In 2021, the solar and storage industry of California showed mettle. Faced with repeated attacks on multiple fronts, the nation’s largest group of clean energy businesses rose to meet those threats head-on, all while installing more behind-the-meter solar as well as more behind-the-meter storage statewide than in any previous year. All this amidst a continuing global pandemic, supply chain crisis, and economy-wide worker shortages.

The “best of times, worst of times” story of 2021 is not surprising. Greater numbers of consumers demanded cleaner, more reliable energy in 2021 than ever before and the industry met that demand with ever-improved products and services. Meanwhile, having “been to this rodeo before”, the distributed solar and storage industry recognized the anti-competitive threats coming from the utilities, and quickly mobilized itself and its consumers to fight back.

What made 2021 unique was both the scope and scale of the attacks. Net metering, a foundational policy, was attacked in rapid-fire succession at the Public Utilities Commission (CPUC), in the legislature, and at the state’s 5th largest utility, SMUD, in Sacramento. In addition, the utilities went after contractor licensing at the Contractor State Licensing Board (CSLB).

What’s more, the utilities executed this multi-pronged attack not as themselves – unpopular messengers in the proverbial public square – but through a small group of surrogates: the union, the professor, the ratepayer watchdog, and the environmental group. The big three – Sempra, Edison, and PG&E – made a Machiavellian attempt to once and for all shove “the competition”, as they see it, over a cliff.

But the CALSSA community rose to the challenge and not only fought back directly but, for the first time, helped to mobilize our consumers to come down onto the battlefield and fight for themselves as well. The results were spectacular – defeating a seemingly invincible bill, getting Governor Newsom to disown the tarred and feathered solar tax, and winning a legal battle at the CSLB.

On the following pages, you’ll read some of the highlights of this past year. There is much to be proud of. Yet, as we write this letter, the fight continues unabated. So far, 2022 is shaping up to be an even bigger year – both the good and the bad – than 2021. Amidst all this turmoil and hullaballoo stands the power of working together. Thank you for your support.

Onward and upward!

Bernadette Del Chiaro
Executive Director

Ed Murray
Board President
OUR TEAM

Bernadette Del Chiaro
Executive Director

Brad Heavner
Policy Director

Elise De Grande
Operations Director

Josh Buswell-Charkow
Deputy Director

Carter Lavin
Membership Director

Meghan Vincent-Jones
Marketing Director

Ben Davis
Policy Associate

Kate Unger
Senior Policy Advisor

Igor Tregub
Senior Policy Advisor

Leo Wallach
Public Relations
RALLY

Kim Stone
Lobbyist
Stone Advocacy

Donald Simon
Legal Counsel
Wendel, Rosen, Black & Dean LLP
2021 MEMBERS (con’t)

