California Solar & Storage Association ANNUAL REPORT





SMART LOCAL ENERGY

Welcome to your newly branded organization! After forty years as CALSEIA, our new name-the California Solar and Storage Association-reflects current marketplace realities as well as our vision for the future.

As you well know, California solar businesses have been pairing batteries with PV panels since the 1970s. What's more, as our thermal members point out, solar hot water systems are inherently about storing the sun's energy in the form of heat. Our name change is simply recognition of the long-standing role storage has played in California's deployment of clean energy solutions. At the same time, this new name is also a reflection of our efforts to develop market mechanisms for a whole new wave of consumer-facing energy products.

Interestingly, as you scroll through the pages of this Annual Report, you'll note that 75% of the companies installing storage devices via the state's incentive program are already members of the association. Storage has long been our shared reality and now it is officially part of our name.

Of course, the California Solar and Storage Association will continue to be the familiar group of committed people, businesses, and organizations. We'll keep fighting for you in the decision-making forums that really matter to the California market. We'll keep striving to keep you informed. And we'll keep throwing the best industry parties in California!

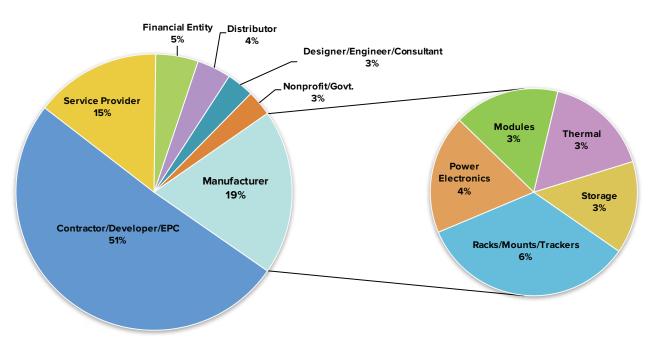
Thanks, as always, for your continued support.

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Sincerely,

Ed Murray **Board President** Bernadette Del Chiaro **Executive Director**

OUR MEMBERS



2017 Members by Business Type

180 Solar Power 4 S.T.E.L. Engineering, Inc. A Work of Art Solar A-C Electric Company ABC Solar Incorporated Absolutely Solar, Inc. ACR Solar International, Corp. Adara Power

Advanced Conservation Systems, Inc. Advanced Microgrid Solutions Advantage Energy Capital Partners

AeroSpec Technologies AET Solar

ADD Solar

Aeterna Energy, LLC Affordable Solar Installation AgEnergy Systems

Aquillon Enterprises LLC AIR SUN SOLAR

Alameda Electrical Distributors Albion Power Company, Inc.

aleo solar Alive Industries All R Energy All Valley Solar Inc. AllEarth Renewables

Alpha Energy Alpha Energy Management Inc. AlsoEnergy

Altadena Energy & Solar Inc Alternative Energy Systems (AES Solar) Altsys Solar Inc.

Ameco Solar Inc American Renewable Capital, Inc. Ampion

Antenna Group Apex Natural Renewable Generation, LLC

APG Solar Apricus, Inc

Aquatherm Industries, Inc. Arcadia Solar

APsystems

Arise Solar Arnold Solar Inc Arravcon

Aurora Solar Auxin Solar Avalon Battery

AWS Electrical & Solar Inc Axis Solar Design Aztec Solar

B & B Solar Backwoods Solar Baker Electric Solar, Inc.

Barrier Solar Power Systems BavWa r.e. Solar Systems LLC Berger Solar Electric, LLC Bland Solar and Air

Blue Sky Utility LLC BlueFlame Energy Finance BMC Solar

Blue Planet Energy

Booth Construction Borrego Solar Systems, Inc.

