CALIFORNIA ENERGY COMMISSION

California Energy Commission

STAFF REPORT

Electric Program Investment Charge 2021 Annual Report

Appendices A-B

April 2022 | CEC-500-2022-002-AP

APPENDIX A:
CEC EPIC Reporting Requirements and Budget Information for Calendar Year 2021

The California Energy Commission (CEC) is committed to transparency and full compliance with all applicable Electric Program Investment Charge (EPIC) reporting and informational requirements. This annual report has been prepared in accordance with applicable statutory reporting requirements and will be submitted to the California Public Utilities Commission (CPUC) after CEC adoption at a Business Meeting.

Appendix A provides required information (or its location) specified in Public Resources Code Sections 25711.5(f) and 25711.6, as well as additional budget information for the CEC's administration of EPIC. The CEC must prepare and submit its EPIC Annual Report to the Legislature no later than April 30 of each year, which shall include information shown in Table A-1, Item A. Additional information follows in Table A-1, and the CEC reports on its EPIC budget in the subsequent tables.

Table A-1: CEC EPIC Reporting Requirements to the Legislature
Calendar Year 2021

Legislative Requirement	Information/Location
A. Annual Report to Legislature: Public Resources Code Section 25711.5(f) requires an annual report to the Legislature. The annual report must contain all information as described in Section 25711.5(f)(1)-(8) as follows:	See below.
(1) A brief description of each project for which funding was awarded in the immediately prior calendar year, including the name of the recipient and the amount of the award, a description of how the project is thought to lead to technological advancement or breakthroughs to overcome barriers to achieving the state's statutory energy goals, and a description of why the project was selected.	Energize Innovation Showcase at https://www.energizeinnovation.fund and EPIC Database at https://www.epicpartnership.org
(2) A brief description of each project funded by the EPIC program that was completed in the immediately prior calendar year, including the name of the recipient, the amount of the award, and the outcomes of the funded project.	Energize Innovation Showcase at https://www.energizeinnovation.fund and EPIC Database at https://www.epicpartnership.org
(3) A brief description of each project funded by the EPIC program for which an award was made in the previous years but that is not completed, including the name of the recipient and the amount of the award, and a description of how the project will lead to technological advancement or breakthroughs to overcome barriers to achieving the state's statutory energy goals.	Energize Innovation Showcase at https://www.energizeinnovation.fund and EPIC Database at https://www.epicpartnership.org
(4) Identification of the award recipients that are California-based entities, small businesses, or businesses owned by women, minorities, or disabled veterans.	Appendix B to this annual report.

Legislative Requirement	Information/Location
(5) Identification of which awards were made through a competitive bid, interagency agreement, or sole source method, and the action of the Joint Legislative Budget Committee (JLBC) pursuant to paragraph (2) of subdivision (h) for each award made through an interagency agreement or sole source method.	This Appendix A, Table A-3 provides information for interagency and sole source agreements and JLBC action. Appendix B to this annual report provides information for competitive bid agreements.
(6) Identification of the total amount of administrative and overhead costs incurred for each project.	Appendix B to this annual report.
(7) A brief description of the impact on program administration from the allocations required to be made pursuant to Section 25711.6, including any information that would help the Legislature determine whether to reauthorize those allocations beyond June 30, 2023.	The required allocations are 25 percent of EPIC funds for technology demonstration and deployment at sites in and benefiting disadvantaged communities and an additional 10 percent of EPIC funds for technology demonstration and deployment at sites in and benefitting low-income communities. In 2021, the CEC allocated approximately two person-years to implement Section 25711.5(f)(7), for coordination among agreement managers to ensure diversity and equity are included across EPIC funding opportunities.
(8) Identify the projects that received follow-on funding, the amount of follow-on funding each project received, and the method and criteria that was used for their selection.	The CEC awarded eight projects follow-on funding in 2021 listed in this Appendix A, Table A-4. The criteria used to select the projects are listed in this Appendix A, Table A-5. These projects were awarded through an Invitation for Bid method. As part of this method, CEC staff identify project recipients, based on prior project performance, policy impact and statutory requirements for follow-on funding,

Legislative Requirement	Information/Location
	and invite them to submit a proposal for follow-on funding. A CEC technical evaluation committee reviews and evaluates the proposals and recommends whether the project merits follow-on funding. The proposed follow-on agreement is then considered for approval at a CEC Business Meeting.

Table A-2: CEC EPIC Reporting Requirements for the CPUC Calendar Year 2021

CPUC Requirements	Information/Location
A. Annual Report to Legislature: CPUC D.13-11-025, OP 29, requires that the annual report prepared and submitted to the Legislature pursuant to Public Resources Code Section 25711.5, also be submitted to the CPUC.	The annual report prepared and submitted to the Legislature pursuant to Public Resources Code Section 25711.5(f) will be submitted to the CPUC upon submittal to the Legislature.
B. Annual Report to CPUC: CPUC D.12-05-037, Ordering Paragraph (OP) 16, requires EPIC administrators to file an annual report each year on February 28, 2013 – February 28, 2020, with the Director of the Commission's Energy Division. This requirement in D.12-05-037 has expired. However, Public Resources Code Section 25711.5(f) continues to require the CEC to prepare and submit an EPIC Annual Report to the Legislature and CPUC D.13-11-025, OP 29, requires the CEC to submit copy of this report to the CPUC. The EPIC Annual Report is due to the Legislature no later than April 30 of each year.	This annual report has been prepared in accordance with applicable Public Resources Code reporting requirements and will be submitted to the Legislature and CPUC in accordance with Public Resources Code Section 25711.5(f) and D.13-11-025 after CEC adoption at a Business Meeting. Consistent with Rule 16.6 of the CPUC Rules of Practice and Procedure, on February 8, 2022, the CEC submitted a letter to the CPUC Executive Director proposing to submit the 2021 EPIC Annual Report and subsequent EPIC Annual Reports to the CPUC by April 30 of each year. This letter was also served on the EPIC proceeding service list. The CPUC Executive Director granted the CEC's request to submit the EPIC

