CENTER FOR ENERGY EFFICIENCY AND **RENEWABLE TECHNOLOGIES**

2022 ANNUAL REPORT

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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 quickly bringing substantially more renewable resources online, expanding 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 of the state's major energy, climate, and air-quality governmental agencies.

CEERT has worked for many years to enact far-reaching climate and clean-energy goals in California, to remove barriers to the buildout of large-scale renewable facilities, and to overcome inaction and shortsighted opposition on the part of state regulators. Now that the challenges of the climate crisis and an inadequate electric grid have become increasingly clear and strong state energy goals have been established, we are hard at work with our allies to implement those goals and bring about the massive amounts of new zero-carbon generation and extended transmission that will usher in a clean-energy future for us all.



V. John White, Executive Director



Kimber West, Director of Operations



Jose Carmona, Senior Advisor



Tom Starrs, Board Co-Chair



Michael Colvin, Board Co-Chair

FROM THE EXECUTIVE DIRECTOR

2022 was a turning point in California's drive to achieve clean-energy targets, while maintaining grid reliability and lowering customer costs.

A stunning spike in natural gas prices flowed through to customers in the form of higher electricity rates and heating bills, underscoring the vulnerability of our continuing dependence on natural gas. High gas prices and the threat of heat storms and power outages underscored the need to greatly expand in-state transmission and overcome delays in interconnection.



CEERT convened regular calls and meetings with our clean-energy trade association, renewable developers, and environmental justice groups to coordinate advocacy for rapidly building more transmission capacity to bring new zero-carbon energy resources to the grid. With the recent adoption of its 2022-23 Transmission Plan, the California Independent System Operator (CAISO) has recognized the need for more intentional planning to extend transmission to the optimal resources needed for a balanced clean-energy portfolio, and to reform the backlog in the current "first come, first served" transmission queue.

CEERT also spent time and effort to develop ideas for regulatory streamlining of transmission approval, siting, permitting, and environmental review processes, and we have started seeing positive responses from the California Public Utilities Commission, the California Energy Commission, and the CAISO.

But the biggest problem we haven't been able to solve is the paralysis of PG&E. They are months, and in some cases years, behind in interconnecting new housing developments, truckstop charging stations, distributed energy projects, infrastructure upgrades, new battery storage, and large-scale solar projects. These delays are caused by a number of factors, including PG&E's poor financial condition because of its two bankruptcies, but also the decision of the utility's management to focus exclusively on undergrounding transmission lines in wildlife areas. Without a significant change in attitude and approach, PG&E will become operationally bank-rupt, and we will need to look elsewhere for the necessary funding and project management to get the interconnections done in a timely fashion.

With the recent announcement of the Governor's May budget revisions, we are happy to know that nearly all of the billions of dollars in new climate and clean energy funding appropriated last year, including funds for long-duration storage, green hydrogen, and demand flexibility, have been preserved.

We are hopeful that in the coming months we can build on these successes and further accelerate progress toward achieving California's ambitious clean energy and climate goals.

V. John White Executive Director

THE YEAR'S MAJOR ACCOMPLISHMENTS

- Helped pave the way for a proposed decision in the California Public Utilities Commission's (CPUC's) Integrated Resource Planning proceeding that recommends an unprecedentedly low greenhouse-gas emissions target for the power sector, a level that would allow the state to reach its energy and climate goals and underscore the necessity of accelerated clean-energy deployment.
- Successfully pushed for critical changes in the final version of the California Air Resources Board's 2022 Climate Change Scoping Plan: the elimination of new gas-fired power plants, the adoption of an ambitious offshore-wind target, and a recognition of potential adverse impacts resulting from carbon capture and storage technology in fossil-fuel facilities such as oil refineries.
- Influenced the inclusion of essential new transmission lines and upgrades in the California Independent System Operator's 20-Year Outlook, its 2022-2023 Transmission Planning Process, and its Transmission Planning Forum.
- Advocated for transmission expansions in the Central Valley to tap new solar farms; a line from the Imperial Valley to carry geothermal energy; lines from Wyoming and New Mexico to bring in low-cost wind power; an expansion of an intertie from the Pacific Northwest to Los Angeles; and an undersea cable to bring offshore wind power to the California grid.
- Continued working with our allies in nearby states on regional grid integration issues and the establishment of an Extended Day-Ahead Market, which will result in improved transmission planning, renewables trading, and cost savings throughout the West.
- Partnered with our affiliates in the Central Valley to realize the buildout of utility-scale solar farms, to help bring the benefits of those projects to local communities, and to secure residents' full access to workforce training and employment programs.
- Championed policies to further co-production of renewable energy and lithium from geothermal plants at the Salton Sea, and ensure community benefits and workforce training opportunities for Imperial Valley residents.
- Kept pushing for new CPUC Resource Adequacy counting rules for hybrid resources like solar-plus-storage, which could result in 60,000-80,000 MW of new generation.
- Convened periodic meetings on renewable hydrogen with environmental NGOs and academic and industry experts to discuss green electrolyzers vs. fossil gas feedstocks; production, transport, and distribution of hydrogen; and best/least appropriate end uses.
- Strongly supported the Advanced Clean Cars II regulations for passenger vehicles and light trucks, which aim to ensure that by 2035 all new cars and light trucks sold in California will be either zero-emission vehicles or a limited number of plug-in hybrids.