Mission Solar Electric
Mission Solar Energy
MMCiSolar
Modernize Power
Mohr Power Solar
Momentum Solar
Morpho Energy
Mosaic
mPower Energy
Mr. Roofing
Mynt Systems
naak Power Partners
NABCEP
Nabu Energy LLC
Nationwide Sun
Natron Resources Inc.
NeoVolta
New Day Solar
New Gen Energy Corporation
Newfront Insurance
Newport Power
Nexamp, Inc.
Next Energy
Next Phase Electric
Next Solar Inc
Nexus Solar
Nor Cal Solar
NorCal Home Systems
North Bay Solar Services
North Coast Solar (Energy Equity)
Northern Electric and Power LLC
Northern Pacific Power Systems
Nova West Solar
NovaSolix, Inc
Noyo Electric and Solar
npc Solar
Nuance Energy Group, Inc.
NuLife Power
Navation Energy
O’Connell Solar Consulting
O&M Solar Services, LLC
Occidental Power Solar & Cogen
Ohm Analytics
OMG Roofing Products
Omini Energy Solutions, Inc.
Omnidian
Onswitch, Inc.
OpenEGrid
OpenSolar
Option One Solar
Orange County Photovoltaics
Origami Solar Inc.
OutBack Power
Owen Dunn Insurance Services
P.J. Erwin Electric
Pacific Energy Company
Pacific Power Solutions
Pacific Power LLC
Packetized Energy
Paladin Power Inc
Palmetto Clean Tech
Palomar Solar Ltd
Panasonic Corporation of North America
Pathon
Pause Grid
PCL Construction
Peak Demand Inc
Peak Power USA
Pearl Certification
Pegasus Solar, Inc.
People Power Solar Cooperative
PermaCity Corp
Perpetual Power
Photon Brothers
Photon Stellar
Photosol US Renewable Energy
Photovoltaics California
Pick My Solar Corp.
Pickett Solar
Pioneer Solar
Pivot Energy
Planet Plan Sets
Planet Solar Inc
PlexiSun Ltd
POCO Solar Energy Inc.
Polar Solar
POMCube Inc.
Portable Solar Inc.
Power-Structures LLC
Powers Engineering
Powersmarts
PowerTree
Powur
Premo Roofing & Solar
Prologis
Promise Energy, Inc.
ProSolar (Professional Solar Products)
Pure Power Engineering
Pure Power Solutions
PV Designers
PV-Cables, Inc.
PVComplete Inc.
PVH (PV Hardware)
PYCEM, INC.
Q CELLS
Quality Home Services
Quativa
Quattro Solar, Inc.
Quest GeoSystems Management, Inc.
QuickBOLT
R.T. Maher Construction
Radiant Solar Technology, Inc.
RaGen Energy Partners
Raneri & Long
RBI Solar, Inc.
RCA Electric
RE-volv
Ready Home Energy
Real Goods
REC Americas LLC
Redaptive
Redwood Energy
Rehab Solar Construction
Reimagine Power
Rem Electric
Rem Financial
Renewable America
Renewable Construction Services Inc.
Renewable Energy Partners, Inc
Renewable Energy Test Center, RETC LLC
Renewable Solar, LLC
Renova Energy Corp.
Renuv Solar Equipment Distribution
Repower Yolo
RePurpose Energy
Revel Energy
Rexel Gexpro
RHC
Rheem Manufacturing Company
Rise Energy
Rivian
Rod Bergen P.E.
Ron Dorris Electric & Solar
Roof Tech Inc.
Rosendin Electric
RowCheck
RST CleanTech USA
Run on Sun
S-SI
S-PACE
Sage Energy Consulting
San Diego County Solar
San Diego Solar Inc.
Sandbar Solar
Santa Cruz Solar
Sattler Solar Inc.
Saveco Solar
Sawmill Solar Electric
SC-RISE, CE-CERT
Scale Microgrid Solutions
Scanify, Inc.
Schneider Electric
Scudder Solar Electrical Energy Systems
Scufield Solar & Heating
Seal Bond
Second Life Lithium
SEG Sustainable Energy Group
Select Solar Professionals
Semper Solaris
SepiSolar, Inc.
Service Finance Company LLC
Sespe Power Solutions
Shade Power LLC
Shorebreak Energy Developers
Sierra Pacific Home & Comfort
Silfab Solar
Silverline Home Remodeling Inc
Simmitri
SimpliPhi Power
Simply Solar
Sky Power Solar
SLO Sun Energy
SMA America, LLC.
Smarter Grid Solutions
Socomec
Sol R US Electrical Engineering
Sol Rebel
Sol Systems
Sol-Ark
Sol-Tek Industries, Inc.
SolAdvisor
Solahart Industries Pty Ltd
Solar Bill Review
Solar Carports Direct
Solar CFO
Solar Deployed LLC
Solar Design Studio
Solar Energy International
Solar FlexRack
Solar Forward
Solar Gain West
Solar Harmonics
Solar Insure, Inc.
Solar Lead Profits
Solar Motion
Solar Optimum
Solar Power Supply
Solar Price Discovery Inc
Solar Pro Energy Systems
Solar Recombiner, Inc.
MEMBERS

NEW MEMBERS

80% OF CA PV PROJECTS INSTALLED BY A CALSSA MEMBER

79% OF CA STORAGE PROJECTS INSTALLED BY A CALSSA MEMBER

Sunbrook Solar Power & Electrical Systems
Sundam Energy
SunEarth, Inc.
Sungage Financial, Inc.
Sungenia Solar Solutions
Sungenix Energy Solutions
SunGreen Systems Inc.
Sunlight Financial
Sunlight Solar Inc
SunMade Energy
Sunmizer Solar Roofing Systems
SunModo Corp.
Sunnera
Sunnova Energy Corporation
Sunny Solar Power
SunPower by esaSolar
SunPower By Sun Solar
Sunpower Corporation
Sunpro Solar
Sunpro Solar Inc
Sunrise 805
Sunrise Solar Company
Sunriver Solar
Sunrun
SunSolar U.S. Inc.
SunSpark Technology Inc
SunSpec Alliance
SunSystem Technology
Suntegrity Solar
Sunterra Solar Inc
Sunthrust Energy, LLC
Suntrek Industries, Inc.
SunVantage
Sunwealth Power Inc.
Sunworks, Inc.
Sustainable Technologies
Sutton Enterprises
Swell Energy
Sweezey Energy Consulting
Symetric Energy LLC
Synergy Home Improvement
Synergy Power
Synergy Solar & Electrical Systems Inc.
Synergy768
Syserco Energy Solutions, Inc
Tamarack Solar Products
Tangerine+
Taylor Energy Systems, Inc.
Tenco Solar, Inc.
TerraCurrent
TerraVerde Energy, LLC
Tesla
The Climate Center
The Energy Coalition
the r&d lab
The Solar Contractor
The Solar Energy Company
The Solar Quote
ThinkWire Energy Services
Tiert Power
Tigo Energy, Inc.
Titanium Solar LLC
ToolBelt, Inc.
Transform Energy