CPUC Requirements	Information/Location
	Annual Report by the end of April each year going forward.
C. Service: CPUC D. 12-05-037, OP 16, requires service of the annual report on all parties in the most recent EPIC proceeding; all parties to the most recent general rate case of each investor-owned utility (IOU); and each successful and unsuccessful applicant for an EPIC funding award during the previous calendar year.	This requirement has expired, but this annual report will be served on all parties in the most recent EPIC proceeding; all parties to the most recent general rate case of each IOU; and each successful and unsuccessful applicant for an CEC EPIC funding award during the previous calendar year.
D. Information Availability: CPUC D.13-11-025, OP 13, requires EPIC administrators, except when valid reasons exist for confidentiality, to make all data, findings, results, computer models and other products developed through EPIC available upon request consistent with the treatment of intellectual property requirements.	This requirement has expired, but the CEC has and will continue to respond to all requests for information in accordance with any confidentiality requirements and consistent with the treatment of intellectual property requirements. Requests can be sent to the CEC's Energy Research and Development Division at erdd@energy.ca.gov.
E. Project Reporting: CPUC D.13-11-025, OP 14, requires annual reports to include a final report for every project completed during the previous year, including a comprehensive description of the project, detailed findings and results, a summary of all data collected, and how the data may be accessed.	This requirement has expired, but Energize Innovation Showcase at https://www.energizeinnovation.fund provides all substantive reporting for CEC EPIC projects.
F. Awards: CPUC D. 13-11-025, OP 15, requires annual reports to identify the use of noncompetitive awards.	This requirement has expired, but this Appendix A, Table A-3 provides this information.
G. Project Reporting: CPUC D.13-11-025, OP 17, requires annual reports to include project-level information on the number of bidders passing the initial pass/fail screening; the rank of the selected bidder; and if the selected bidder was not the highest scoring bidder, the project status report must also explain why a lower scoring bidder was selected.	The requirement to include a detailed bidder information has expired, and Section 25711.5(f)(5) requires only identification of bidding information, but requests can be sent to the CEC's Energy Research and Development Division at erdd@energy.ca.gov.
H. Project Reporting: CPUC D.13-11-025, OP 18, requires a justification for contracts or grants exempted from competitive bidding.	The requirement to include a justification and detailed explanation has expired, and Section

	CPUC Requirements	Information/Location
	Additionally, CPUC D. 18-10-052, pages 22-23, states that administrators should include a detailed explanation for the use of non-competitive processes.	25711.5(f)(5) requires only identification of bidding information, but requests can be sent to the CEC's Energy Research and Development Division at erdd@energy.ca.gov. This Appendix A, Table A-3 provides information for interagency and sole source agreements and JLBC action. Through 2021, the CEC has made three EPIC awards through either an interagency or sole source method.
I.	Annual Report: CPUC D. 13-11-025, OP 23, requires the information in Attachment 6 thereto to be included as an electronic spreadsheet to report on projects described in section 4.b. of the annual report outline in CPUC D. 13-11-025, Attachment 5.	This requirement has expired, but Energize Innovation Database at https://www.energizeinnovation.fund provides all substantive reporting for CEC EPIC projects, which can be downloaded as an electronic spreadsheet
J.	Annual Report: CPUC D. 13-11-025, OP 27, requires the annual report to identify the metrics used for each project, either from CPUC D. 13-11-025, Attachment 4, or additional metrics where appropriate.	This requirement has expired, but Energize Innovation Showcase at https://www.energizeinnovation.fund provides all substantive reporting for CEC EPIC projects, including metrics used for projects.
K.	Information Availability: CPUC D. 13-11-025, OP 29(b), requires that, at the CPUC's request, the CEC give the CPUC full access rights to all EPIC research, development, and demonstration, reports, intellectual property (IP), and data to which the CEC has access, with appropriate protections for proprietary data and IP against public disclosure.	This requirement has expired, but the CEC remains able and willing to comply with any CPUC requests pursuant to this requirement. Requests can be sent to the Energy Research and Development Division at erdd@energy.ca.gov.
L.	Information Availability: CPUC D. 13-11-025, page 64, encourages the CEC to make its annual reports accessible to the public on its EPIC webpage and through its public advisor.	This requirement has expired, but the CEC posts its EPIC annual reports on its Energy Research and Development Investment Plans and Annual Reports webpage at https://www.energy.ca.gov/data-reports/reports/energy-research-and-development-investment-plans-and-annual-reports, and makes its

CPUC Requirements	Information/Location
	reports available through its public advisor's office.
M. Project Reporting: CPUC D. 15-04-020, OP 6, requires the identification of any specific CPUC proceedings addressing issues related to each EPIC project.	This requirement has expired, but the CEC provides this information to the CPUC for their EPIC Database at https://www.epicpartnership.org, which identifies specific CPUC proceedings related to each CEC EPIC-funded project. In addition, CEC and CPUC staff have implemented regular coordination meetings to identify and discuss potential intersections between CEC EPIC projects and CPUC proceedings.
N. Joint Project Reporting: CPUC D. 15-04-020, OP 24, requires that if there are joint IOU and CEC projects, the IOU shall report the project title and amount of IOU funding used for the joint project(s) and the CEC shall be responsible for all other substantive reporting.	This requirement has expired, but Energize Innovation Showcase at https://www.energizeinnovation.fund provides all substantive reporting for CEC EPIC projects, including any joint IOU and CEC projects.
O. Project Reporting: CPUC D. 15-04-020, page 53, requires that if an IOU administrator chooses to be a necessary partner on an CEC EPIC project, the IOU may use its EPIC funds for in-house costs and the IOU's reports shall identify the CEC project title and amount of IOU funding used, but the CEC shall be responsible for all other substantive reporting as with all its other projects.	This requirement has expired, but Energize Innovation Showcase at https://www.energizeinnovation.fund provides all substantive reporting for CEC EPIC projects, including any joint IOU and CEC projects.
P. Fund Shifts Between Program Areas: EPIC administrators were required to obtain CPUC approval to shift more than 5 percent of budgeted funds for each funding category or program area or to new categories of funding within an approved EPIC triennial investment plan.[1] D. 21-11-028, OP 9, however, eliminated the CPUC approval requirement for shifting more than 5 percent of funds. Going	Appendix A, Table A-9 shows the 2021 funds that were shifted. The CEC did not shift more than 5 percent of funds and has no pending requests.