Advancing Clean-Energy Siting and Permitting, and Facilitating Clean-Energy Benefits in Disadvantaged Communities

California law now requires that 100% of our electricity come from zero-carbon sources by 2045. To reach that goal, we must build a monumental amount of new clean-energy projects in locations throughout the state in a very short period. CEERT is acting as a mediator between state agencies and county governments to expedite the siting and permitting of such projects.

We are also working to ensure that residents of low-income communities enjoy the full economic and environmental benefits of these resources, and participate equitably in the workforce training and hiring opportunities that the clean-energy transition will bring.

- Met with the California Energy Commission, California Association of Counties, Rural County Association, organized labor, environmental and environmental justice groups, and renewable project developers to discuss barriers and opportunities for local governments approving the siting and permitting of clean-energy generation and transmission projects.
- Worked with our longtime affiliates the Latino Equity Advocacy and Policy Institute (LEAP) and Westlands Solar Park to realize the buildout of long-planned utility-scale solar farms in the Central Valley, to help bring the benefits of those projects to local communities, and to secure local residents' full access to workforce training and employment programs.
- Was a key technical energy consultant and active member of the Lithium Valley Community Coalition of labor and environmental-justice groups in the Imperial Valley. We advocated with state decision-makers for critical geothermal and lithium development policies in the Salton Sea area, including funding to support needed transmission expansions.
- CEERT's V. John White and Jose Carmona continued to serve on the Los Angeles Department of Water and Power's Advisory Committee for implementing the LA 100% Clean Energy Plan, which will entail new in-Basin capacity, demand response, and transmission resources.



Westlands Solar Park, in the Central Valley near Fresno

EXPANDING THE TRANSMISSION SYSTEM

Inadequate transmission is the key obstacle holding back a massive buildout of clean energy projects. Because of endemic short-sightedness at the California Public Utilities Commission in recent years, the state is woefully behind in planning and building the transmission capacity we need to carry zero-carbon electricity to homes and businesses across the state.

V. John White, Maia Leroy, and Ed Smeloff lead CEERT's advocacy for transmission expansion.

- Influenced the inclusion of crucial new lines and upgrades in the California Independent System Operator's 20-Year Outlook, its 2022-2023 Transmission Planning Process (TPP), and its Transmission Planning Forum.
- Pressed for reform of the TPP by moving from first-come/first-served access to an outcomebased plan that ties new zero-carbon generation to the availability of new transmission and helps shape clean-energy development rather than reacting to it.
- Advocated for top-priority transmission projects: upgrades and expansions in the Central Valley to tap new utility-scale solar farms; a line in the Imperial Valley to carry geothermal energy from the Salton Sea; lines from Wyoming and New Mexico to bring in low-cost wind power; an expansion of the Pacific Intertie from the Pacific Northwest to the Los Angeles Basin; and an undersea cable to bring offshore wind power to the electricity systems of both Southern California Edison and the Los Angeles Department of Water and Power.
- Continued working with Renewable Northwest, Western Resource Advocates, Western Grid Group, and other partners in nearby states on regional grid integration issues and the establishment of an Extended Day-Ahead Market, which will result in improved transmission planning, renewables trading, and cost savings throughout the West.



V. John White, CEERT Executive Director Maia Leroy, CEERT Policy Coordinator



Ed Smeloff, Transmission Consultant

MAKING PROGRESS ON CALIFORNIA'S CLIMATE GOALS

California is committed by statute to the challenging goals of cutting greenhouse-gas emissions (GHGs) 40% below 1990 levels by 2030 and reaching statewide carbon neutrality by 2045.