Boviet Solar USA Bright Power

Brighton Energy BriteStreet Energy Group Broadstreet Powe

Brooks Engineering BTA Solar Burnham Energy Inc. RWR Solar

Bvers Solar Caiman Engineering Inc

Cal Paso Solar Electric CalCom Solar

California Solar Electric Company California Solar Electric Systems, Inc. California Solar Integrators, Inc. California Solar Systems, Inc.

Canadian Solar Capital City Solar CED Greentech

Cenergy Power Center for Climate Protection (Solar Sonoma County)

Century Roof & Solar Chaolysti Chico Electric

Chico Solar Works Chilicon Power Chint Power Systems Ciel Et Terre USA

Citadel Roofing & Solar Citigreen, Inc.

CivicSolar Clean Energy Group Clean Energy Storage Inc.

Clean Rays Energy Clean Solar CleanFund Commercial PACE Capital

CleanTech Docs, Inc. CleanTech Energy Solutions, Inc.

Cleantech Law Partners CleanView Capital CM Solar Electric

Coastal Constructors, Inc. Cobalt Power Systems

Coldwell Solar Community College League of California

Conserval Systems (SolarWall) Cool Farth Solar Cosmic Solar

CSE (Center for Sustainable Energy)

Custom Power Solar Cypress Creek Renewables

Dan Antonioli Construction Darfon America Corp. Davis Wright Tremaine Del Sol NRG, Inc. Deluge Consulting

Demand Energy Diablo Solar Services Dividend Solar Draker

Continued on page 10

2017 PROGRAM HIGHLIGHTS

TOU Rates

Changing peak periods in time-of-use rates from mid-day to evening hours is a monumental shift. In 2017, staff intervened in rate cases for all three IOUs to ease the transition. We successfully petitioned the CPUC to remove construction deadlines for projects under development to maintain eligibility for TOU period grandfathering. We are currently litigating to maintain rate options that are more solar-friendly at the same time that we develop new rate options for storage.

Storage Market Development

In 2017, we added a dedicated storage advocate to enhance our work on energy storage. Our goal is to create a thriving marketplace for distributed storage through the development of rules and programs to allow storage to participate in demand response programs, to be compensated for grid services, and other strategies. We petitioned to allow the interconnection of larger DC-coupled solar plus storage systems that were previously prohibited. Our intervention in rate cases will result in new rate options specific to customers with storage.

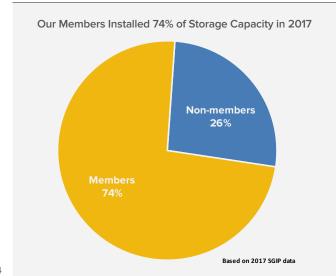
Self-Generation Incentive Program (SGIP)

We worked with the CPUC to develop rules that improve the application process. SGIP is now available on an ongoing basis rather than for very limited windows of time. SGIP

continues to require ongoing policy attention, with consideration of rules on low-income customers, greenhouse gas impacts, system performance requirements, residential participation, and more. In 2017, we helped implement a doubling of the SGIP budget and pressed for a much larger budget expansion. As part of that push, we raised the profile in Sacramento of customersited storage as a fundamental component of the California energy landscape.

Thermal

The California solar thermal market is growing, especially in the multifamily housing sector – with 32% annual growth between 2015 and 2016 in annual natural gas savings. That growth helped us secure a two-year extension of the CSI Thermal rebate program with AB 797 by Assemblymember Jacqui Irwin (D-Thousand Oaks). Roughly \$100 million in solar thermal rebate funds will be





An American Car Wash in Palm Springs, CA. Installation & photo by Renova Energy

available until December 31, 2019, with half of those funds targeted for low-income and disadvantaged communities.

Permitting, Codes & Soft Cost Reductions

We extended the expiring state law that caps solar permit fees for seven years to 2025 with AB 1414 by Assemblymember Laura Friedman (D-Glendale). AB 1414 also lowered the residential permit fee cap to \$450 and expanded the cap to include ground mounts and solar thermal systems. Our member hotline fielded 70 requests for assistance with permitting and codes issues, helping 52 of our members in 47 cities and counties across the state.