[1] CPUC Decision 13-11-025, Ordering Paragraph 36.

CPUC Requirements	Information/Location
forward, the CEC is "authorized to reallocate up to 15 percent of funds among each of their approved initiatives without additional Commission approval."[2]	

Source: California Energy Commission

Table A-3: Awards Made through an Interagency Agreement or Sole Source Method Through 2021

Agreement Number	Agreement Title	Recipient:	Funding Amount	Joint Legislative Budget Committee Action:
300-15-004	Optimizing Hydropower Operations While Sustaining Stream Temperatures and Ecosystem Functions	The Regents of the University of California, Merced	$650,000	Approved
300-15-005	Improving Hydrologic and Energy Demand Forecasts for Hydropower Operations with Climate Change	The Regents of the University of California, on behalf of the Irvine Campus	$720,000	Approved
300-15-006	Optimizing Use of Non-traditional Waters, Drought Proofing the Electricity System, and Improving Snowpack Prediction	The Regents of the University of California, Los Angeles	$1,130,000	Approved

Source: California Energy Commission

[2] D. 21-11-028, OP 10.

Table A-4: Follow-on Funding Projects Awarded During 2021

Agreement Number	Agreement Title	Recipient	Follow-on Funding Award Amount
300-15-007	California Sustainable Energy Entrepreneurial Development	(CalSEED) Initiative California Clean Energy Fund dba CalCEF Ventures	$33,000,000
EPC-15-030	San Diego Regional Energy Innovation Cluster	Cleantech San Diego Association	$5,000,000
EPC-15-032	Bay Area Regional Energy Innovation Cluster	Cleantech Activate Global, Inc	$4,980,000
EPC-15-038	BlueTechValley Innovation Cluster	California State University, Fresno Foundation	$5,000,000
EPC-16-015	Los Angeles Regional Energy Innovation Cluster	Los Angeles Cleantech Incubator	$4,999,247
EPC-20-019	Accelerated Deployment of Irrigation Pumping Demand Flexibility	Polaris Energy Services Inc.	$2,884,912
EPC-20-034	Building Resiliency from Within	OhmConnect, Inc.	$3,000,000
EPC-20-036	Load Shifting During Critical Summer Hours via Programmable Irrigation	AgMonitor Inc.	$349,972

Source: California Energy Commission

Table A-5: Follow-on Funding Criteria

Section 1: Administrative Screening Criteria	Follow-on project proposals must meet all the following to be eligible for funding: • The project has a prime recipient that is located in California. • The project will spend a minimum of 80 percent of its funding from the program in California. • The project has received funding for the original project or technology through a competitive bid process from a state or federal agency. • The project has demonstrated significant results under its previous award. • The project has technology breakthrough potential that can enable the state to achieve its statutory energy policy goals ahead of schedule. • The project can address near-term priorities impacting the electricity sector and its customers such as wildfires and associated power disruptions. • Absent follow-on funding, the project would experience a gap in funding that would likely prevent the technology from achieving significant technological advancement, negatively impact the ability of the project to attract sufficient private investment, or prevent the project's commercialization and associated sales revenue. • The project has not previously received follow-on funding through a non-competitive process. • For Technology Demonstration and Deployment projects, the project has a minimum of 20 percent match share.
Section 2: Technical Evaluation Criteria	The following criteria were used to assess whether the project merits follow-on funding: • The technology's competitive advantages over existing commercial offerings. • Market adoption potential for the technology in California. • Quantified and qualitative benefits to electric ratepayers based on a reasonable estimate of market adoption, if applicable. • The project's ability to address near-term priorities impacting the electricity sector and its customers including the following:

	○ Wildfires and public safety power shutoff-related outages ○ Grid and customer service reliability • Performance metrics and technical milestones that were achieved under the prior project. • Performance metrics and technical milestones being proposed for the follow-on project.

Source: California Energy Commission

CEC EPIC Budget Information for Calendar Year 2021

The following tables provide budget information for the CEC's administration of EPIC in 2021.

Table A-6: CPUC Approved, Escalated CEC EPIC Funding for 2018-2020 EPIC 3rd Investment Plan

Program Area/Funding Type	Approved Total
Applied Research and Development	$158,912,222
Technology Demonstration and Deployment	$172,237,778
Market Facilitation	$66,230,000
Subtotal	**$397,380,000**
Administration	$44,400,000
Total	**$441,780,000**

Source: California Energy Commission

Table A-7: CPUC-Approved, CEC EPIC Funding for 2021-2025 Interim EPIC 4th Investment Plan

Program Area/Funding Type	Approved Total
Applied Research and Development	$41,200,000
Technology Demonstration and Deployment	$75,000,000
Market Facilitation	$16,334,000
Subtotal	**$132,534,000**
Administration	$14,726,000
Total	**$147,260,000**

Source: California Energy Commission

Table A-8: Committed and Encumbered Project Funds by EPIC Investment Plan as of December 31, 2021