CEERT's advocacy significantly improved the California Air Resources Board's (CARB's) 2022 Climate Change Scoping Plan, gained acceptance for a lower target for power-sector GHG emissions, and pushed for closing inefficient, polluting gas plants in low-income communities.

- Successfully pushed for a Scoping Plan final version that contained key changes from the initial draft: the elimination of new gas-fired power plants, the inclusion of Governor Newsom's ambitious offshore-wind target, and a recognition of potential adverse impacts from carbon capture and storage (CCS) in existing fossil-fuel facilities such as oil refineries.
- Through years of advocacy, helped pave the way for a proposed decision in the CPUC Integrated Resource Planning proceeding that recommends a High Electrification Portfolio and an unprecedentedly low power-sector GHG target of 30 million metric tons, a level that would allow the state to reach its energy and climate goals and underscore the necessity of accelerated clean-energy deployment.
- Urged CARB to update its modeling assumptions, further assess the likely impacts of CCS, and track progress on actual emission reductions and the adoption of new regulations.
- Began work with the Regenerate California Coalition to advocate for new renewable energy projects that will enable the retirement of gas-fired plants in disadvantaged communities, and for a shutdown strategy for the oldest, least efficient, most highly polluting gas plants in those communities.



MAINTAINING STRONG REGULATORY ADVOCACY

Sara Steck Myers and Megan M. Myers, CEERT's two regulatory attorneys, maintain vigorous advocacy in key California Public Utilities Commission (CPUC) proceedings for accelerated procurement and equitable valuation of clean energy.

In addition, CEERT has taken an active role in the Interagency Working Group process on implementing SB 100's mandate to achieve 100% zero-carbon energy statewide.

- Helped influence the CPUC's Integrated Resource Planning process over the past three years to lower its power-sector GHG target from 46 million metric tons, first to 38 MMT, and then, in a recent proposed decision, to adopt the 30 MMT goal that we have long advocated for.
- Supported the CPUC Resource Adequacy (RA) proceeding's move to a Slice-of-Day approach, which matches resource needs to electric demand plus battery charging for different times and conditions, and should lead to more distributed and energy-storage resources.
- Kept pushing for reform of the RA program's counting rules, particularly for hybrid resources like solar-plus-storage, which could result in 60,000-80,000 MW of new generation.
- Advocated at the CEC and Department of Water Resources for demonstration projects for green hydrogen, demand management, long-duration storage, and a contingency reserve.
- Continued to champion demand response (DR) as a crucial resource that can displace gas, provide grid reliability and flexibility, and avoid rolling blackouts during heat waves. We advocated for a built-in automated DR capability in new electrified buildings and retrofits.



CEERT Regulatory Counsel Sara Myers



CEERT Regulatory Attorney Megan Myers

SUPPORTING EMERGING TECHNOLOGIES

CEERT is a strong backer of renewable hydrogen, lithium recovery from geothermal brine, and concentrating solar power (CSP) plants. Green hydrogen is a promising solution for decarbonizing industry, fueling long-haul trucks, and replacing gas in electricity generation. Lithium extraction from geothermal brine is an economical, low-impact method of obtaining this key material for vehicle and storage batteries. And CSP plants coupled with thermal energy storage can produce sizable amounts of clean energy at all hours.

- Convened periodic meetings on hydrogen with environmental NGOs and academic and industry experts to discuss green electrolyzers vs. fossil gas feedstocks; production, transport, and distribution of hydrogen; and best/least appropriate end uses.
- Coordinated with partner nonprofits and the Governor's Office of Business and Economic Development as part of the Governance Committee on the newly proposed, federally funded California Hydrogen Hub.
- Engaged on lithium development policy to further co-production of renewable energy and lithium from geothermal plants at the Salton Sea, and ensure community benefits and workforce training opportunities for local residents. Three companies have plans to retrofit existing geothermal plants and build new ones with clean lithium extraction capacity.
- Partnered with Solar Dynamics on a DOE-funded CSP project, with a stakeholder advisory group comprising industry, utilities, state agencies, and environmental organizations that will explore CSP siting locations and make presentations at the CEC and CPUC.



A hydrogen energy storage system

ACCELERATING CLEAN TRANSPORTATION

Vehicles represent approximately 40% of greenhouse-gas emissions in California. As a result, decarbonizing the transportation sector ranks near the top of the California Air Resources Board's (CARB's) priorities. CEERT's Clean Transportation Program works with CARB to speed up the transition to zero-emission electric and renewable-hydrogen vehicles.

