# 2021 Annual Report

# Center for Energy Efficiency and Renewable Technologies

## About CEERT

## ABOUT CEERT

The Center for Energy Efficiency and Renewable Technologies (CEERT) is a partnership of major environmental groups, environmental justice groups, and clean-energy companies. Since our founding in 1990, we have designed and fought for policies that advance clean, renewable energy and climate solutions for California and the West.

CEERT's staff, board, consultants, and public-interest and company affiliates advocate for rapidly bringing substantially more renewable resources online, upgrading the transmission system, and adopting policies that will enable California to meet its clean-energy and greenhouse-gas reduction mandates. We act as participants and intervenors before all the major governmental energy, climate, and air-quality agencies.

CEERT has worked for many years to enact far-reaching climate and clean-energy goals in California, to remove barriers to building large-scale renewable facilities, and to overcome inaction and shortsighted opposition on the part of state regulators. Now that the California Public Utilities Commission and other energy agencies have seemed to awaken to the challenges of the climate crisis and an inadequate electric grid, we are hard at work with our allies to bring about the massive zero-carbon procurement and expanded transmission that will revolutionize the energy system we all depend upon.

**John Shahabian** was CEERT's Director of Operations from 1990 until his retirement at the end of 2021. He was our steadfast financial and administrative expert, and through thick and thin helped keep the organization afloat and moving forward.

We deeply appreciate his years of extraordinary commitment and invaluable service to CEERT.

## FROM THE EXECUTIVE DIRECTOR

2021 was an eventful year in California's clean energy and climate transition, and while new challenges and stubborn problems remain, we can see a clear path forward.

After years of delay and foot dragging, the California Public Utilities Commission (CPUC) finally adopted a decision mandating the procurement of 11,500 megawatts of new clean energy and storage projects. The decision included a minimum of 1,000 megawatts of high-capacity, clean and firm power resources, such as geothermal. After years of waiting for the CPUC to act, in the face of the significant loss of imported power from retiring coal plants and huge spikes in natural gas prices, clean energy developers are now gearing up to bid on and build new solar, storage, wind, and geothermal projects. These new clean energy resources will replace retiring gas plants and the Diablo Canyon nuclear plant, and will help to lower customer costs and maintain reliability.

2021 also finally saw the Newsom Administration recognize that California is falling behind and not on track to meet statutory climate and clean energy targets, as required by SB 100. Under the leadership of former California Energy Commission (CEC) Commissioner Karen Douglas and the Governor's office, an unprecedented Interagency Task Force is focusing on the large-scale buildout of renewables, storage and transmission expansion needed to meet the SB 100 targets. The Task Force has held a series of workshops on renewable buildout, delays in transmission planning and interconnection, local government siting and planning issues, and the need for innovative financing and ownership options to lower the cost of building new transmission.

CEERT worked throughout the summer and fall of 2021 with our colleagues at renewable energy trade associations, CEERT affiliates, and allied environmental NGOs in advocating at the California Independent System Operator (CAISO) and before the SB 100 Interagency Task Force on the need to expand the 10-year Transmission Planning Process to include critical new transmission projects. In addition, CEC and CAISO collaborated on the development of a 20-year Transmission Outlook and a Starting Point Analysis that together illustrated the need to begin planning now for the new transmission needed to enable California to achieve 100% clean energy and net-zero climate emissions.

Both of the past two budget  years have produced the largest general fund surpluses in recent memory, and the legislature and Governor Newsom have allocated significant general fund money to support demonstration projects for long-duration energy storage and green hydrogen, as well as the development of a contingency supply reserve, to ensure adequate power capacity over the next six years, as California struggles to overcome solar and battery supply-chain disruptions and delays in utility interconnections and transmission expansion.

California has much work to do, but we are learning as we go, and sharing our experience with others, as we adapt to the consequences of our success and make adjustments in our path forward, through technology, policy, and regulatory innovation.

V. John White
Executive Director

## THE YEAR'S MAJOR ACCOMPLISHMENTS

In 2021, CEERT:

- Saw our years of vigorous but frustrating advocacy finally bear fruit when the California Public Utilities Commission (CPUC) ordered an unprecedented 11,500-megawatt (MW) procurement of clean-energy resources, equivalent to approximately 25% of the electric grid's peak summer load.