Investment Plan	Approved Plan Project Funds	Committed Project Funds	Encumbered Project Funds
2012-2014	$331,800,000	$331,800,000	$328,246,114
2015-2017	$365,004,500	$365,004,500	$352,857,997
2018-2020	$397,380,000	$397,380,000	$347,279,277
2021-2025 Interim	$132,534,000	$132,534,000	$16,000,000
Total	**$1,226,718,500**	**$1,226,718,500**	**$1,044,383,388**

Source: California Energy Commission

Table A-9: Encumbered and Unencumbered Project Funds by EPIC Investment Plan as of December 31, 2021

Investment Plan	Approved Plan Project Funds	Encumbered Project Funds	Unencumbered Project Funds
2012-2014	$331,800,000	$328,246,114	$3,553,886
2015-2017	$365,004,500	$352,857,997	$12,146,503
2018-2020	$397,380,000	$347,279,277	$50,100,723
2021-2025 Interim	$132,534,000	$16,000,000	$116,534,000
Total	**$1,226,718,500**	**$1,044,383,388**	**$182,335,112**

Source: California Energy Commission

Table A-10: EPIC Fund Shifts During 2021

Program Area/Funding Type	Approved Total	Funding Shifts	Current Total
Applied Research and Development	$158,912,222	$217,980	$159,130,202
Technology Demonstration and Deployment	$172,237,778	-$125,015	$172,112,763
Market Facilitation	$66,230,000	-$92,965	$66,137,035
Subtotal	**$397,380,000**	**$0**	**$397,380,000**
Administration	$44,400,000	$0	$44,400,000
Total	**$441,780,000**	**$0**	**$441,780,000**

Source: California Energy Commission

Appendix B: EPIC Projects Awarded Through 2021 with Fiscal and Diversity Details

Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
300-15-004	The Regents of the University of California, Merced	Optimizing Hydropower Operations While Sustaining Stream Temperatures and Ecosystem Functions	$650,000	$0	$114,054	CBE
300-15-005	The Regents of the University of California, on behalf of the Irvine Campus	Improving Hydrologic and Energy Demand Forecasts for Hydropower Operations with Climate Change	$720,000	$0	$144,000	CBE
300-15-006	The Regents of the University of California, Los Angeles	Optimizing Use of Non-traditional Waters, Drought Proofing the Electricity System and Improving Snowpack Prediction	$1,130,000	$0	$198,000	CBE
300-15-007	California Clean Energy Fund dba CalCEF Ventures	California Sustainable Energy Entrepreneurial Development (CalSEED) Initiative	$58,000,000	$3,396,223	$1,563,250	None
300-15-008	Itron, Inc., dba IBS	Research Roadmap for Getting to Zero Net Energy Buildings	$999,884	$0	$171,332	CBE
300-15-009	Guidehouse Inc.	Connecting Emerging Energy Technologies and Strategies to Market Needs and Opportunities	$6,937,889	$0	$2,714,986	None
300-15-010	Energetics Incorporated	Research Roadmap for Advancing Technologies in California's Industrial, Agricultural, and Water Sectors	$647,728	$29,610	$122,646	CBE
300-15-011	ADM Associates, Inc.	California Commercial End-Use Survey	$7,990,063	$100,893	$3,426,324	Small Business, Micro Business, CBE
300-15-013	ADM Associates, Inc.	California Investor-Owned Utility Electricity Load Shapes	$1,147,406	$58,330	$430,673	Small Business, Micro Business, CBE
300-17-003	Guidehouse Inc.	Distributed Energy Resources (DER) Roadmap	$499,065	$0	$242,382	None
300-17-004	Industrial Economics, Incorporated	Measuring Innovation Progress to Guide Future Investment: Evaluation of EPIC Benefits Methodology	$3,000,000	$0	$1,716,826	None
300-17-005	Energetics Incorporated	Research Roadmap for Cost and Technology Breakthroughs for Renewable Energy Generation	$338,059	$0	$86,365	None
300-18-001	Gladstein, Neandross & Associates LLC	Technology Transfer for EPIC Research Projects	$3,788,265	$1,310,568	$881,903	Small Business, CBE
EPC-14-001	Itron, Inc., dba IBS	Improving Solar & Load Forecasts: Reducing the Operational Uncertainty Behind the Duck Chart	$998,926	$453,462	$268,243	CBE

