

Rulemaking No.: 20-11-003

Exhibit No.: CEERT-3

Witness: James H. Caldwell, Jr.

Commissioner Marybel Batjer

ALJ Brian Stevens

**OPENING PHASE 2 PREPARED TESTIMONY OF
THE CENTER FOR ENERGY EFFICIENCY AND
RENEWABLE TECHNOLOGIES**

Rulemaking 20-11-003
2021 Extreme Weather Event Reliable Electric Service

September 1, 2021

R.20-11-003 (Extreme Weather)
OPENING PHASE 2 PREPARED TESTIMONY OF
CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES

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James H. Caldwell, Jr

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5 I.
6 **EXECUTIVE SUMMARY**
7

8 The Center for Energy Efficiency and Renewable Technologies (CEERT) is a
9 nonprofit public-benefit organization founded in 1990 and based in Sacramento,
10 California. CEERT is a partnership of major private-sector clean energy companies,
11 environmental organizations, public health groups and environmental justice
12 organizations. CEERT designs and fights for policies that promote global warming
13 solutions and increased reliance on clean, renewable energy sources for California and
14 the West. CEERT is working toward building a new energy economy, including cutting
15 contributions to global warming, and reducing dependence on fossil fuels. CEERT has
16 long advocated before the Commission for increased use of preferred resources and for
17 California to move towards a clean energy future.

18 Rulemaking (R.) 20-11-003 is the Order Instituting Rulemaking (OIR) to Establish
19 Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the
20 Event of an Extreme Weather Event in 2021. On December 18, 2020, Administrative
21 Law Judge (ALJ) Stevens issued a Ruling Introducing a Staff Report and Questions to
22 the Record and Seeking Responses from Parties in Opening and Reply Testimonies
23 (December 18 ALJ Ruling). On December 21, 2020, Assigned Commissioner Batjer
24 issued an Assigned Commissioner’s Scoping Memo and Ruling (Scoping Memo).

25 On January 11, 2021, CEERT submitted its Opening Testimony in this
26 proceeding that was identified as Exhibit (Ex.) CEERT-1. In that Opening Testimony,
27 CEERT provided its response to the December 18 ALJ Ruling and issues identified in
28 the Scoping Memo and opposed any new investment in the gas fleet, including any
29 “expansion of gas-fired generation assets.”¹ CEERT testified that clean resources, such
30 as solar + storage hybrids, demand response (DR), and behind-the-meter (BTM)

¹ Ex. CEERT-1, at pp. 1-2.

1 distributed energy resources (DERs) must be considered and procured in this
2 proceeding.² Specifically, CEERT recommended the following:

- 3 1. The Commission should focus on least-regrets solutions to maintain
4 reliability in Summer 2021, including procurement of available clean
5 energy resources and demand-side solutions. Any last resort
6 incremental investment in gas must be restricted to short-term contract
7 only.
- 8 2. The Commission should ensure the mitigation measures taken to
9 increase reliability in Summer of 2021 are equivalent solutions to the
10 causes of the August 2020 outages, as outlined in the Preliminary Root
11 Cause Analysis.
- 12 3. While the focus is clearly on resources that can be on-line by early
13 Summer 2021, the Commission should recognize that there is equal or
14 greater urgency to procure clean resources that can be online for the
15 Fall of 2021 and Summer 2022.³

16 CEERT also submitted the Rebuttal Testimony of the Center for Energy
17 Efficiency and Renewable Technologies (Ex. CEERT-2) on January 19, 2021. Both Ex.
18 CEERT-1 and Ex. CEERT-2 were received into evidence on February 10, 2021.

19 Subsequently, the Commission issued Decision (“D.”) 21-03-056 which was the
20 Decision directing Pacific Gas and Electric Company (“PG&E”), Southern California
21 Edison Company (“SCE”), and San Diego Gas & Electric Company (“SDG&E”) to take
22 actions to prepare for potential extreme weather in the Summers of 2021 and 2022.

23 On August 10, 2021, Assigned Commissioner Batjer issued an Amended
24 Scoping Memo and Ruling for Phase 2 (“Amended Scoping Memo”). The Amended
25 Scoping Memo states that “[a]ll proposals submitted by parties, but addressed in the
26 Phase 1 decision, may be considered in this Phase. If a party recommends such a
27 proposal, it shall refer to the proposal in its Opening Testimony or Opening Brief.”⁴ The

² Ex. CEERT-02, at p. 2.

³ Ex. CEERT-02, at p. 2.

⁴ Amended Scoping Memo, at p. 6.

1 Amended Scoping Memo also states that Phase 2 of this proceeding will examine
2 additional supply and demand side resources and changes to current requirements
3 needed to meet Governor Newsom’s emergency proclamation that included
4 modifications to existing supply-side demand response programs and new demand
5 response programs or pilots.⁵ On August 16, 2021, ALJ Stevens issued a Ruling
6 Issuing Developed Staff Concepts Proposal Document and Seeking Comment in
7 Opening Testimony Due September 1, 2021.