- Successfully urged the California Independent System Operator (CAISO) to include additional key projects in its Transmission Planning Process. The final 2021-2022 TPP approved a massive increase in spending from past years to build 23 transmission projects that will connect new, cleanly generated energy to the grid for the CPUC's 11,500 MW procurement, the electrification of transportation and buildings, and the replacement of outmoded gas-fired plants and Diablo Canyon's nuclear reactors.

- Focused on transmission upgrades and expansions in the Central Valley to tap new utility-scale solar projects on retired farmland; in the Imperial Valley to bring more around-the-clock geothermal energy from the Salton Sea; and in Los Angeles to move new clean energy within the Basin and bring in low-cost wind power from nearby states.

- Argued strongly for the California Air Resources Board (CARB) and the CPUC to adopt a 30 million metric ton greenhouse-gas emission ceiling for the power sector, which would set a level of GHGs low enough to allow California to achieve its climate and clean-energy goals.

- Kept up our strenuous advocacy in the rulemaking on minimizing or eliminating the use of the Aliso Canyon gas storage facility, site of the largest methane leak in U.S. history. We supported a decision adopting a lower ceiling for the facility's storage capacity, and recommended alternative investments that would allow Aliso Canyon's closure.

- Enabled CEERT's Executive Director V. John White and Senior Advisor Jose Carmona to serve on the Los Angeles Department of Water and Power's Advisory Committee on implementation of the LA 100% Clean Energy Plan. LADWP is the nation's largest municipal utility, and over the past four years has committed to a clean-energy future.

- Helped carry out a Knowledge Transfer Plan to advance the viability of extracting lithium, an essential element for vehicle and storage batteries, from brine that geothermal energy plants pump from deep in the earth.

- Continued working on a new Enhanced Day-Ahead Market for the Western states, which will result in improved transmission planning, renewables trading, and cost savings.

- Collaborated with our allies and CARB staff on the Advanced Clean Cars Regulation II, which will lower air pollution emissions from conventional vehicles and help reach California's goal of all new cars sold in the state being zero-emission vehicles by 2035.

## SPEEDING UP THE CLEAN ENERGY TRANSITION

California SB 100, enacted into law in 2018, mandates that the state obtain 100% of our electricity from zero-carbon sources by 2045. That requires us to phase out fossil-fueled generation and bring an immense amount of clean energy online much, much faster than we have been.

CEERT is helping lead the fight in the California Public Utilities Commission's (CPUC's) Integrated Resource Planning (IRP) and Resource Adequacy (RA) proceedings to advance more renewable procurement and enable clean resources to compete fairly with gas-fired power.

In 2021, CEERT:

- Saw our advocacy and that of our allies bear fruit when the CPUC ordered an unprecedented 11,500 megawatt (MW) clean-resources procurement in midyear.
- Actively participated in the Interagency Working Group process, based at the California Energy Commission (CEC), that is working through the challenges of implementing SB 100's mandate of achieving 100% zero-carbon electricity for the state.
- Met with statewide county associations to discuss ways to overcome barriers to local government approving the siting and permitting of clean-energy projects.
- Kept urging the CPUC and California Independent System Operator (CAISO) to authorize large procurements of hybrid clean resources, notably solar-plus-storage. Hybrids totaling some 60,000 MW make up most of the utility-scale resources now waiting in the state interconnection queue, but are being held up by the CPUC's current Resource Adequacy rules.
- Enabled CEERT's Executive Director V. John White and Senior Advisor Jose Carmona to serve on the Los Angeles Department of Water and Power's Advisory Committee on implementation of the LA 100% Clean Energy Plan. LADWP is the nation's largest municipal utility, and has been committed to a clean-energy future since 2018.

CEERT Regulatory Counsel Sara Myers (l), Regulatory Attorney Megan Myers (r), Director of Operations Kimber West (rear)

## OVERCOMING BARRIERS TO TRANSMISSION EXPANSION

A greatly expanded transmission system is essential to bringing online the tremendous quantity of zero-carbon energy that California will need to meet its clean-energy and climate goals.

Until recently, the CPUC greatly underestimated the need for clean-energy projects and the extensive transmission required to deliver that energy where it will be needed. As a result, the grid could soon lack the capacity to deliver new clean generation to large portions of the state.

