“It was the best of times, it was the worst of times.” It was a year in which we installed over a gigawatt of consumer-driven solar, and three gigawatts overall; it was a year in which net metering came under attack and we saw other solid western markets—Nevada, Hawaii, Arizona—crumble overnight.

How did California stay intact and readied for continued growth? A strong governor helps. A supportive public and powerful business allies are also key. But a reason that cannot be overstated is the engagement and collaboration of California’s solar industry.

As this report illustrates, CALSEIA members turned out for California Public Utilities Commission hearings from San Diego to Chico. We rallied at the State Capitol in a sea of yellow t-shirts. We lobbied Congress, picking up cell phones and microphones to win bipartisan support for solar. And we expanded our team of top-notch advocates and experienced organizers to enable the solar industry to speak with one unified voice.

No stone was left unturned. We stared down the barrel of a gun and, instead of backing away with hands in the air, we stood our ground and intensified our efforts. We took bullets and our market will continue to grow as a result.

Looking ahead, we cannot rest on our laurels. NEM 2.0 represents a big “haircut,” making cost reductions critical. It also established new battlegrounds such as Time-of-Use (TOU) rate structures. Barriers for commercial solar must be removed. Thermal technologies need a growth path. And, last but not least, giving consumers the tools they’ll need to invest wisely, namely storage, and building a modernized grid that allows for high penetration of solar will be the important work of 2016 and beyond.

While waging these highly successful and highly visible campaigns, CALSEIA also continued its long history of helping our individual members tackle interconnection disputes, permitting obstacles, HOA barriers, and other sundry licensing and regulatory issues. Altogether, this work is helping grow members’ businesses and the California market overall.

Thank you for helping us accomplish so much.

Sincerely,

Richard “Rick” Reed
Board President

Bernadette Del Chiaro
Executive Director
Utilities Attempt to Kill Solar

It was the battle of a decade. The Legislature had directed the CPUC to end the current net metering tariff and create something new. CALSEIA proposed continuing net metering with minimal changes, and the utilities proposed changes that would have decimated the market. We went blow for blow inside the CPUC on technical filings while launching a campaign to mobilize public support.

CALSEIA wrote or collaborated on more than 700 pages of technical and legal analysis. We cross-examined utility witnesses, presented oral arguments, and funded outside research. We presented our case in direct meetings with CPUC staff.

Demonstrating Popular Support

The public campaign reached far and wide. We got the media solidly on our side and generated 86 stories. This included favorable editorials from major papers throughout the state. Together with our solar allies, we sent the CPUC letters of support signed by farmers, local elected officials, affordable housing groups, job training organizations, environmental justice groups, faith communities, and tribes. We turned in 150,000 petition signatures, nearly three times as many as the CPUC had ever received on any issue. We helped organize five rallies with hundreds of cheering supporters.

In the end, the CPUC ordered three changes to net metering – an application fee, a fee to support public-purpose programs, and mandatory time-of-use rates for residential customers. But it preserved net metering rather than changing to a structure that values solar at a low rate. After the ITC was extended there was tremendous pressure to weaken the proposed decision, but we were able to convince the CPUC to stay strong.
Keep Solar Jobs Growing

On December 18, 2015, Congress passed a multi-year extension of the federal solar investment tax credit (ITC). Thanks to an extensive campaign by CALSEIA, the policy received broad bipartisan support by California’s congressional delegation and was backed by consumers from farmers in the Central Valley to high tech in Silicon Valley.

The ITC is a 30% federal tax credit for solar installations on both residential and commercial properties, and is one of the most important policy mechanisms to support the deployment of solar energy in the United States—helping create good-paying jobs, spur economic growth, and lower energy bills. The 30% ITC was scheduled to expire on December 31, 2016, posing a serious threat to the growing California solar market and our 75,000+ solar workers.

To keep our solar jobs growing, CALSEIA launched our “Fight for the ITC Campaign.” We worked closely with CALSEIA members and our SEIA colleagues in D.C. to secure the support of the ITC from our U.S. Representatives. We helped coordinate district meetings, tours and events with Representatives and staff; organized letter and phone campaigns; and secured local press coverage by Bakersfield NBC 17, Fresno ABC 30, and Valley Public Radio. We built state and local support—even in unexpected places. The state legislature passed a solidly bipartisan ITC resolution, Bakersfield became the first city in the nation to officially support the ITC, and the Bakersfield Chamber of Commerce also endorsed its extension.