We and our NGO allies continue our focus on trucks, since they make up just 7% of the state's vehicles but are the largest source of vehicular air pollution.

- Strongly supported the Advanced Clean Cars II (ACC II) regulations for passenger vehicles and light trucks, which CARB adopted on August 25, 2022. The regulations aim to ensure that by 2035 all new cars and light trucks sold in California will be either zero-emission vehicles (ZEVs) or a limited number of plug-in hybrids.
- With other members of the ACC II Coalition, expressed our disappointment that the ACC II regulations contained only optional provisions for encouraging automakers to deploy more ZEVs in communities disproportionately burdened by air pollution.
- Advocated that the proposed Advanced Clean Fleet Regulation mandating new mediumand heavy-duty trucks to be 100% zero-emission take effect in 2036 rather than 2040.
- Continued to serve on the Advisory Committee for the California Energy Commission's Clean Transportation Program, whose 2022-2023 Investment Plan allocated \$2.9 billion in total funding, including \$1.7 billion for medium- and heavy-duty ZEV infrastructure and \$900 million for light-duty EV charging equipment.



WESTERN GRID GROUP

Western Grid Group (WGG) is a CEERT sponsored project that focuses on Western regional issues critical to building a low-carbon future. WGG works to increase renewable energy, integrate it into utility operations, limit fossil electric generation, improve regional electric markets, bolster transmission, track and report GHG emissions, and support more distributed energy and load flexibility in emerging market operations.

In 2022, WGG:

- Worked to support broader participation in governance of the CAISO and the Energy Imbalance Market (EIM) Governing Body. WGG staff served on a Governance Review Committee to develop a Joint Authority governance proposal for EIM's Extended Day Ahead Market.
- Managed Western Clean Energy Advocates (WCEA) and its transition to leadership by Gridworks. WCEA is a West-wide coalition of clean-energy advocates, consultants, funders, and more than 40 environmental, renewables, and demand-side organizations. WCEA supported workgroups on a Just Energy Transition, regional market development, transmission, and resource sufficiency evaluation, and participated in broader-based working groups on the Navaho Generating Station transition, the PacifiCorp transition, and Tri-State reform.
- Contributed substantially to high-priority tasks in the Markets workgroup, which led cleanenergy advocacy analysis and stakeholder participation in CAISO's Extended Day-Ahead Market development. WGG helped to monitor and participate in comments on Southwest Power Pool's Markets proposal, and encouraged states to enact policies to support market development, including mandating market entry by dates certain.
- Helped to launch the transmission workgroup, with a focus on encouraging Western Electricity Coordinating Council contributions to planning such as their Anchor Data Set, as well as taking up twenty-year "vision" planning for the region. The transmission workgroup is building the advocacy base for renewed interest in regional level planning, which we expect to flow from FERC's proposed rulemaking on transmission and new federal funding.
- Supported increasing involvement in the Just and Equitable Transition (JET) workgroup, based on strong emerging concerns about energy equity. As provisions in the Inflation Reduction Act require community involvement and utility consumer benefits, policymakers are participating in JET to help communities and workers impacted by fossil plant retirements.
- Supported coalition partners with technical and policy advice, tapping WGG expertise on utility financial transitions, business model reforms, transmission planning, competitive procurements, state participation in regional market development, resource adequacy and reliability reforms, gas cost pass-through alternatives, and clean-energy policy development.



CEERT'S 20TH ANNUAL CLEAN POWER CHAMPIONS CEREMONY

At our Clean Power Champion Awards Ceremony on August 17, 2022, CEERT honored four exceptional advocates who are leading the way to our clean energy future.



Karen Douglas was recently appointed to the California Public Utilities Commission, after having served as chair of the California Energy Commission and as Senior Energy Advisor to Governor Newsom. Karen has ushered in a new era of cooperation and forward movement in the state's energy agencies, and her patient diplomacy and command of complex policy issues have been pivotal for large-scale development of offshore wind power, clean-energy and conservation planning for 22 million acres of California desert, and interagency coordination on the buildout of zero-carbon generation to meet the state's climate and energy goals.



Cliff Rechtschaffen was a member of the California Public Utilities Commission from January 2017 to December 2022, during which his work focused on environmental justice, transportation electrification, integrated resource planning, and the renewable portfolio standard. He expanded the CPUC's transmission planning to include high electrification scenarios and deep reductions in greenhouse gas emissions, which would result in a doubling of clean-energy resources needed between now and 2030. Earlier, Cliff co-founded the Environmental Law and Justice Clinic at Golden Gate University.