In 2021, CEERT:

- With allied organizations, successfully urged the CAISO to include additional key projects in its Transmission Planning Process. The final 2021-2022 TPP approved a massive increase in spending from past years to build 23 transmission projects needed to interconnect clean-energy generation for the CPUC's new 11,500 MW procurement, electrification of transportation and buildings, and replacement of retiring gas plants and Diablo Canyon's nuclear reactors.
- Advocated for strategically located *upgrades* on existing transmission lines that could be done relatively quickly and at lower cost than entirely new lines, which require considerable capital and lead-time to build.
- Focused especially on transmission upgrades and expansions in the Central Valley to tap new utility-scale solar projects on retired farmland; in the Imperial Valley to bring more around-the-clock geothermal energy from the Salton Sea; and in Los Angeles to move new clean energy within the Basin and bring in low-cost wind power from nearby states.
- Continued working with allies on a new Enhanced Day-Ahead Market for the Western states, which will result in improved transmission planning, renewables trading, and cost savings.

## PHASING OUT CALIFORNIA'S DEPENDENCE ON NATURAL GAS

To meet our climate and clean-energy goals and clean up air pollution in frontline communities, California must roll back the use of natural gas, its chief remaining fossil power source and a main cause of short-term global warming from methane emissions. The state's overreliance on gas is set to diminish in the years ahead because of our GHG-reduction mandates, continuing increases in the use of renewable energy, and transportation and building electrification, but state regulators have yet to take these factors fully into account.

CEERT believes that we need to cut the size of the gas system in half by 2030, and we are actively opposing any investment in new, expanded, or reauthorized gas-fired power plants.

In 2021, CEERT:

- Kept up our strenuous advocacy in the rulemaking on minimizing or eliminating the use of the Aliso Canyon gas storage facility, site of the largest methane leak in U.S. history. We supported a decision adopting a lower figure for the facility's storage capacity, and recommended alternative investments that would enable Aliso Canyon's closure.
- Successfully advocated in the CPUC's Extreme Weather proceeding for changes that resulted in a final decision declaring new gas development will not be considered for generating sites that maintain grid reliability during periods of extreme summertime heat.
- Continued to support clean microgrid development that furthers progress toward meeting the state's climate goals and facilitates its clean-energy transition.
- Remained the sole NGO actively working on gas-reduction issues in all key venues and proceedings, while continuing to collaborate on these issues with California Environmental Justice Alliance, Communities for a Better Environment, Asian Pacific Environmental Network, Sierra Club, and Union of Concerned Scientists.

A gas-fired power plant

## CHAMPIONING CUTTING-EDGE TECHNOLOGIES

CEERT is going to bat for especially promising cutting-edge technologies: long-duration energy storage, offshore wind power, renewable hydrogen, lithium recovery from geothermal brine, and strengthened demand response programs.

In 2021, CEERT:

- Spearheaded talks about ways to finance long-duration storage projects and allocate their costs fairly, either through joint utility ownership or long-term contracts.
- Discussed offshore wind (OSW) issues with labor, tribal interests, environmental justice groups, local governments, and port officials, and advocated for state or CAISO funding for transmission lines from OSW platforms to shore.
- Proposed convening a Green Hydrogen Working Group of environmental, equity, and labor representatives to analyze hydrogen feedstocks, productions methods, and end uses, and to forge agreement on critical issues.
- Helped carry out a Knowledge Transfer Plan to advance the viability of extracting lithium, an essential element for vehicle and storage batteries, from brine that geothermal plants pump from deep in the earth.
- Advocated strongly for greater use of demand response, a crucial, proven, yet underutilized resource for supplying grid reliability during heat waves and other challenging conditions.

Offshore wind turbines

## ADVANCING CALIFORNIA'S CLIMATE POLICIES

California's aggressive climate goals aim to slash greenhouse gases 40% below 1990 levels by 2030 and reach statewide carbon neutrality by 2045.

CEERT is working to strengthen the California Air Resources Board's (CARB's) GHG Scoping Plan for 2030, to lower the planning target for a ceiling on GHG emissions, and to establish GHG reductions as the guiding concern of the CPUC's Integrated Resource Planning (IRP) process.

In 2021, CEERT:

- Applauded CARB's draft Scoping Plan for 2030 giving consideration to a 30 million metric ton (MMT) GHG reduction target for the power sector. When a later draft of the Scoping Plan came out with two scenarios at 38 MMT and two at 30 MMT, we argued strongly for the lower figure.
- Encouraged by the CPUC's retreat from its prior use of a 46 MMT GHG portfolio, CEERT pushed for the agency's IRP proceeding to adopt CARB's tentative 30 MMT target, which sets a level of GHG emissions low enough to allow California to achieve its climate and energy goals, and whose adoption in the IRP process would help spur accelerated procurement of new clean-energy resources.
- Argued that the electric-sector 30 MMT target was realistic and achievable, given the load growth expected for electrification of buildings and transportation and the coming retirement of old, inefficient gas-fired plants.
- Advocated for California's GHG-reduction planning to become more of a collaborative interagency exercise, and for building an independent, transparent modeling and planning process at the CEC that can examine how best to achieve the dramatic GHG reductions needed in the next few years.