Appendix B: EPIC Projects Awarded Through 2021 with Fiscal and Diversity Details

Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-14-002	Geysers Power Company, LLC	Investigating Flexible Generation Capabilities at the Geysers	$3,000,000	$4,362,373	$0	CBE
EPC-14-003	University of California, Los Angeles	Low- Cost Thermal Energy Storage for Dispatchable CSP	$1,497,024	$300,000	$198,528	None
EPC-14-004	Halotechnics	Systems Integration of Containerized Molten Salt Thermal Energy Storage in Novel Cascade Layout	$1,500,000	$19,038	$283,080	None
EPC-14-005	The Regents of the University of California, San Diego	Solar Forecast Based Optimization of Distributed Energy Resources in the LA Basin and UC San Diego Microgrid	$999,984	$999,984	$157,282	CBE
EPC-14-007	University of California - Davis	Improving Short-Term Wind Power Forecasting through Measurements and Modeling of the Tehachapi Wind Resource Area	$1,000,000	$90,325	$247,542	CBE
EPC-14-008	The Regents of the University of California, San Diego	High-Fidelity Solar Power Forecasting Systems for the 392 MW Ivanpah Solar Plant (CSP) and the 250 MW California Valley Solar Ranch (PV)	$999,898	$764,019	$168,624	CBE
EPC-14-009	The Regents of the University of California on behalf of the Berkeley campus	Optimizing Radiant Systems for Energy Efficiency and Comfort	$2,939,964	$299,194	$450,466	CBE
EPC-14-010	Lawrence Berkeley National Laboratory	Solar-Reflective "Cool" Walls: Benefits, Technologies, and Implementation	$2,500,000	$610,800	$908,941	CBE
EPC-14-011	Regents of the University of California, Davis - California Lighting Technology Center	From the Laboratory to the California Marketplace: A New Generation of LED Lighting Solutions	$2,995,187	$5,000	$557,072	CBE
EPC-14-012	Lawrence Berkeley National Laboratory	Comparing Attic Approaches for Zero Net Energy Homes	$1,000,000	$0	$563,439	CBE
EPC-14-013	The Regents of the University of California on behalf of the Berkeley campus	Very Low-cost MEMS-based Ultrasonic Anemometer for Use Indoors and in HVAC Ducts	$2,488,964	$249,000	$214,202	CBE
EPC-14-015	Lawrence Berkeley National Laboratory	Direct Current as an Integrating and Enabling Platform	$1,000,000	$100,000	$495,365	CBE
EPC-14-016	BIRA Energy	Cost- and Energy-Efficient Attic Designs for California Homes	$1,000,000	$265,000	$228,148	CBE
EPC-14-017	Lawrence Berkeley National Laboratory	Developing Flexible, Networked Lighting Control Systems That Reliably Save Energy	$1,875,000	$0	$216,162	CBE
EPC-14-019	Electric Power Research Institute, Inc.	Validated and Transparent Energy Storage Valuation and Optimization Tool	$1,000,000	$901,944	$482,416	CBE

Appendix B: EPIC Projects Awarded Through 2021 with Fiscal and Diversity Details

Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-14-021	Electric Power Research Institute, Inc.	Development and Testing of the Next Generation Residential Space Conditioning System for California	$2,993,005	$322,281	$1,072,105	CBE
EPC-14-022	ABEC #3 LLC, dba Lakeview Farms Dairy Biogas	The Lakeview Farms Dairy Biogas - To - Electricity Project	$4,000,000	$4,500,000	$29,498	CBE
EPC-14-023	Eos Energy Storage, LLC	Utility Demonstration of Znyth Battery Technology to Characterize Performance and Grid Benefits	$2,156,704	$1,167,607	$691,504	None
EPC-14-024	West Biofuels, LLC	Modular Biomass Power Systems to Facilitate Forest Fuel Reduction Treatment	$2,000,000	$730,148	$330,466	CBE
EPC-14-025	Sunfolding Inc.	Mass-manufactured, Air Driven Trackers for Low Cost, High Performance Photovoltaic Systems	$1,000,000	$1,171,565	$157,497	CBE
EPC-14-026	The Regents of the University of California, Berkeley Campus	Examining the Heterogeneity of Energy Efficiency Adoption and Savings Across Socio-Economic and Ethnic Groups Using a Large Scale Quasi-Experiment	$360,632	$150,784	$65,406	CBE
EPC-14-027	Regents of the University of California, Los Angeles	High Temperature Hybrid Compressed Air Energy Storage (HTH-CAES)	$1,621,628	$0	$206,222	CBE
EPC-14-028	InnoSepra, LLC	Low Cost Biogas Power Generation with Increased Efficiency and Lower Emissions	$1,318,940	$959,150	$105,570	CBE
EPC-14-029	ABEC #2 LLC, dba West Star North Dairy Biogas	The West Star North Dairy Biogas-to - Electricity Project	$4,000,000	$5,000,000	$32,107	CBE
EPC-14-030	Lawrence Berkeley National Laboratory	Paths to Sustainable Distributed Generation Through 2050: Matching Local Waste Biomass Resources with Grid, Industrial, and Community Levels	$1,500,000	$282,000	$670,276	CBE
EPC-14-031	University of California, Irvine	Pollution Control and Power Generation for Low Quality Renewable Fuel Streams	$1,499,386	$438,345	$145,560	None
EPC-14-032	Inova Energy Group, LLC	Capturing Cultural Diversity in California Residential Energy Efficiency Potential: An Energy Ethnography of Hispanic Households	$224,593	$0	$10,681	CBE
EPC-14-033	The Watershed Research and Training Center	North Fork Community Power Forest Bioenergy Facility Demonstration	$4,965,420	$1,361,360	$87,680	CBE
EPC-14-034	Interra Energy, Inc.	Interra Reciprocating Reactor for Low-Cost & Carbon Negative Bioenergy	$2,000,000	$4,627,400	$264,400	CBE