Interconnection

In 2017, we were a core participant in a working group with utility engineers to develop an analysis to measure how much solar can be interconnected at every point on the grid. This will help companies design systems that avoid lengthy studies and uncertainty about upgrade costs. We worked with the CPUC to define the issues to address in a new proceeding to overhaul Rule 21 and we are now helping to lead the stakeholder group that is rewriting the rules.

Net Metering

The battle over "NEM 2.0" in 2016 was just the

beginning. In fact, the 2019 "NEM 3.0" decision is right around the corner and the debate and foundational work got well underway in 2017. Our work focused on the critically important task of making sure the basis of "NEM 3.0"— the analysis of the value of distributed solar to the grid -- is accurate and fair. We won agreement from the CPUC that the tool built by the utilities was not up to the task, and we will work to improve that tool in 2018.

Consumer Protection

The local solar and storage market relies heavily on consumer satisfaction and confidence. In this way, efforts to protect consumers from confusion, misinformation and bad actors is of critical importance to continued market growth. Toward this end, we supported a new law, AB 1070 by Assemblywoman Lorena Gonzalez Fletcher (D-San Diego), which created new and important consumer protection measures, including standardized and simplified disclosures for all residential solar contracts. The law will help eliminate confusion and will give consumers the ability to make "apples to apples" comparisons between different offers. In addition, we also supported two new laws designed to further advance consumer protections for Property Accessed Clean Energy (PACE) financed projects. Happy consumers equal a healthy industry.

LEADERSHIP

Officers

President

Ed Murray, Aztec Solar

Vice President

Jeanine Cotter, *Luminalt*

Treasurer

Norm Nielsen, *Chico Electric*

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

Sanjay Ranchod, Tesla

Pat Redgate, AMECO

Rick Reed, SunEarth

Jeff Spies, Quick Mount PV

Walker Wright, ENGIE Storage Services

COMMITTEES

PERMITTING

Chair: Alan Fields (Solar Spectrum)

CODES & STANDARDS

Chair: Jeff Spies (Quick Mount PV)

THERMAL

Chair: Les Nelson (IAPMO)

HEALTH & SAFETY

Chair: Carlos Ramirez (Sunrun)

LEGISLATIVE & REGULATORY POLICY

Chair: Ben Airth (CSE)

STORAGE

Chair: Andy Schwartz (Tesla)

RATES

Chair: Marc Kolb (Tesla)

COMMUNITY CHOICE AGGREGATION

Chair: Ryan Carney (CSE)

MUNI NEM

Chair: Gina Goodhill Rosen (Tesla)

CONSUMER PROTECTION

Chair: Gary Gerber (Sun Light & Power)

SMART GRID

Chair: Tim McDuffy (CalCom Solar)

INTERCONNECTION

Chair: Andrew Hoffman (CalCom Solar)

ETHICS

Chair: Ed Murray (Aztec Solar)

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. 2017 brought experts from around the state to over 15 chapter events with over 450 attendees. Whether it was a panel of Community Choice Aggregators in San Mateo, the California Insurance Commissioner, Dave Jones, in San Ramon, pitches from innovative start-ups in Fresno, beers in Sebastopol, a panel on commercial system design in Placentia, policy updates in Sacramento, or storage trainings in San Diego: Chapters were a hub of networking and education this year.