The ITC wasn’t passed with California support alone, but our effort was a major component of this national victory.
Customer savings from solar are directly related to rates, and net metering does not provide value without favorable rates underneath it. CALSEIA is committed to maintaining rates that work for solar while also creating new tariffs that work for storage.

SDG&E AND TOU

SDG&E proposed to change its summer peak period in all TOU rates to 2-9 pm. CALSEIA argued that the change would go too far too fast, and that SDG&E’s data simply did not support its proposal. The judge agreed, but directed SDG&E to make another proposal in its next general rate case. Their new proposal will be discussed throughout 2016.

PG&E’S A-6 COMMERCIAL RATE

PG&E proposed to reduce eligibility in A-6, their most solar-friendly commercial rate. Currently, customers with maximum demand up to 500 kW can use the tariff, but PG&E proposed to reduce the threshold to 75 kW immediately. CALSEIA intervened to support continuing the current rules.

A CPUC judge proposed to rule in favor of PG&E. After we protested that action a different judge sided with us. Medium-sized commercial customers will continue to be able to opt into A-6 until December 31, 2016, and all customers on the tariff will be grandfathered for at least five years after that. In 2016, we turn our attention to creating a good alternative to A-6 after it closes.

RESIDENTIAL RATES

AB 327, which passed in 2013, opened the way for a flatter tier structure in residential rates in order to reduce the bills of high usage customers. It also gave the CPUC the ability to consider new fixed charges for residential customers. CALSEIA supported the concept of tiered rates, but did not protest loudly about tier flattening because steeper tiers would have hurt us on maintaining net metering. We did fight against fixed charges, and the CPUC adopted a minimum bill instead of a fixed charge.
If you ever feel like you get the runaround from utilities when trying to interconnect large customer-sited solar systems, you are not alone. After hearing many complaints about utilities taking too long and charging too much, CALSEIA launched an initiative to address the problem systematically.

We have met repeatedly with the utilities and the CPUC. The direct meetings with PG&E have been productive. They have cleared some specific hurdles and are making efforts to improve efficiency. Our next focus will be SCE.

The CPUC has been solidly helpful, particularly in clarifying the rules for NEM Aggregation. Meter aggregation has opened the door to solar for many customers, especially farmers, who previously were unable to make solar work. Utilities have resisted meter aggregation by disallowing properties with canals running through them, denying applications due to spelling differences in account holder names, and more. CALSEIA convinced the CPUC to clarify the rules in our favor.

CALSEIA also worked collaboratively with all three IOUs to increase predictability of interconnection costs. We filed a joint motion in November to expand the pre-application report to make more information available before submitting an application and going through engineering studies. The motion also proposes a unit cost guide. If approved, utilities will publish an annual list of cost benchmarks that will help us develop accurate proposals and make their cost estimating more transparent.

For smaller systems, after a multi-year debate PG&E and SCE began following SDG&E's lead with an online NEM application system that automates much of the process. Interconnection timelines have improved dramatically as a result.

“CALSEIA’s success in removing barriers to interconnection has allowed our company to build projects that would not have been possible otherwise.” – Nic Stover, CEO, CalCom Solar
CALSEIA’s petition to increase rebate levels in the CSI-Thermal program was approved in January 2015. It then took another five months to implement the decision and incorporate changes into the rebate calculator.

In the end, we finally achieved a program that is functional for some market segments in the context of low natural gas prices. Since rebates were raised, program activity has increased greatly. Customer adoption of solar water heating is still far below its potential, but the recent trend is encouraging. December saw eight times as much solar activity as when the incentive increase took effect, measured in energy savings.

Now that the program offers incentives that work, CALSEIA has begun exploring options for extending rebates beyond the current funding, which expires at the end of 2017. The California Public Utilities Commission has resisted our attempts to dedicate cap and trade revenue to programs that reduce emissions, so we have been developing support at the California Air Resources Board and the California Energy Commission to create incentives for solar water heating. Zero net energy building codes could be a strong policy in the long run, but bridge funding is still needed to continue developing the industry.