8 CEERT continues to support the proposals set forth in Ex. CEERT-1 and Ex.
9 CEERT-2 that were not adopted in D.21-03-056. In addition, CEERT proposes that the
10 Commission change the ELRP compensation structure to make it comparable to what is
11 being proposed in the San Diego Gas & Electric Company (SDG&E) Advice Letter AL
12 3838-E⁶

13 **II.**
14 **CEERT’S PROPOSAL**

15 CEERT continues to hold that the Commission must afford the same sense of
16 urgency and provide the same level of compensation to solar + storage hybrids,
17 demand response (DR) and behind-the-meter (BTM) distributed energy resources
18 (DERs) as it does to incremental investments in fossil generation and short term
19 contracts with existing fossil resources while demonstrating willingness to waive
20 environmental regulations -- all in the name of the necessity to keep the lights on in
21 these trying times.

22 CEERT repeats its support for proposals made by the DR Coalition, Joint
23 Demand Response Parties (Joint DR Parties) and Polaris Energy Services (Polaris).⁷
24 D.21-03-056, issued on March 26, essentially failed to act on any of these proposals. If
25 anything, system conditions have deteriorated further since March and are forecasted to

⁵ Amended Scoping Memo, at pp. 4-5.

⁶ AL 3838-E Summer Generation Availability Agreement with Martine Corps Air Station Miramar, Aug 30, 2021

⁷ See Opening Prepared Testimony of the DR Coalition (Ex. DRC-1); Opening Prepared Testimony of the Joint Demand Response Parties (Ex. JDRP-01); and Opening Prepared Testimony of Polaris Energy Services (Ex. PES-1).

R.20-11-003 (Extreme Weather)
OPENING PHASE 2 PREPARED TESTIMONY OF CEERT

APPENDIX A

STATEMENT OF QUALIFICATIONS

James H. Caldwell, Jr.

STATEMENT OF QUALIFICATIONS OF JAMES H. CALDWELL, JR.

Q1 *Please state your name and business address.*

A1 My name is James H. Caldwell, Jr., and my business address is 1650 E. Napa Street, Sonoma, CA 95476. The offices of the Center for Energy Efficiency and Renewable Technologies (CEERT) are located at 1100 11th Street, Suite 311, Sacramento, CA 95814.

Q2 *Briefly describe your present employment.*

A2 I am an independent consultant who specializes in renewable resources and transmission policy. My current clients include CEERT and several renewable developers interested in the California. My detailed resume is attached.

Q3 *Please summarize your professional and educational background.*

A3 My academic and professional background includes over fifty years of experience in the energy industry. For the past thirty years, I have specialized in renewable technology and project development including photovoltaic solar, concentrating solar thermal power, wind, biomass, and geothermal. I have been employed in technical and executive positions in the oil industry (Atlantic Richfield), the California utility industry (Los Angeles Department of Water and Power), the US Department of Energy, renewable trade associations, and several large and small renewable resource developers. I have a BS degree in Chemical Engineering from Stanford University and an MBA from California State University at Long Beach. My detailed resume is attached.

Q4 *Have you previously testified on behalf of CEERT, before the California Public Utilities Commission?*

A4 Yes. I have testified multiple times before the Commission over the last 25 years on topics ranging from energy resource planning and policy to procurement. Most recently, I testified on behalf of CEERT in A.20-04-013 (Pacific Gas and Electric Company Application for Approval of the Oakland Clean Energy Initiative (OCEI); A.19-04-016 (Southern California Edison Company (SCE Application for

Approval of the Results of its 2018 Local Capacity Requirements Request for Proposal); A.16-08-006 (PG&E Diablo Canyon); Tracks 1 (Local Reliability) and 4 (San Onofre Nuclear Generating Station (SONGS) of the Commission's Long-Term Procurement Plan (LTPP) Rulemaking (R.12-03-014); and Track 2 of the Resource Adequacy (RA) Rulemaking (R.17-09-020).

In addition, I sponsored Exhibit CEERT-1 which is the Opening Prepared Testimony of the Center for Energy Efficiency and Renewable Technologies submitted in R.20-11-003 (Extreme Weather) on January 11, 2021. I also sponsored Exhibit CEERT-2 which is the Rebuttal Testimony of the Center for Energy Efficiency and Renewable Technologies submitted in R.20-11-003 (Extreme Weather) on January 19, 2021.

Q5 *What is the purpose of your testimony?*

A5 The purpose of my testimony is to sponsor Exhibit CEERT-3, the Opening Phase 2 Prepared Testimony of the Center for Energy Efficiency and Renewable Technologies (CEERT) in R.20-11-003 (Extreme Weather).