Bay Area Q2 Chapter meeting hosted at the SolarEdge office in Fremont

North Bay Q4 Chapter meeting in Petaluma

Thank You To Our

REGIONAL CHAPTER LEADERS



Joe Roche, SunPower Mary Shaffer Gill, CivicSolar Rachel Bird, Borrego Randy Zechman, Clean Solar

Bill Stewart, SolarCraft Jeff Mathias, Synergy Solar

Becca Russell, Grid Alternatives Ed Ayala, Eco Foundations Systems Lori Hodel, Owen Dunn Insurance

Central Valley

Glenn Siemens, Arise Solar Jack Ramsey, Altsys Solar Jeff Brown, JLM Solar

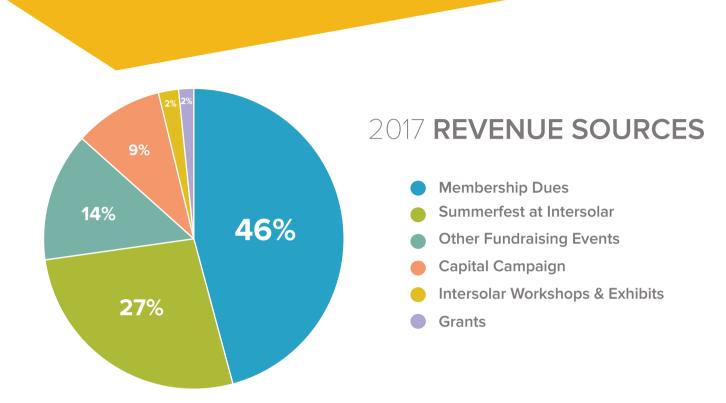
Los Angeles

Brian Cizmar. Enovative Group Deep Patel, GigaWatt Eric Presley, Ironridge

San Diego

Eddie Price, Grid Alternatives Martin Learn, Home Energy Systems Paul DeKleermaeker, Fronius Tara Kelly, Sullivan Solar Power

RESOURCES & EVENTS



MEMBER EDUCATION

Understanding policy risks and opportunities enables members to guide their businesses through marketplace ups and downs. In 2017, we sent out 66 informational emails, as well as 51 weekly newsletters and 28 policy alerts. We also hosted six webinars, published 24 fact sheets, hosted five policy summits, and fielded hundreds of calls and emails from members with pressing questions.











2017 **EVENTS**

In 2017, we organized events throughout the state to support business-to-business networking while also providing California Solar & Storage Association with much needed resources to keep the California market growing. From huge parties like Summerfest and Solar Battle of the Bands at Intersolar to our more intimate events like Contractor Days and our SoCal Golf Tournament, thousands of business professionals joined in the fun.

A special thanks to Intersolar for outstanding support of CALSSA and California's solar & storage market









2017 Members (con't)

Itek Energy

JKB Energy

JLM Energy

JobNimbus

JTG/Muir

Kahn Solar

JP Electric and Solar

K2 Clean Energy Capital

Just Energy Solar

Kaco New Energy

Kenwood Energy

Keves & Fox LLF

KRC Enterprises

Kurios Enerav

LE Solar

Liberty Solar

Lumeta Solar

Malden Solar

Martin Herzfeld

LTS Energy

Lifestyle Solar, Inc

Magic Sun Solar Inc.

MAR Structural Design

Kroah & Decker LLP

Land and Sea Sola

Lavered Conceptz

Leadership for a Clean Economy

LG Electronics U.S.A. Inc.

Luminalt Energy Corporation

Matadors Community Credit Union

M Bar C Construction, Inc.

Matt McCarty Construction

Mendocino Solar Services

Mercedes-Benz Energy

Michael & Sun Solar, Inc.

Milholland Solar & Electric

Mitsubishi Electric, US Inc.

Mission Solar Electric

Modular Lifestyles, Inc.

My Solar Solution LLC

Natron Resources Inc

NEC Energy Solutions

New Resource Bank

North Coast Solar (Energy Equity)

Northern Electric and Power LLC

Occidental Power Solar & Cogen

10

Nuance Energy Group, Inc.

Mohr Power Solar

McCalmont Engineering

Mechatron Solar Inc.

MEI Renewables

Mid-State Solar

MMCI

Mosaic

naak inc

NARCEP

Nevados New Day Solar

Next Energy

Nexus Solar

NH Research

NEXTracker, Inc.

