Solar
Prof. Thomas Davies
Promise Energy, Inc.
ProSight Specialty Insurance
ProSolar
Pure Power Solutions
PV Racking
PV-Cables, Inc.
Quality Home Services
Quattro Solar, Inc.
Quick Mount PV
Quick Solar Systems
R.T. Maher Construction
Radiant Solar Technology
RBI Solar, Inc.
REC Solar
ReGreen Inc.
Rehab Solar Construction
Renew Financial
Renewable Energy Partners, Inc
Renewable Energy Test Center
Renewable Solar, LLC
Renova Energy Corp.
Renovate America
Renvu Solar Equipment Distribution
Revel Energy
Rexel Gexpro
Risen Energy
Rod Bergen P.E.
Ron Dorris Electric & Solar
Roof Tech Inc.
Rosendin Electric
Run on Sun
S-5I
Sage Renewables
Salal Credit Union
San Diego County Solar
Sandbar Solar
Santa Cruz Solar
Santa Ynez Valley Solar
Sattler Solar Inc.
Savenia Solar Ratings
Sawmill Solar Electric
Scudder Solar Energy Systems
Scurfield Solar
Seaward Group
SepiSolar, Inc.
Seraphim Energy Group Inc.
Shorebreak Energy Developers
Siemens Corporation
Sierra Pacific Home & Comfort
Sighten
SilRay
Simmitri
SimpliPhi Power
simPRO Software
Six Rivers Solar
Skelly Electric
Sky Power Solar
Skyven Technologies
SMA America, LLC.
Smart Solar Solutions, Inc.
Sol Systems
Solahart Industries Pty Ltd
SolAqua Inc.
Solar Bid Check
Solar Carports Direct
Solar Census
Solar CowboyZ
Solar Design Tool
Solar FlexRack

Solar Forward
 Solar Foundation Solutions
 Solar Heroes
 Solar Insure
 Solar Optimum
 Solar Pro Energy Systems
 Solar Richmond
 Solar Roof Dynamics
 Solar Symphony
 Solar System, Inc.
 Solar Technologies
 Solar Unlimited Inc
 Solar Vast
 Solar Wholesale Group
 Solar Works
 SolaRack
 SolarCraft
 Solare Energy, Inc.
 SolarEdge Technologies
 SolarGain West
 SolarGem Electrical
 SolarGnosis
 Solaria
 Solar-Klean, LLC
 SolarMax Technology
 SolarNexus
 SolarOPS - Radiocap Corp
 Solarplaza
 Solarponics
 SolarReviews.com
 SolarStory
 SolFuture LLC
 Solid California
 Solid Personnel
 Soligent
 SolPal
 SolSource Energy
 Soltage, LLC.
 Sol-Tek Industries, Inc.
 Sonnen Inc.
 SoProCFO
 SoundView Risk Advisors
 Southwestern Solar Systems
 Spectrum Energy Development, Inc
 Spruce Finance Inc.
 Stada Energy
 Standard Solar
 Stanford Transportation Group
 Staten Solar Corporation
 Stellar Solar
 Stem, Inc.
 Sullivan Solar
 Sun Light & Power
 Sun Pacific Solar Electric, Inc
 Sun Solar Electric

Sun X Solar Inc
 Sunbank Solar, Inc.
 SunEarth, Inc.
 Sunfolding
 Sungage Financial, Inc.
 Sungenia Solar Solutions
 Sungenix Energy Solutions
 Sungrade Solar
 Sunlight Energy Systems Inc.
 Sunline Energy
 Sunmizer Solar Roofing Systems
 SunModo Corporation
 Sunnova Energy Corporation
 Sunny Energy of California
 Sunpower Corporation
 Sunriver Solar
 Sunrun
 Suns Up Solar
 SunSolar U.S. Inc.
 SunSpark Technology Inc
 SunStor Solar
 SunStreet Energy Group LLC
 Suntegrity Solar
 Sunterra Solar Inc
 Sunthrust Energy, LLC
 Suntrek Industries, Inc.
 Sunvapor
 Sunworks, Inc.
 Sustainable Technologies
 Sustineo
 Sutton Enterprises
 Swell Energy
 Synergy Home Improvement
 Synergy Power
 Synergy Solar & Electrical Systems Inc.
 T and M Solar
 Tabuchi Electric
 Talbott Solar & Radiant Homes Inc.
 Tangerine+
 Taritrate Strategic Energy
 Tax & Financial Group
 TEA Solar
 TerraVerde Energy, LLC
 Tesla
 The Doonbeg Group
 The Energy Loan Network, Inc.
 The Solar Energy Company
 ThinkWire Energy Services
 Tigo Energy, Inc.
 Titanium Power
 Tony Haske Consulting
 TransUnion
 Treepublic

Triple Line Solar
 UC Solar/UC Merced
 UMA Solar Inc.
 UNIRAC, Inc.
 United Business Bank
 United Sun Energy
 US Solar Distributing Inc
 UtilityAPI
 Vasco Solar Energy
 Vector Green Power and Materials LLC
 Verdera Partners
 VERT Solar Finance LLC
 Villara Building Systems
 Vista Solar
 Visual Mobile Technologies
 Vital Energy
 Vivint Solar, Inc.
 Vutiliti
 Walter Mortensen
 Watts New Under the Sun, Inc.
 Wave Solar
 Wendel, Rosen, Black & Dean LLP
 Wenger Ventures
 WESCO Distribution
 West Hills Construction, Inc.
 Westcoast Solar
 Westhaven Solar
 Wing Solar & Wood Energy, Inc.
 Wivity Inc.
 Xero Solar
 Yaskawa - Solectria Solar
 Ygrene Energy Fund
 Your Solar Mate
 YourSolarPlans, Inc.
 Zilla Corporation

501
MEMBERS

106
NEW
MEMBERS

85%
OF CA SOLAR
THERMAL PROJECTS
INSTALLED BY A
CALSSA MEMBER

95%
OF CA GRID-TIED
STORAGE PROJECTS
INSTALLED BY A
CALSSA MEMBER

80%
OF CA PV
PROJECTS
INSTALLED BY A
CALSSA MEMBER

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Ben Davis



Policy Associate

Will Gonzalez



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