Transform Power
Transform
Treepublic
Triad Power Solutions LLC
True Power Solar
TruSource Energy
UL LLC
UMA Solar Inc.
Unico Solar Investors
Unified Solar and Roofing
Unique Solar
UNIRAC, Inc.
UnThink Solar
US Green Energy Technologies Inc.
US Solar Distributing Inc
UtilityAPI
V3 Electric
Vasco Solar Energy
Vector Green Power and Materials LLC
Vector Structural Engineering
Verdera Partners, Inc.
Veregy
Verse
Villara Building Systems
Vital Energy
Volt Modern
Voltaic Power
VSUN SOLAR USA INC
Walter Mortensen Insurance/INSURICA
WattMonk
Watts Battery Corp
Watts New Under the Sun, Inc.
We Recycle Solar
Weber Energy Group
Wendel Rosen LLP
Wenger Ventures
WESCO Distribution
West Coast Project Management
Westcoast Solar Energy
Westhaven Solar
WG Contracting
White Pine Renewables
William S Adelson Consulting
Wing Solar & Wood Energy, Inc.
Wired Into the Future Inc.
Wivy Inc
Wunder Capital
XCG Solar LLC
Xero Solar
Yaskawa - Solectria Solar
Ygrene Energy Fund
Yotta Energy
Your Energy Solutions
Your SolarMate
YourSolarPlans, Inc.
Zenernet
Zero Down Solar Inc
Zilla Corporation

Solar Renewable Energy
Solar Richmond
Solar Sense Direct
Solar Self-Install
Solar Source Inc.
Solar Support Structures
Solar Symphony
Solar Technologies
Solar Tools USA
Solar Unlimited Inc
Solar Vast
Solar Wholesale Group
Solar Works
Solar-Log by Solar Data Systems
SolarCraft
Solare Energy, Inc.
Solare Power
SolarEdge Technologies
SolarGem Electrical
SolarGnosis
SolarHut, LLC
Solaria
Solaris Energy
SolarNexus, Inc.
SolarNorcal, LLC DBA Excite Energy
SolarOPS - Radiocap Corp
Solarponics, Inc
SolarReviews.com
SolarShoppers
SolarWakeUp
Solid California
Soligent
SolMicroGrid
SolRx Energy
Soltection
Soitell Systems
Sonnen Inc.
SoundView Risk Advisors
Source Solar, Inc.
Span.IO
Spectrum Energy Development, Inc
Spreck Energy
Sprg Electric
Stable Solar, Inc.
Stada Energy
Standard Solar
Star GREC LLC
Station A, Inc.
Steiner’s Solar
Stellar Solar
Stem, Inc.
Storz Power
Summit Technology Group, Inc.
Sun Light & Power
Sun Pacific Solar Electric, Inc
Sun Solar Electric
SUNAI Inc
Sunbank Solar, Inc.
The Net Metering “3” fight got underway in January and continued at an unprecedented pace through December. CALSSA, together with a coalition that grew in numbers and strength throughout the year, led the campaign to defend California’s solar and storage market from attacks by the investor-owned utilities and their political surrogates.

At the California Public Utilities Commission, there were 29 organizations and businesses participating in the proceeding, the biggest and most powerful of which were lined up against us. CALSSA submitted over 25 filings totaling more than 1,000 pages and participated in 2.5 weeks of oral arguments and cross examination of witnesses. Because our opponents were well-resourced, our work had to be even more carefully researched and written than usual.

Outside the CPUC, we helped organize the largest and most powerful clean energy coalition in California history that garnered national and statewide media attention throughout the year. Together, we defeated what was thought to be a seemingly invincible anti-solar bill in the legislature, and helped build a diverse and active coalition that included 26 members of congress, 22 state legislators, over 100 local elected officials and city councils, over 100 democratic party delegates, and more than 400 community, faith, equity, environmental, climate, and labor unions.