Appendix B: EPIC Projects Awarded Through 2021 with Fiscal and Diversity Details

Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-14-035	Lawrence Berkeley National Laboratory	Demonstration of integrated photovoltaic systems and smart inverter functionality utilizing advanced distribution sensors	$1,000,000	$25,000	$375,000	CBE
EPC-14-036	SunSpec Alliance	Smart Inverter Interoperability Standards and Open Testing Framework to Support High-Penetration Distributed Photovoltaics and Storage	$2,000,000	$2,066,875	$162,005	CBE
EPC-14-037	Center for Sustainable Energy	Home Energy Efficiency Retrofits in California: An Analysis of Sociocultural Factors Influencing Customer Adoption	$599,924	$214,000	$166,993	CBE
EPC-14-038	Indicia Consulting	Fieldwork to Document Technology Adoption and Behavior Change Across Diverse Geographies and Populations to Inform Energy Efficiency Program Design	$574,545	$52,500	$40,208	None
EPC-14-039	TRC Engineers, Inc.	Cultural Factors in the Energy Use Patterns of Multifamily Tenants	$379,019	$100,000	$107,714	CBE
EPC-14-040	Glint Photonics, Inc.	Self-Tracking Concentrator Photovoltaics for Distributed Generation	$999,940	$2,500,000	$282,545	CBE
EPC-14-041	Biogas & Electric, LLC	Installation of a Lean Burn Biogas Engine with Emissions Control to Comply with Rule 1110.2 at a Wastewater Treatment Plant in South Coast Air Quality Management District	$2,249,322	$450,000	$0	CBE
EPC-14-044	Lawrence Berkeley National Laboratory	Enabling Anaerobic Digestion Deployment for Municipal Solid Waste-to-Energy	$4,300,000	$1,500,000	$1,497,504	CBE
EPC-14-045	Taylor Energy	Advanced Recycling to 1-MW Municipal Solid Waste of Electricity Generation	$1,499,481	$46,616	$168,742	CBE
EPC-14-046	Kennedy/Jenks Consultants	Lowering Food-Waste Co-digestion Costs through an Innovative Combination of a Pre-Sorting Technique and a Strategy for Cake Solids Reduction	$1,496,902	$2,630,000	$323,906	CBE
EPC-14-047	Southern California Gas Company (SoCalGas)	Dairy Waste-to-Bioenergy via the Integration of Concentrating Solar Power and a High Temperature Conversion Process	$1,494,736	$600,000	$96,773	CBE
EPC-14-050	Gridscape Solutions, Inc.	City of Fremont Fire Stations Microgrid Project	$1,817,925	$657,260	$73,475	CBE, Minority Owned

Appendix B: EPIC Projects Awarded Through 2021 with Fiscal and Diversity Details

Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-14-051	All Power Labs, Inc.	Cleaner Air, Cleaner Energy: Converting Forest Fire Management Waste to On Demand Renewable Energy	$1,890,125	$686,038	$311,727	Small Business, Micro Business, CBE
EPC-14-052	Organic Energy Solutions, LLC	Community Scale Digester with Advanced Interconnection to the Electrical Grid	$5,000,000	$7,775,939	$252,977	CBE
EPC-14-053	Robert Bosch LLC	A Renewable Based Direct Current Building Scale Microgrid	$2,817,566	$1,797,544	$276,825	CBE
EPC-14-054	Humboldt State University Sponsored Programs Foundation	Demonstrating a renewable based microgrid for a critical facility at the Blue Lake Rancheria	$5,000,000	$1,318,422	$832,908	CBE
EPC-14-055	Chabot-Las Positas Community College District	Las Positas College Microgrid	$1,522,591	$450,000	$260,719	CBE
EPC-14-056	Regents of the University of California, Los Angeles	Demonstrating Plug-in Electric Vehicles Smart Charging and Storage Supporting the Grid	$1,989,432	$500,000	$358,770	CBE
EPC-14-057	Lawrence Berkeley National Laboratory	Smart Charging of Plug-in Vehicles with Driver Engagement for Demand Management and Participation in Electricity Markets	$1,993,355	$536,761	$812,829	CBE
EPC-14-059	Trane U.S., Inc.	Laguna Wastewater Treatment Plant Microgrid	$4,999,804	$2,290,000	$187,080	CBE
EPC-14-060	San Diego Gas & Electric Company	Demonstrate a utility-owned renewable based community microgrid at Borrego Springs California	$4,724,802	$1,739,560	$923,165	CBE
EPC-14-061	U.S. Geological Survey (Forest and Rangeland Ecosystem Science Center - FRESC)	Learning from Real-World Experience to Understand Renewable Energy Impacts to Wildlife	$1,000,000	$1,617,177	$262,924	CBE
EPC-14-062	University of California, Riverside	Energy Efficiency in California's Water Sector Using Customized Energy Management and Supervisory Control and Data Acquisition Systems	$3,017,034	$1,722,732	$452,544	CBE
EPC-14-063	Porifera, Inc.	Advance Wastewater Treatment Using Forward Osmosis to Produce High Quality Water	$3,230,420	$646,493	$964,131	CBE, Minority Owned, Woman Owned
EPC-14-064	The Regents of the University of California - Riverside	Aerosol Impacts on the Hydrology and Hydropower Generation in California	$399,818	$306,237	$92,951	CBE
EPC-14-065	Porifera, Inc.	Demonstration of Forward Osmosis to Produce Juice Concentrate, Purify and Reuse Wastewater and Reduce Energy Use	$2,499,289	$628,568	$621,536	CBE, Minority Owned, Woman Owned