CSITHERMAL PROGRAM ACTIVITY

“My business got a major boost after CALSEIA successfully pushed for higher rebate levels...quite necessary to counter the low cost of natural gas.”

- Ted Bavin, President/CEO,

All Valley Solar
HEALTH & SAFETY
CALSEIA was well represented in regulatory decisions made by the California Division of Occupational Safety and Health (Cal/OSHA) in 2015. We petitioned and won passage of first-ever fall protection rules for skylights, protecting our workers and industry from unnecessary accidents. We also provided solar industry comments on new heat illness rules and repeat violations rules, and began work on residential fall protection rules that will be continued in 2016.

Streamlined Solar Permitting
AB 2188 (Muratsuchi), which mandated streamlined permitting, is now in effect throughout the state. While compliance in many jurisdictions is promising, too many jurisdictions have fallen short of the requirements outlined in the California Solar Permitting Guidebook. In 2015, CALSEIA worked with a team of experts on implementation problems, and found that in most cases, a little education went a long way.

AB 2188 compliance is an ongoing process. Unfortunately, we have seen some AHJ’s implement new and complex requirements that often increase costs while offering little value. To resolve these issues, CALSEIA has joined SEAC (Solar Energy Action Committee) and is working with building officials from Southern California to establish clear guidelines on codes, standards, and permitting requirements to help our members resolve common permitting issues. In 2016, we hope to extend this work throughout the state.

Putting Out the Fire on UL 1703
CALSEIA was on the front lines of fire guidelines in 2014 and worked with the California State Fire Marshal to delay implementation of the new fire classification rules until the PV systems could complete the new testing procedure. In 2015, CALSEIA launched an education campaign using online and in-person trainings. CALSEIA also developed an on-line database of fire-classified systems with a comprehensive explanation used by many building officials throughout the state to evaluate fire classification compliance. Our proactive work to help ease the debut of new fire classification requirements was successful, and feedback from building officials and industry members was overwhelmingly supportive of our training resources.

Go to www.calseia.org/ul-1703-compliance-database to view a comprehensive list of 1703-compliant products.
Not all Californians live in single-family homes. And, not all of them have perfect credit scores. Yet, our political leaders want to see solar in all California neighborhoods, and so do we! However, despite all of our progress expanding access to solar, California policies still exclude or even create barriers to our ability to put solar in the hands of everyone. In 2015, CALSEIA worked to address this problem on multiple fronts and to great effect.

$1 Billion Over 10 Years
CALSEIA worked closely with allies in the environmental justice community to pass AB 693 (Eggman), “the biggest quietest bill of the year,” creating a dedicated $1 billion pot of money to incentivize solar on low-income multi-family housing projects through 2030. The program is designed to directly benefit tenants more effectively than MASH, as well as help cover common-area load. The CPUC will begin a proceeding to implement the new program in 2016 with rollout expected in 2017.

Virtual Net Metering
CALSEIA has teamed up with the Center for Sustainable Energy (CSE) and Interstate Renewable Energy Council (IREC) to study California’s market for virtual net metering projects on market-rate multi-family housing. While the NEM-V tariff has been available since 2011, very few contractors are using it. To study why, and lay out recommendations for how to overcome the market entry barriers, we published a white paper on the topic and worked with CSE to begin a pilot project, Friends of NEM-V, in Santa Monica. As part of NEM 2.0, CALSEIA was already successful at removing one key barrier to NEM-V adoption by relaxing the eligibility requirements for participating customers.
Enabling More Solar

Smart Grid Reform
As the percentage of solar in the state electricity mix goes up, the electric grid will need to evolve. If we do not make progress on grid modernization quickly enough, it will limit our ability to interconnect systems.

The CPUC is currently undertaking multiple initiatives to head toward a smarter grid. A roadmap on distribution system planning is pushing the utilities to account for the local benefits of distributed generation. A separate proceeding is developing tariffs to encourage the right resources in the right places. The Smart Inverter Working Group is developing standards for advanced inverter functionality. CALSEIA represents the solar voice in these forums.

Storage Rebates
The 2014 legislation reauthorizing the Self-Generation Incentive Program called for multiple reforms to the program. This includes requirements that rebates are limited to technologies that reduce greenhouse gas emissions and technical standards for system operation.