## ACCELERATING CLEAN TRANSPORTATION

CEERT's Clean Transportation Program's advocates for policies that support growing markets for zero-emission electric and renewable-hydrogen-powered fuel-cell vehicles as a prime way to slash the 40% of California's greenhouse-gas emissions attributable to transportation.

We and our allies are especially focusing on trucks, since they account for a mere 7% of the state's vehicles but are the principal source of vehicular air pollution.

In 2021, CEERT:

- Worked with our allies and CARB staff on the Advanced Clean Cars Regulation II, which intends to lower air pollution emissions from conventional vehicles and help reach the goal of all new cars sold in California being zero-emission vehicles (ZEVs) by 2035. We are participants in the ACC Coalition, which focuses on ensuring that CARB incorporate environmental and equity considerations throughout the regulation.
- Recommended a more aggressive sales-ramp requirement than CARB staff have proposed for automakers' annual 2026-2035 ZEV sales, which we believe are too conservative and risk the state falling short of its 2035 goal.
- Collaborated with CARB and our allies on the Advanced Clean Fleet (ACF) Regulation to further reduce emissions from trucking, expedite the state's transition to an all-ZET truck fleet, and ensure the regulation's benefits are maximized for low-income communities. The regulation will ideally require that the state's public and private fleets transition to 50% of new fleet truck purchases being zero-emission by 2024, and 100% of new purchases being zero-emission from 2027 onward.
- Continued our work with Canadian non-governmental organizations over the past several years to encourage the Canadian federal government to adopt a ZEV mandate.

An electric truck

## WESTERN GRID GROUP

Western Grid Group (WGG) is a fiscally sponsored project of CEERT that works on regional issues throughout the Western Interconnection to build a low carbon future by increasing renewable energy deployments, reducing fossil energy use, and supporting policies and rules that promote more distributed energy and flexible demand resource technologies.

In 2021, WGG:

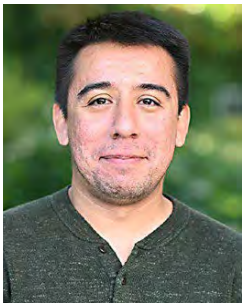
- Supported adoption and implementation of state standards to achieve 100% carbon-free energy. Worked in regulatory forums in Washington on ground-breaking work to develop a pathway to implement and achieve the 100% standard. Worked in Arizona to try to adopt the state's first carbon standard.
- Worked to evolve governance of the California Independent System Operator (CAISO) to allow for regional market expansion, with the goal of building a West-wide market. WGG staff were selected and served as public interest representatives on the Governance Review Committee to develop proposals acceptable to market participants, stakeholders, the CAISO Board of Governors, and the Energy Imbalance Market's Governing Body.
- Managed Western Clean Energy Advocates, a West-wide collaboration of more than 40 non-governmental organizations working to develop a carbon-free electric system. Hosted one annual virtual meeting and monthly calls, and supported workgroups on regional market development, Just Energy Transition, and resource sufficiency evaluation.
    - In the Markets work group, a strong lineup of advocates is working on CAISO's Energy Day Ahead Market development, monitoring Southwest Power Pool's market activities in the West, and supporting state market studies and encouraging states to mandate market entry by dates certain, as Colorado will do by 2030.
    - In the Just and Equitable Transition work group, burgeoning interest in energy equity has led to expanding participant numbers and national reach, as well as response from federal policy makers, all interested in helping communities and workers impacted by early fossil plant retirements.
- Provided technical and policy advice and guidance to allied organizations in submitting regulatory filings in state, regional and federal forums on diverse topics, including fossil refinancing, state evaluation of regional market participation, transmission planning, and clean energy policy adoption.

## CEERT's 19TH Annual Clean Power Champions Ceremony

At our Clean Power Champions Awards Ceremony on August 25, 2021, CEERT honored four outstanding advocates for our clean energy future.