These photos and timeline capture just a fraction of the coalition-wide work and activity from 2021.

<table>
<thead>
<tr>
<th>January</th>
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<tbody>
<tr>
<td><strong>SAVE CALIFORNIA SOLAR</strong></td>
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<tr>
<td>Campaign Launched and website created: SaveCaliforniaSolar.org</td>
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<tr>
<th>February</th>
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<tr>
<td>Public Opinion Poll: 80% of voters support NEM</td>
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<th>March</th>
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<tbody>
<tr>
<td>Parties Submit NEM 3 Proposals: IOUs Push Solar Tax &amp; 5 Cents Export Credit</td>
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<tr>
<td>The Fresno Bee: “Solarpower is the future. So why might California regulators make it less appealing?”</td>
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<th>April</th>
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<tr>
<td>Former CPUC Commissioner turned PG&amp;E lobbyist, in LA Times: “California has outgrown its solar rules. Utilities want a fairer system.”</td>
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<tr>
<td>AB 1139 (Anti-NEM bill) introduced. First Committee Hearing Passes 12-0</td>
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<th>May</th>
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<tr>
<td>Sacramento Bee: “Jonathan Scott: California must protect rooftop solar from utilities’ agenda.”</td>
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<tr>
<td>No on AB 1139 Rally &amp; Motorcade</td>
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<tr>
<td>AB 1139 Passes 2nd Committee 10-4</td>
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</tbody>
</table>
June

Utility Profit Grab Protest at CPUC

AB 1139 is defeated on Assembly Floor! Vote of 27 yes - 27 no - 25 abstain

Solar Power World: “CA assembly bill attempting to alter net-metering credits fails to move forward.”

July


Testimony For and Against NEM 3 Proposals

August

Clack Report Released Showing Rooftop Solar Will Save $120 billion

Closing Arguments For and Against NEM 3 Proposals

September

400+ Coalition Letter Supporting NEM Submitted to CPUC & Governor

Los Angeles Sentinel: “Policymakers should support policies that make it more affordable for everyone to access rooftop solar.”

October

TV, Radio Ad Campaign Begins

November

Orange County Message in Sand “Gov: Solar, Not Oil”

December

LAT Editorial: “Don’t turn the lights out on California’s solar rooftop revolution.”

Los Angeles Times

Editorial: Don’t turn the lights out on California’s solar rooftop revolution

IN THE TIMES EDITORIAL BOARD

April 5, 2020, 8:44 AM

California is betting big on a not-too-distant future in which burning fossil fuels to fuel homes or propel cars is just a bad memory, and all power comes from clean, renewable sources like the sun, wind and water. It’s a bold goal that will require visionary and sometimes uncomfortable leadership to achieve.

CPUC Issues Proposed Decision: $700/year Solar Tax + 5.6 cent Export Credit

Human Billboard 100k Public Comments Delivery Event
2021 PROGRAM HIGHLIGHTS

Net Metering
The battle of NEM-3 dominated CALSSA’s work in 2021, as described on the preceding pages. It is hard to overestimate the organizational strain this caused, but somehow we managed to engage in many other important policy debates.

Contractor Licensing
The Contractors State Licensing Board voted to restrict C-46 solar contractors from installing energy storage in July, effective in 90 days. In response, CALSSA took the unprecedented action of suing CSLB alleging this decision was an illegal underground regulation. CSLB stayed their decision as a result of our lawsuit, and is overseeing a stakeholder negotiation that will continue to demand a lot of our time and attention in 2022.

Virtual Power Plants
At the end of 2020, there were 760 MW of customer-sited energy storage installed in California. This is collectively the biggest battery in the world and enough to forestall a statewide energy shortage. CALSSA submitted a proposal for virtual power plants in a program that compensates customers for discharging batteries when the grid is nearing blackout conditions. Elements of the proposal were included in a new summer reliability pilot program, but much work continues to be needed to compensate customer systems as a grid resource.

In a series of 35 meetings throughout the year, CALSSA negotiated new real time pricing rates with PG&E, and also pressed for such rates for SCE and SDG&E. Hourly rates set the day before will allow aggregators to provide additional savings to customers with energy storage.

New Construction Mandate
We worked with the California Energy Commission to refine their proposal for a solar and storage mandate for new commercial buildings and to see it through to adoption despite strong opposition. The mandate takes effect for permits pulled after January 2023, and is projected to lead to 280 MW of additional solar and 400 MWh of additional energy storage. CEC also adopted our proposal for storage-ready homes.