Last year, CALSEIA successfully argued for the SGIP budget to be set at the full authorized amount of $83 million per year. We have since advocated reducing the number of eligible technologies to focus spending on energy storage and other technologies that have the potential to become major elements of the state energy mix if they are given a financial boost.

Looking forward, we will be engaged in developing tariffs that create a value stream for investments in energy storage and making sure that solar paired with storage gets fair treatment in implementation of the new net metering tariff.

Some manufacturers are already programming advanced functionality into inverters sold today. This will become mandatory next year, and tariffs to compensate customers for grid support are under development.
Mobilizing the Grassroots

**Lobby Days**
CALSEIA held two lobby days in 2015. The first one, in March, was attended by industry executives who met with 50 members of the Assembly and Senate. In August, we helped organize the Solar Worker Lobby Day that brought over 200 workers from 60 companies to Sacramento. Together, we met with over 90 offices and educated legislators and their staff about the need for legislative certainty for the rooftop solar market.

**#DontBlockTheSun**
Along with a large coalition of supporters, CALSEIA helped organize rallies across the state in San Diego, LA, and San Francisco, with the battle cry of “Don’t Block The Sun” to stand up to the utilities’ proposals to gut net metering. CALSEIA also took part in a historic delivery of 130,225 written public comments in support of net metering. This is the largest outpouring of public support for any issue deliberated by the CPUC - so much in fact that the signatures had to be wheelbarrowed into the hearing by solar supporters. Over 20,000 more were gathered in the subsequent weeks. This was the largest grassroots effort in CALSEIA history.

**SOLAR JOBS**
75,598 people are employed in California’s solar industry according to The Solar Foundation - that's more than the 5 largest utilities combined!

CALSEIA Member, Don Osborn (Spectrum Energy) speaks to Sacramento media about the importance of net metering.
CALSEIA
LEADERSHIP

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Rick Reed, SunEarth Inc.

Vice President
Jeanine Cotter, Luminalt

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Hilary Pearson, Sungevity
Jeff Spies, QuickMount PV
Les Nelson, IAPMO
Nic Stover, CalCom Solar
Pat Redgate, AMECO Solar
Sanjay Ranchod, SolarCity

REGIONAL CHAPTERS

Thanks to our regional chapter leaders:

Alistair McCabe, SunUp - San Diego
Tara Kelly, Sullivan Solar Power - San Diego
Ryan Carney, Center for Sustainable Energy - San Diego
Martin Learn, Home Energy Systems - San Diego
Eddie Price, Grid Alternatives - San Diego
Ron Mulick, Solartronics - Los Angeles
Michael Kahn, Kahn Solar - Los Angeles
Stephen Jenkins, Advanced Conservation Systems - Inland Empire
Jack Ramsey, Altsy Solar - Central Valley
Jeff Brown, Sol-Tek - Central Valley
Ed Lainez, Mounting Systems Inc. - Sacramento
Becca Russel, Grid Alternatives - Sacramento
Rachel Van Wert Bird, Leadership for a Clean Economy - Bay Area
Randy Zechman, Clean Solar - Bay Area
Jeff Mathias, Synergy Solar - North Bay
John Parry, Solar Works - North Bay
Peter Renfro, Westcoast Solar Energy - North Bay
2015 EVENTS

In 2015, over 3,000 people attended CALSEIA's many events throughout the state. In addition to continuing successful events like Solar Summerfest and the holiday parties in San Diego and Oakland, we added two new events including the North Bay Golf Tournament and the Annual Dinner. These events raised $390,213 combined.