**State Senator Nancy Skinner** has sponsored legislation requiring utilities to procure energy storage, thereby helping create a new industry that has become a vital part of our clean energy economy. As Chair of the Senate Budget Committee, Senator Skinner has presided over a significant expansion of funding for clean energy, including long-duration energy storage, demonstration projects for green hydrogen, and a massive increase in support for electric vehicles and charging stations.

**Bill Marcus** (1953 – 2021) was California's most influential energy economist, whose decades of service on behalf of consumers, environmentalists, and renewable energy helped reshape California's electric grid. Bill worked with CEERT and Friends of the Earth to analyze the costs of relicensing the Diablo Canyon nuclear plant versus replacing the plant with a portfolio of renewables, demand response, and energy storage, which led PG&E to agree to retire Diablo and put a zero-carbon portfolio in its place.



**Luis Amezcua** has played a key role in incorporating labor and equity standards into clean energy solicitations, and worked with renewable energy developers, communities, and utilities to appropriately site renewable energy projects to avoid impacts on habitat and natural resources. Along with the local organizers from the My Generation Campaign, Luis helped build the community support for accelerating 100% Clean Energy targets adopted by the Sacramento Municipal Utility District.

In 2018, **Los Angeles Mayor Eric Garcetti** directed the Los Angeles Department of Water and Power (LADWP) to abandon plans to repower three gas-fired power plants, retire them over the next 10 years, and replace the power output with clean energy. **Team LA 100,** made up of city and LADWP leaders, has since developed a road map for how the utility can attain 100% clean energy for Los Angeles by 2035 while maintaining grid reliability and affordability.

## CEERT 2021 FINANCIAL STATEMENTS

### CEERT Revenue

| | | |
|---|---|---|
| Public Support Contributions | $ 150,500 | |
| Foundation Grants | 480,000 | |
| Private Donations | 35,964 | |
| Annual Fundraiser | 38,618 | |
| Other Revenue | 439,792 | |
| Sponsored Project Revenue | 3,219,482 | |
| **Total Revenue** | **$4,364,356** | |

### CEERT Program and Administrative Expenses

| | | |
|---|---|---|
| *CEERT Core Program Expenses* | | |
| Clean Energy Procurement | $ 175,954 | |
| Other Clean Energy Issues | 130,336 | |
| Resource Adequacy and Gas Reduction | 195,505 | |
| Climate Advocacy | 149,887 | |
| Offshore Wind | 35,000 | |
| CPUC Regulatory Intervention | 66,973 | |
| *Subtotal, Program Expenses* | *$753,655* | |
| Direct Program Expenses | $753,655 | 72.5% |
| Administration and Overhead | 284,700 | 27.5% |
| **Total CEERT Core Organizational Expenses** | **$1,038,355** | **100.0%** |
| *CEERT Sponsored Projects* | | |
| Western Grid Group | $174,928 | |
| Building Decarbonization Coalition | 3,044,554 | |
| *Subtotal, Sponsored Project Expenses* | *$3,219,482* | |
| **Total Program Expenses** | **$4,257,837** | |

## BOARD OF DIRECTORS

**Tom Starrs**, *Chair*
EDP Renewables

**Arthur Haubenstock**, *Secretary/Treasurer*
Bloom Energy

**Mark Specht**
Union of Concerned Scientists

**Luis Amezcua**
Building Decarbonization Coalition

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American Lung Association in California

**James Caldwell, Jr.**
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EDF Renewable Energy

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Berkshire Hathaway Energy

## STAFF

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Executive Director

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Director of Operations

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**Peter Stern**
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**Heather Edmonds**
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**Ruby Navarro**
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**Melissa Wiele**
Administrative Assistant

**Sienna Levine**
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**Mark Hanin**
Graduate Intern

**Benner Mullin**
Graduate Intern

## AFFILIATES

**8minutenergy Renewables**
**American Lung Association in California**
**Baker Energy Team**
**Berkshire Hathaway Energy**
**Coalition for Clean Air**
**Cyrq Energy**
**EDF Renewable Energy**
**EDP Renewables**
**Enel X**
**Environmental Defense Fund**
**Fervo Energy**
**Gallatin Power Partners**
**Geothermal Resources Council**
**Innergex Renewables**
**Latino Environmental Advancement Project**
**Natural Resources Defense Council**
**NextEra Energy**
**Renewable Northwest**
**Sacramento Municipal Utility District**
**Union of Concerned Scientists**
**Westlands Solar Park**

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**Energy Foundation**

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**Tran Wilson**
**Peter Yolles and Jill Einstein**


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