Permitting
SolarAPP officially launched in 2020, with Pleasant Hill as the first jurisdiction to go live in May and three others following by year’s end. CALSSA has worked with the National Renewable Energy Laboratory for several years to create this automated permitting software for small solar and energy storage systems. In the Legislature, we won approval for a new $20 million grant program to help cities and counties adopt SolarAPP.

Codes and Standards
CALSSA sponsored and passed AB 1124 to change the definition of solar in several laws to include canopies and shade structures. These systems are now subject to the caps on permit fees, and jurisdictions cannot deny them for reasons outside of health and safety issues.

Our proposal for vehicle impact protection for batteries in garages was codified into the 2024 International Fire Code, and we then got it incorporated into California code beginning
January 2023. The code was ambiguous previously and some jurisdictions were imposing unreasonable requirements in nearly all garages. The updated code exempts batteries on side walls and the top half of the back wall in most cases, and limits the bollard or curb size if they are required.

CALSSA also launched a proposal to decrease spacing requirements for battery placement that will come to a vote next year.

Interconnection

The CPUC issued the last of four decisions adopting 82 changes to Rule 21 and related interconnection practices that have been negotiated in a process spanning four years. Implementation of those changes is ongoing, and includes documenting and improving timelines, using power control systems to ensure export limits, screening projects according to transparent hosting capacity values, and a simplified application process for solar on new construction. We also helped reduce new interconnection fees for LADWP.

Solar Water Heating

We helped design a new residential solar water heating incentive program for SoCalGas that went live in December. After the end of the CSI-Thermal program in 2020 California did not have any solar thermal programs. We hope to expand the SoCalGas program beyond single-family residential and use it as a model for other utilities. In the 2022 building standards update, we convinced the California Energy Commission to give more envelope compliance credit for buildings with solar water heating.

Legislative

CALSSA monitored hundreds of bills in Sacramento, some helpful and some harmful for solar and storage. In addition to those mentioned above – the anti-NEM bill, the solar canopy bill, and $20 million in the budget for SolarAPP – we worked on legislation that impacts the new construction mandate, storage funding, virtual power plants, main panel upgrades, PV recycling, electric system planning, PACE funding, microgrids, and much more.

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.
CALSSA’s six Chapters are where professionals from across the storage, PV, and thermal value chain get together, network, share best practices, and learn about the latest industry developments. We continued to keep these events virtual in 2021 as we had for most of 2020 with 18 total meetings. Among the topics discussed were the Net Metering 3.0 Proposal, SolarAPP+ and efforts to create virtual permitting, gas meter clearance rules, and new code requirements for installing energy storage systems on one and two family homes. Meetings are open to all employees at member companies so if you have not attended a meeting yet, make sure to join us in 2022! You can sign up for chapter updates on our website.

Thank You to Our Regional Chapter Leaders

**Bay Area**
Mary Shaffer Gill, Stem
Tor Valenza, UnThink Solar
Randy Zechman, Clean Solar

**Central Valley**
Tom Cotter, Ask Tom Cotter
Jack Ramsey, AltSys Solar
Joseph Smick, Service Finance Company

**Los Angeles**
Deep Patel, GigaWatt
Eric Presley, Ironride

**North Bay**
Tyson Berg, CED Greentech
Keith Kruetzfeldt, Sunegrity Solar

**Sacramento**
Ed Ayala, Eco Foundations Systems
Steve Geiger, GRID Alternatives

**San Diego**
Cecilia Aguillon, Aguillon Enterprises
Tara Hammond, Hammond Climate Solutions

**MEMBER EDUCATION**

Member companies stayed ahead of the competition in 2021 with CALSSA’s help by getting timely, detailed, and reliable information that they could use to navigate the tumultuous California market. In 2021, CALSSA members received:
With uncertainty around COVID, CALSSA continued to focus on high quality virtual events in 2021. These included regular webinars, including our Quarterly Policy Updates, and individual webinars on topics such as CSLB proposed rules on licensing requirements of installing energy storage systems and various proposals considered by the CPUC for NEM. In March, we continued with our Product Expo Series, highlighting 40 different companies, from module makers to software companies, for a series of short virtual demonstrations packed into a single week. Three months later, it was time for our Virtual Silent Auction fundraiser, where we raised over $50,000 to support CALSSA’s advocacy on NEM! Finally, in September, we once again held our All-Member Meeting virtually. Thanks to this meeting, we raised a million dollars for our NEM advocacy in the month of September, an incredible accomplishment! While we miss doing our events in-person, virtual events have facilitated broader member participation.