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

2015 Members by Business Type

4 S.T.E.L. Engineering, Inc.
510 Solar
A-C Electric Company
A.M. Shine Solar
Absolutely Solar, Inc.
ACR Solar International, Corp.
Advanced Conservation Systems, Inc.
Advanced Solar Solutions Inc.
AgEnergy Systems
Agua Del Sol
All Valley Solar Inc.
AllianceNRG Program
Alpha Energy Management Inc.
AlsoEnergy
Alternative Energy Systems
Alsys Solar Inc.
Ameco Solar Inc.
American Solar Direct
American Solar Power Inc.
APG Solar
Applied Energy Technologies
Applied Solar Energy Solutions
Apricus, Inc
Aquatherm Industries
Aram Solar Inc.
Arire Solar
Arraycon
Artisan Design Group
ATE Solar Corp
Avail Services
Avalon Battery
AWS Electrical & Solar Inc.
Aztec Solar
Baker Electric Solar, Inc.
BannerSolar
Battery Systems Inc.
BayWa r.e. Solar Systems LLC
Bland A/C and Heating, Inc. dba
Bland Solar and Air
BMC Solar
Booth Construction
Bozzuto & Company Insurance Services
Bright Harvest, Inc
Bright Power
BrightCurrent
Brightline Defense Project
Brighton Energy
Brooks Engineering
BTA Solar
Burnham Energy Inc.
California Commercial Solar
California Solar Electric
California Solar Electric Co.
California Solar Systems, Inc.
Capital City Solar
CEC Greentech
Cenergy Power
Centauri Energy, LLC
Center for Climate Protection
(Solar Sonoma County)
Center for Sustainable Energy
CertainTeed Corporation
Chaolysti
Chico Electric
Chico Solar Works
Chint Power Systems
CitiWatt
CivicSolar
Clean Energy of America Group
Clean Energy Solutions of CA
Clean Power Research, L.L.C.
Clean Solar
CleanTech Law Partners
Coastal Constructors, Inc.
Cobalt Power Systems
CohnReznick LLP
Conergy
Cosmic Solar
Darfon America Corp.
Davis Wright Tremaine
Diablo Solar Services
Direct Energy Solar
Dirt-Free Power, Inc.
Domino 2030 Inc.
Draker
DRH Solar and Electric
Ecilirium Solar
EcoVolt Finance LLC
Element Power Systems, Inc.
Elite Solar
Energy Toolbox
Enphase Energy Inc.
EnSync Energy Systems
EnterSolar
Environmental Solar Design
Everest Solar Systems
Everyday Energy
Extensible Energy
FAFCO
Feather River Solar Electric
Fusion Power Design, LLC
GAF
GCI Solar, LLC.
Geli
Gestamp Solar
Gigawatt
GMA Solar Inc.
Golden Gate Power
GoSolarPros
Graybar
Green Charge Networks
Greenwired
GRID Alternatives
Hanergy America Solar Solutions
Hansol Technics
Harrison Electric & Solar
Haskell & White LLP
Hecate Energy
Heliodyne Inc.
Helios Renewables
Heritage Solar, Inc.
Highlands Energy
HiQ Solar
Home Energy Systems, Inc.
Honey's Air & Solar Inc.
Hot Purple Energy
Hot Sun Industries Inc
Humless
IAPMO
Indaspec, LLC
Independent Energy Solutions
Inovus Solar
Integra Insurance Services, Inc.
International Code Council (ICC)
IRFTS Easy Roof
IronRidge
iTek Energy
Itron
J&D Energy
Judy Staley
JuiceBox Energy
Kahn Solar
Keyes, Fox & Wiedman LLP
Kinsman Solar Power Systems Corporation
Kranich Solar West
Kunos Energy
Kyocera Solar Inc.
LA Source Consulting
Laplace Systems, Inc.
Leadership for a Clean Economy
Legacy Risk and Insurance Services
Lifestyle Solar, Inc.
Luminalt Energy Corporation
Magic Sun Solar Inc.
Mataadors Community Credit Union
McCalmont Engineering
Mendocino Solar Services
Meteocontrol North America
Mid-State Solar
Milholland Solar & Electric
Mimeos Sustainability Consultants
Mission Solar Electric
Mitsubishi Electric, US Inc.
ModSpace
Mohr Power Solar
Mosaic
Mounting Systems, Inc.
NABCEP
Namaste Solar

Contractor, Project Developer, EPC
Manufacturer
Service Provider
Consultant, Designer, Engineer
Distributor/Supplier
Financial Entity/Bank
Nonprofit, Government, or Educational
Law Firm
MEMBERS 169
NEW MEMBERS
331 MEMBERS
77% MEMBERSHIP GROWTH

THANK YOU TO OUR
2015 PRESIDENT’S CLUB MEMBERS

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