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-14-066	Lawrence Berkeley National Laboratory	High-Performance Integrated Window and Facade Solutions for California Buildings	$3,000,000	$450,000	$1,308,929	CBE
EPC-14-067	The Regents of the University of California, Berkeley Campus	Improving Hydrological Snowpack Forecasting for Hydropower Generation Using Intelligent Information Systems	$1,100,000	$236,263	$205,897	CBE
EPC-14-068	Maulbetsch Consulting	Evaluation of Cost, Performance and Water Conserving Capability of Hybrid Cooling	$581,580	$0	$0	CBE
EPC-14-069	Energy and Environmental Economics, Inc. (E3)	Develop Analytical Tools and Technologies to Plan for and Minimize the Impacts of Climate Change on the Electricity System	$700,000	$0	$286,936	Small Business, CBE
EPC-14-070	Wexus Technologies, Incorporated	Wexus Energy and Water Management Mobile Software for the Agricultural Industry	$4,000,000	$1,000,000	$571,397	CBE
EPC-14-071	Frontier Wind	Rotor-Mounted Bat Impact Deterrence System Design and Testing	$862,875	$36,313	$31,238	CBE
EPC-14-072	Lawrence Berkeley National Laboratory	Building a Healthier and More Robust Future: 2050 Low Carbon Energy Scenarios for California	$700,000	$65,000	$236,701	CBE
EPC-14-073	Lawrence Berkeley National Laboratory	Monitoring the Urban Heat Island Effect and the Efficiency of Future Countermeasures	$500,000	$4,000	$116,818	CBE
EPC-14-074	The Regents of the University of California, on behalf of the Irvine Campus	Building a Climate Change Resilient Electricity System for Meeting California's Energy and Environmental Goals	$698,792	$300,000	$181,613	CBE
EPC-14-075	The Regents of the University of California, Berkeley Campus	Unlocking Industrial Energy Efficiency Through Optimized Energy Management Systems	$4,981,729	$1,530,590	$451,253	CBE
EPC-14-076	Kennedy/Jenks Consultants	Raw Wastewater Filtration to Increase Organic Removal Efficiency and Achieve Significant Electrical Savings	$3,476,085	$1,288,340	$1,184,735	CBE
EPC-14-077	Center for Sustainable Energy	Enable Standardized Vehicle-Grid Integration through Development of Universal Standard	$1,499,999	$162,474	$193,033	CBE
EPC-14-078	ChargePoint, Inc.	Next-Generation Grid Communication for Residential PEVs	$1,500,000	$142,500	$139,418	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-14-079	Electric Power Research Institute, Inc.	Assessing the Ability of Smart Inverters and Smart Consumer Devices to Enable more Residential Solar Energy	$1,705,478	$891,414	$400,537	CBE
EPC-14-080	Charge Bliss, Inc.	Renewable Microgrid for a Medical Center	$4,776,171	$2,095,835	$729,842	Micro Business, CBE
EPC-14-081	AgMonitor Inc.	Irrigation Optimization and Well Pump Monitoring to Reduce Energy and Water Consumption	$2,292,829	$535,568	$332,162	Small Business, CBE
EPC-14-082	Sierra Institute for Community and Environment	Advancing Biomass Combined Heat and Power Technology to Support Rural California, the Environment, and the Electrical Grid	$2,385,261	$593,316	$262,813	CBE
EPC-14-083	Prospect Silicon Valley	College of San Mateo Internet of Energy	$2,999,601	$1,235,000	$411,350	CBE
EPC-14-084	ABEC #4 LLC CE&S Dairy Biogas	ABEC #4 Renewable Combined Heat and Power Project	$3,000,000	$4,983,619	$0	CBE
EPC-14-085	UC Davis	Demonstration of Community Scale Low Cost Highly Efficient PV and Energy Management System	$1,238,491	$739,726	$124,883	CBE
EPC-14-086	Electric Power Research Institute, Inc.	Distribution System Aware Vehicle to Grid Services for Improved Grid Stability and Reliability	$1,499,977	$795,754	$666,988	CBE
EPC-14-088	Asetek USA, Inc.	Demonstration of Low-Cost Liquid Cooling Technology for Data Centers	$3,552,678	$1,519,738	$1,038,931	CBE
EPC-15-003	The Regents of the University of California, on behalf of the Riverside Campus	Demonstration of Community Scale Generation System at the Chemehuevi Community Center	$2,588,906	$802,478	$525,157	CBE
EPC-15-004	Electric Power Research Institute, Inc.	Climate appropriate HVAC Systems for Commercial Buildings to Reduce Energy Use and Demand	$2,834,721	$440,509	$1,088,673	CBE
EPC-15-005	ICF Incorporated, L.L.C.	Potential Impacts and Adaptation Options for the Electricity System from Sea Level Rise in the San Diego Area.	$499,929	$166,200	$240,425	CBE
EPC-15-006	Lawrence Berkeley National Laboratory	Modeling the Impact of Wildfires on California's Transmission and Distribution Grid	$500,000	$17,157	$169,786	CBE
EPC-15-007	The Regents of the University of California, Los Angeles	Climate Change in Los Angeles County: Grid Vulnerability to Extreme Heat	$500,000	$183,753	$84,000	CBE
EPC-15-008	The Regents of the University of California, Berkeley Campus	Visualizing Climate-Related Risks to the Electricity System using Cal-Adapt	$400,000	$0	$74,324	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-15-009	California Homebuilding Foundation (CHF)	Workforce Instruction for Standards and Efficiency (WISE)	$4,431,918	$15,685,075	$1,667,291	CBE
EPC-15-010	Center for Sustainable Energy	Expanding Energy-Related Career Pathways in the Electrical Industry: Increasing Workforce Development Opportunities in Disadvantaged Communities and Delivering Training on Automated Demand Response Communication Equipment to Inside Wireman Apprentice	$4,476,189	$16,165,080	$863,874	CBE
EPC-15-012	Kennedy/Jenks Consultants	Improving Membrane Treatment Energy Efficiency through Monitoring the Removal of Colloidal Particle Foulants	$1,167,034	$336,000	$429,784	CBE
EPC-15-013	The Regents of the University of California, Berkeley Campus	Open Source Platform For Plug-in Electric Vehicle Smart Charging in California	$1,500,000	$90,000	$262,826	CBE
EPC-15-015	Andromeda Power, LLC	Grid Communication Interface for Smart Electric Vehicle Services Research and Development	$681,693	$465,000	$223,081	CBE
EPC-15-016	Amber Kinetics, Inc.	A Transformative Flywheel R&D Project	$2,000,000	$7,500,000	$388,000	CBE
EPC-15-018	Eos Energy Storage, LLC	Pilot Testing of Eos' Znyth Battery Technology in Distributed Energy Storage Systems	$1,894,866	$1,436,801	$218,866	None
EPC-15-019	Regents of University of California, Davis	Low Cost, Large Diameter, Shallow Ground Loops for Ground-Coupled Heat Pumps	$1,212,186	$18,826	$338,049	CBE
EPC-15-020	Electric Power Research Institute, Inc.	Intelligent HVAC Controls for Low Income Households: A Low Cost Non-connected Device that Understands Consumer Preferences and Performs Adaptive Optimization	$2,705,759	$427,072	$903,766	CBE
EPC-15-021	AGGIOS, Inc	Mobile Efficiency for Plug Load Devices	$1,996,999	$6,030,450	$136,800	Micro Business, CBE
EPC-15-022	The Regents of the University of California, on behalf of the Irvine Campus	Power Management User Interface	$785,124	$0	$300,159	CBE
EPC-15-023	Lawrence Berkeley National Laboratory	Gaming System Energy Efficiency without Performance Compromises	$1,386,530	$0	$658,250	CBE
EPC-15-024	Lawrence Berkeley National Laboratory	Efficient and ZNE-Ready Plug Loads	$1,600,000	$495,000	$634,531	CBE
EPC-15-025	Home Energy Analytics	Plug Load Reduction App:RYPL	$884,100	$350,000	$634,531	Small Business, Micro Business, CBE, Woman Owned