Nova West Solar

OFFgrid Systems

Onswitch LLC

OutBack Powe

Offline Solar Electric

OMG Roofing Products

OpTerra Energy Services

Novasolix

Namaste Solar

Legacy Risk and Insurance Services

Ecolibrium Solar EcoPower Energy EcoVolt Finance LLC ENACT Systems Inc. EnergeiaWorks Energevity Energport, Inc **Energx Controls** Energy Toolbase EnergyField Solar, Inc. EnergySage EnerSaaS **Enovative Construction** Enphase Energy Inc. EnterSolar Environmental Solar Design Escalera, Inc Estriatus Law, PC ET Solar Inc. **Everest Solar Systems** Everyday Energy FAFCO Feather River Solar Electric Fidelity Home Energy Flex Livina Folsom Labs ForeFront Power Fortune Energy FreeWire Technologies Fresco Solar Fronius USA Fusion Power Design, LLC GameChange Solar GCI Solar, LLC. Generate Capital GermanSolar GetTheReferral.com GigaWatt, Inc. Gilmore Heat Air & Solar Gold Electric, Inc. Golden Energy Golden Gate Power GoSolarPros Gr8 Energy Gravbar Green Charge Networks Green Wolf Energy Greensmith Energy Greenwired **GRID Alternatives** Hagadol Solar Harrison Electric & Solar (Sonpower, Inc.) HCI Solar Heliodyne Inc. Helios Renewables High Def Electrical Inc Highlands Energy Home Energy Systems, Inc. Horizon Solar Power Hot Purple Energy Hot4Solar Hoymiles Hyperlight Energy IAPMO

IGS Solar

Impress Labs

Indaspec, LLC

Infinity Energy

Integra Insurance Services, Inc.

International Code Council (ICC)

DRH Solar and Electric

Eco Foundation Systems Inc.

Earth Electric

James G. Parker Insurance & Associates

Owen Dunn Insurance Services PACE NRG Pacific Electric Coop Pacific Energy Company Pacific Land & Energy, LLC Palomar Solar Ltd Pathways Energy Pav-Solar PCL Construction Pegasus Solar, Inc. Peimar Inc Peltons Solar Service PermaCity Construction Corporation Permits? Done! PetersenDean PEMG Solar LLC Pick My Solar Corp. Pickett Solar Pika Energy Planet Solar Santa Barbara POCO Solar Energy Inc. Polaris Energy PowerTree Precision Electric Solar Company Preformed Line Products / DPW Solar Primus Power PROINSO USA Promise Energy, Inc. ProSight Specialty Insurance ProSolar (Professional Solar Products) Pure Power Solutions PV Designers PV Racking PV Technology Inc PV-Cables, Inc. Q Factory 33 Quality Home Services Quant Power Quattro Solar, Inc. Quick Mount PV R.T. Maher Construction Radiant Solar Technology RBI Solar, Inc. REC Solar ReGreen Inc. Rehab Solar Construction Renew Financial Renewable Energy Partners, Inc Renewable Solar, LLC Renova Energy Corp. Renovate America Renvu Solar Equipment Distribution REPOWER Santa Rosa Rod Bergen P.E. Roof Integrated Solar Energy Roof Tech Inc. Rooftop Solar Inc Rosendin Flectric Roy E. Hanson Jr. Mfg. Inc Royal Aire RS Energy Run on Sun S-5! Sadler Solar Safe Fleet Sage Renewables Salal Credit Union San Diego City College San Diego County Solar Sandbar Solar Santa Cruz Solar Santa Ynez Valley Solar Sattler Solar Savenia Solar Ratings

Sawmill Solar Electric

Sean White

Scudder Solar Energy Systems

Scurfield Solar & Heating

Solar Vast

Solar.ai

SolarCraft

SolarFab

Solaron

Solarplaza

Soligent

Sollega Inc.