Q6 *Was Exhibit CEERT-3 prepared by you or under your supervision?*

A6 Yes.

Q7 *Are the statements made in your testimony true and correct to the best of your knowledge and belief?*

A7 Yes.

Q8 *To the extent that Exhibit CEERT-3 contains expressions of opinion, do they represent your best professional judgment?*

A8 Yes.

Q9 *Do you adopt Exhibit CEERT-3 as your sworn testimony in R.20-11-003 (Extreme Weather)?*

A9 Yes.

Q10 *Does this conclude your statement of qualifications?*

A10 Yes, it does.

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James Caldwell is a renowned energy professional with fifty years of experience in virtually all phases of energy production and public policy. He has Chemical Engineering and MBA degrees with an extensive plant operations and construction management background, as well as hands on corporate planning and finance experience. He has managed large organizations, been an officer of a Fortune 100 company, and started his own business. Relevant experience is as follows:

PRIVATE CONSULTING (October 2010 to Present)

For the past six years, Mr. Caldwell has used his expertise to leverage the achievement of California's goal for producing a large majority of its electricity from renewable resources with an interim goal of 33% of electric demand by 2020 while maximizing development of in-state renewable resources, managing customer bills through cost control of renewable development and grid integration, improving energy efficiency, and actively involving consumers through what is known as Demand Response. He serves as Senior Advisor for the Center for Energy Efficiency and Renewable Technologies (CEERT) in advocating this long term policy and near-term actions to achieve defined milestones before the California Public Utilities Commission, the California Energy Commission, the California Independent System Operator, the Legislature, Governor's Office, and other state and local government agencies. He also advises a number of renewable development companies on specific project matters typically involving grid interconnection, transmission and wholesale market issues.

SOLAR MILLENNIUM, LLC (February 2010 to October 2010)

Mr. Caldwell was an executive consultant to Solar Trust of America, a German owned manufacturer/developer of solar thermal technology, assisting them in permitting and interconnecting 2250 MW of solar projects in California and Nevada. He devised a transmission strategy to interconnect 1500 MW of these projects to the CAISO grid with over 90% of the required transmission upgrades funded by the interconnecting utility rather than the project developer. This strategy required two policy changes by the CAISO and favorable FERC and CPUC rulings.

He also functioned as President of Solar Millennium, LLC (the development arm of Solar Trust of America) in charge of permitting before the California Energy Commission and the Bureau of Land Management. This strategy resulted in receiving both State and Federal authorization to commence construction on 1500 MW of new solar thermal facilities covering more than 11,000 acres in the Eastern Mojave Desert. Formal agreements to support the projects were reached not only with State and Federal regulatory agencies, but also with Riverside County, Native American Tribes, labor unions, and five national and regional environmental groups.

LOS ANGELES DEPARTMENT OF WATER AND POWER (December 2006 to October 2009)

Mr. Caldwell joined the Los Angeles Department of Water and Power as a full time executive consultant reporting to the General Manager and the Board of Water and Power Commissioners. In March 2008, he was appointed Assistant General Manager of LADWP for Environmental Affairs. He resigned from that position in October 2009. He managed corporate environmental affairs and advised the Department on its Power Integrated Resource Plan to dramatically increase the use of renewable energy, eliminate reliance on coal, engage the customer base in energy efficiency and clean distributed generation, and improve the efficiency and flexibility of the Department's natural gas generation. He also advised the Department on its Water Integrated Resource Plan to generate all new water resources for the City of Los Angeles from

recycling and storm water capture while significantly reducing per capita water consumption. In addition to the Corporate Planning role for both the Water and the Power System Integrated Resource Plans, Mr. Caldwell had line responsibility for siting, permitting and obtaining California Environmental Quality Act approvals for the projects that made up the Department's Integrated Resource Plans. He also designed and implemented new City Planning ordinances for water conservation, customer based renewable energy development (called a "Feed In Tariff"), and low impact development.

PPM ENERGY (June 2004 to December 2006)

Mr. Caldwell joined PPM Energy (now Iberdrola Renewable Energy) as Director of Renewable Policy. At PPM, he was responsible for regulatory affairs, transmission policy, and wholesale market structure issues nationwide, and legislative affairs in California. PPM Energy has a wind project development pipeline of over 10,000 MW spread throughout the country. Mr. Caldwell was responsible for ensuring that state legislation, transmission tariffs, market rules, and transmission expansion projects are in place to facilitate the build-out of that pipeline. Much of this effort focused on implementation of ambitious Renewable Portfolio Standard programs in California, Colorado, Minnesota, New York, Iowa, and Texas.