Ed Smeloff has been a leading clean-energy activist and author for nearly 40 years, starting with his first election to the Sacramento Municipal Utility District board in 1986 and his key role in transforming SMUD into a trail-blazing utility on energy efficiency and renewables. He worked for two successful solar companies, managing the building of many large-scale solar projects at such sites as the Google campus and San Francisco's Moscone Center. Ed was a leading clean-energy advocate at Vote Solar, and currently works with GridLab and CEERT on transmission and grid decarbonization policy initiatives.



Rey León is the founder and Executive Director of the Latino Equity Advocacy and Policy Institute (LEAP), and is Mayor of the farmworker community of Huron. He helped develop the first environmental justice strategy for both the San Joaquin Valley Air Pollution Control District and the Fresno County Council of Governments, and secured funding for over 30 projects to improve mobility, access, and safety for the people of his city. Rey conceived of and established the *Green Raiteros*, an electricvehicle rural ridesharing program that has installed more EV chargers per capita in Huron than any other city in the country.



V. John White and the 2022 Clean Power Champions



Jose Carmona, Rey León, and V. John White

CEERT 2022 FINANCIAL STATEMENTS

Public Support Contributions Foundation Grants Private Donations Annual Fundraiser Other Revenue Sponsored Project Revenue	\$ 195,500 504,461 41,868 56,704 465,845 <u>1,696,564</u>	
Total Revenue	\$2,960,942	
CEERT Program and Administrative Expenses		
<u>CEERT Core Program Expenses</u> Transmission, IRP, RA, Siting & Permitting Hydrogen Research & Policy Work Lithium & Geothermal Development at Salton Sea Western Grid Activities Concentrating Solar Power Study CPUC Regulatory Intervention <i>Subtotal, Program Expenses</i> Direct Program Expenses Administration and Overhead	\$ 313,063 31,306 46,959 50,000 9,000 <u>54,205</u> <i>\$504,534</i> \$504,534 <u>137,128</u>	79.0% 21.0%
Total CEERT Core Organizational Expenses	\$641,662	100.0%
<u>CEERT Sponsored Projects</u> Western Grid Group The LEAP Institute Natural Resources Defense Council Building Decarbonization Coalition Subtotal, Sponsored Project Expenses	\$146,272 6,683 60,000 <u>1,483,609</u> \$ <i>1,696,564</i>	

Total Program Expenses

\$2,338,226



Kimber West, Director of Operations and Controller



Heather Edmonds, Operations Manager



Alita Turner, Administrative Assistant

BOARD OF DIRECTORS

Tom Starrs, *Co-Chair* EDP Renewables

Michael Colvin, *Co-Chair* Environmental Defense Fund

Arthur Haubenstock, Secretary/Treasurer Bloom Energy

Luis Amezcua Better World Group

Will Barrett American Lung Association in California

James Caldwell, Jr. San Jose Clean Energy

Frank DeRosa Avantus

Nick Goodman CYRQ Energy

Nicole Hughes Renewable Northwest

Alex Jackson American Clean Power Association

Dan Kim Westlands Solar Park

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Teresa Cheng Sierra Club, My Generation

Catherine Garoupa Central Valley Air Quality Coalition

Lauren Kubiak Natural Resources Defense Council

STAFF

V. John White Executive Director

Kimber West Director of Operations

Jose Carmona Senior Advisor

Sara Steck Myers Regulatory Counsel

Megan Myers Regulatory Attorney

Maia Leroy Policy Coordinator

John Shears Transportation Consultant Rey León Latino Equity, Advocacy and Policy Institute

Bill Magavern Coalition for Clean Air

Cara Martinson NextEra Energy

Jan McFarland Fairhaven Institute

Parin Shah At Large

Virinder Singh EDF Renewable Energy

Ed Smeloff GridLab

Mark Specht Union of Concerned Scientists

Mona Tierney-Lloyd

Jonathan Weisgall Berkshire Hathaway Energy

Luis Olmedo Comité Civico del Valle

Sara Qureshi NEXTERA ENERGY

Peter Stern Development Director

Heather Edmonds Operations Manager

Alita Turner Administrative Assistant

Sienna Levine Graduate Fellow

Mark Hanin Graduate Intern

Benner Mullin Graduate Intern

AFFILIATES

Avantus 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 Rising 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

MAJOR FUNDER

Energy Foundation

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