Seaward Group Semper Solaris SepiSolar, Inc. Shorebreak Energy Developers Sierra College - Energy Technology Dept. Sierra Pacific Home & Comfort Silicon2Solar SimpliPhi Powe Six Rivers Solar Skelly Electric Sky Power Solar Skybridge Renewables SMA-America, LLC. Sol Ecology, Inc. Sol Source Energy Sol Systems Solahart Industries Ptv Ltd SolAqua Inc. Solar Carports Direct Solar Census Solar Connections International Solar Cowboyz Solar Energy Collective Solar Energy Marketing Solar FlexRack Solar Forward Solar Optimum Solar Power Installation and Construction Solar Richmond Solar Roof Dynamics Solar Roof Jack Solar Symphony Solar System, Inc. Solar Technologies Solar Unlimited Inc. Solar Works Solar-Oversight SolaRack Inc. Solare Energy, Inc. SolarEdge Technologies SolarGain West SolarGem Electrical SolarGnosis SolarMax Technology SolarNexus SolarOPS - Radiocap Corp Solarponics SolarReviews.con SolarRoofHook SolEd Benefit Corp Solid California Solid Personnel **157**

SolRates Soltage, LLC. Sonnen Inc. Southwestern Solar Systems Spectrum Energy Development, Inc Spice Solar Spiffy Solar Spruce Finance Inc. Standard Solar Staten Solar Corporation Steca Elektronik GmbH Stellar Solar Stiebel Eltron Sullivan Solar Power Sun Action Trackers Sun Bandit by Next Generation Energy Sun Light & Power Sun Pacific Solar Electric, Inc Sun Solar Electric Sun Solar Energy Solutions Sun X Solar Inc SunCraft Solar SunEarth, Inc. Sungage Financial, Inc. Sungenia Solar Solutions Sunlight Energy Systems Inc. Sunmizer Solar Roofing Systems SunModo Corporation Sunnova Energy Corporation Sunpower Corporation Sunpreme Sunriver Solar Sunrun SunSolar U.S. Inc SunSpark Technology Inc Sunstar SunStreet Energy Group LLC SunSystem Technology Sunthurst Energy, LLC Suntrek Industries, Inc. Sunvalley Solar Sunvapor Sunworks, Inc. Sustainable Technologies Sutton Enterprises Swell Energy Synergy Power

Xero Solar Yaskawa - Solectria Solar Ygrene Energy Fund Your Solar Mate YourSolarPlans, Inc. Zero Energy Synergy Solar & Electrical Systems Inc. Synthesis Construction Corp. T and M Solar Tabuchi Electric Company of America, Limited Talbott Solar & Radiant Homes Inc. TerraVerde Renewable Partners

Tigo Energy, Inc. Titanium Power Tosdal Law Firm TRA Snow and Sun TransUnion Triple Line Solar UC Solar/UC Merced UMA Solar Inc. UNIRAC, Inc. United Sun Energy US Solar Distributing Inc UtilityAPI Vasco Solar Energy Verdera Partners VERT Solar Finance LLC Villara Building Systems Vista Solar Vutiliti Walter Mortensen Insurance/INSURICA Walters & Wolf Glass Co 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. Wunder Capital York Alternative Risk Solutions

The Energy Loan Network, Inc.

The Solar Energy Company ThinkWire Energy Services







TFA Solar







STARTUP









NEW























ROSEN







California Solar & Storage Association STAFF

Bernadette Del Chiaro



Executive Director

Brad Heavner



Policy Director

Meghan Vincent-Jones



Marketing & Development Director

Elise De Grande



Operations Director

Kelly Knutsen



Director of Technology Advancement

Laura Gray



Energy Storage Policy Advisor

Carter Lavin



Membership Director

Josh Buswell-Charkow



Campaign Director

Will Gonzalez



Lobbyist

Donald Simon



Legal Counsel

/endel. Rosen. Black & Dean LLP

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