AMERICAN WIND ENERGY ASSOCIATION (May 2001 to May 2004)

As Policy Director, Mr. Caldwell was responsible for AWEA's Transmission Initiative to integrate wind into the nation's wholesale electricity market structure and create regional grids capable of moving significant amounts of wind energy from resource rich areas to load centers. He led the wind industry effort at the Federal Energy Regulatory Commission to adopt balanced national market rules to facilitate entry of this unique technology into wholesale electricity markets while ensuring grid reliability and avoiding subsidies to wind and/or cost shifting onto other technologies and market participants. This effort led to a series of FERC Orders and adoption of innovative market rules at, for example, the Bonneville Power Administration, the California Independent System Operator, the Midwest Independent System Operator, the PJM Independent System Operator, ERCOT (Texas), the New York Independent System Operator, and the Western Area Power Administration. He advised AWEA's Legislative and Communications staff on all technical matters and served as liaison to regionally based environmental/energy company organizations (including CEERT in California) pursuing renewable energy development.

RENEWABLE RESOURCES (October 1980 to April 2001)

Mr. Caldwell is the former President of ARCO Solar Inc., the photovoltaic subsidiary of Atlantic Richfield Company. In that position, he was also a Vice President of Atlantic Richfield Company. As President of ARCO Solar, Mr. Caldwell took that company from a research organization with less than \$3 million in revenue to an integrated worldwide manufacturing and marketing operation with over \$30 million in sales. He created joint ventures in Japan and Germany, and partnered with ninety-six exclusive distributors selling ARCO Solar products in 126 countries. Prior to becoming President, Mr. Caldwell was the Senior Vice President for Manufacturing, Research, and Engineering where he constructed what, at the time, was the world's largest photovoltaic central station power plant, the 6.5 MW Carisso Plains project in Central California, as well as every large grid connected photovoltaic project constructed anywhere in the world prior to 1990. When Atlantic Richfield decided to sell ARCO Solar, Mr. Caldwell left ARCO and attempted to purchase the company. He raised over \$50 million in equity to purchase and fund the company's business plan, but was outbid by Siemens AG in July of 1989.

After leaving ARCO, Mr. Caldwell started his own consulting/project development business. He developed numerous power plant projects around the globe in partnership with Bechtel Enterprises and several European organizations. Projects included a 300 MW combined cycle gas fired power plant in Thailand, a 30MW gas turbine/water desalination cogeneration facility in an oil refinery on the island of Cyprus, a 10 MW waste wood fired power plant in northern California, and a 5 MW diesel generator/water desalination cogeneration facility in the Cape Verde Islands.

Mr. Caldwell's consulting clients included most of the national environmental organizations with a direct interest in energy policy including the National Resources Defense Council, the Sierra Club, Union of Concerned Scientists, and Environmental Defense. He also consulted for several independent power producers including Enron and PG&E's National Energy Group, and regional transmission organizations such as the California Independent System Operator.

ATLANTIC RICHFIELD COMPANY (August 1965 to September 1980)

Prior to his assignment with ARCO Solar, Mr. Caldwell held a variety of positions over a twenty-four year career with Atlantic Richfield. After graduating from college, he began employment with ARCO's predecessor, Richfield Oil Corporation, as a Refinery Process Engineer. A fourteen-year stint in refinery operations culminated in the position of Refinery Operations Manager at ARCO's Los Angeles refinery.

Mr. Caldwell was then assigned as Manager of Downstream Planning in ARCO's Corporate Planning Department. He oversaw ARCO's capital budget and worldwide strategic business plan for refining and marketing; petrochemicals; transportation including oil and gas pipelines and marine shipping; and ARCO's non-energy related diversification program. He led a corporate team that developed company investment and research policy for all synthetic fuels including coal gasification, coal liquefaction, biomass to energy, and concentrating solar power.

After leaving Corporate Planning and before assignment to ARCO Solar, he was the Project Manager and Owner's Representative for the Colony Oil Shale Development Company in Denver CO -- ARCO's primary venture into synthetic fuels. In addition, he managed ARCO's non-energy diversification effort into agricultural genetic engineering and vegetable seed production.

AFFILIATIONS

Mr. Caldwell is a former member of the Clean Air Act Advisory Committee for the Environmental Protection Agency, the Energy Modeling Committee of the Energy Engineering Board of the National Academy of Sciences, the Advisory Committee on Energy Policy for the Office of Technology Assessment, and the Advisory Board for the USAID Energy Training Program. He is a life member of the IEEE and the AIChE. Along with his wife, Jan McFarland and V. John White, in 1990 he helped found the Center for Energy Efficiency and Renewable Technologies in Sacramento, CA, and currently serves as Senior Advisor and At Large Member of the Board of Directors.

EDUCATION

Mr. Caldwell received a B.S. Degree in Chemical Engineering from Stanford University (1965) and an MBA from California State University at Long Beach (1978). He is married with three children and three grandchildren.

References on request.