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EPC-15-026	Lawrence Berkeley National Laboratory	Unlocking Plug Load Energy Savings through Energy Reporting	$1,630,699	$494,318	$123,700	CBE
EPC-15-027	Fisher-Nickel, Inc.	Electric Plug Load Savings Potential of Commercial Foodservice Equipment	$937,469	$202,450	$392,763	CBE
EPC-15-028	Electric Power Research Institute, Inc.	Real World Electrification Options of Energy Services and Environmental Justice (EJ) Considerations	$799,444	$759,213	$234,351	Woman Owned
EPC-15-029	Black & Veatch Corporation	Distributed Generation Environmental Planner	$199,976	$0	$44,350	CBE
EPC-15-030	Cleantech San Diego Association	San Diego Regional Energy Innovation Cluster	$10,000,000	$4,668,434	$880,681	CBE
EPC-15-031	Electric Power Research Institute, Inc.	Flexible Control Strategies for Plug Loads with Context-Aware Smart Power Outlets to Mitigate Electricity Waste and Support Demand Response	$1,050,022	$335,120	$366,082	CBE
EPC-15-032	Activate Global, Inc	Bay Area Regional Energy Innovation Cluster	$9,960,000	$10,245,061	$282,411	CBE
EPC-15-033	Regents of the University of California, Davis	Ventilation Solutions for Energy Efficient California Schools: Improving Indoor Air Quality through Advanced, High Performance HVAC	$1,500,000	$0	$439,287	CBE
EPC-15-034	Public Health Institute	Emerging Energy Public Health Research Roadmap	$151,000	$0	$0	CBE
EPC-15-035	Lawrence Berkeley National Laboratory	Clarifying and Quantifying Current and Near-Term Groundwater Pumping Energy Use and Costs in California to Improve Energy and Water Systems Reliability	$625,000	$22,550	$260,000	CBE
EPC-15-036	Eagle Rock Analytics	Probabilistic Seasonal and Decadal Forecasts for the Electricity System Using Linear Inverse Modeling	$400,000	$0	$26,898	CBE
EPC-15-037	Lawrence Berkeley National Laboratory	Smart Ventilation for Advanced California Homes	$1,500,000	$1,300,000	$649,037	CBE
EPC-15-038	California State University, Fresno Foundation	BlueTechValley Innovation Cluster	$10,000,000	$2,655,684	$718,347	CBE
EPC-15-039	The Regents of the University of California, Berkeley Campus	Carbon Balance with Renewable Energy: Effects of Solar Installations on Desert Soil Carbon Cycle	$499,181	$72,000	$80,312	CBE
EPC-15-040	Zoological Society of San Diego dba San Diego Zoo Global	Assessing California's Mitigation Guidelines for Burrowing Owls Impacted by Renewable Energy	$598,671	$602,936	$54,425	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-15-041	Prospect Silicon Valley	MarketZero: Taking an existing grocery store to scalable near-ZNE	$2,999,591	$650,000	$846,723	CBE
EPC-15-042	California Homebuilding Foundation (CHF)	Zero Energy Residential Optimization - Community Achievement (ZERO-CA)	$4,819,805	$2,611,014	$1,488,701	CBE
EPC-15-043	Regents of the University of California, Los Angeles	Development of a Genoscape Framework for Assessing Population-Level Impacts of Renewable Energy Development on Migratory Bird Species in California	$599,236	$888,250	$114,848	CBE
EPC-15-044	Electric Power Research Institute, Inc.	Certified Open-Source Software to Support the Interconnection Compliance of Distributed Energy Resources	$816,539	$243,722	$203,973	CBE
EPC-15-045	Electric Power Research Institute, Inc.	Transactive Incentive Signals to Manage Electricity Consumption for Demand Response	$498,054	$110,450	$190,201	CBE
EPC-15-046	Siemens Corporation, Corporate Technology	Developing a Distribution Substation Management System	$500,000	$455,000	$171,526	CBE
EPC-15-047	SLAC National Accelerator Laboratory	Powernet - A Cloud Based Method for Managing Distribution Resources	$2,210,720	$0	$865,939	CBE
EPC-15-048	Alternative Energy Systems Consulting, Inc.	Residential Intelligent Energy Management Solution: Advanced Intelligence to Enable Integration of Distributed Energy Resources	$3,996,560	$0	$637,870	CBE
EPC-15-049	Antelope Valley Water Storage, LLC	Electricity Pumped Storage Systems Using Underground Reservoirs: A Feasibility Study for the Antelope Valley Water Storage System	$197,300	$199,353	$15,276	CBE
EPC-15-050	Regents of the University of California, Davis	Winery Water and Energy Savings	$1,989,201	$404,625	$157,088	CBE
EPC-15-051	Lawrence Berkeley National Laboratory	The Value Proposition for Cost-Effective, DR-Enabling, Nonresidential Lighting System Retrofits in California Buildings	$500,000	$138,648	$130,529	CBE
EPC-15-053	Electric Power Research Institute, Inc.	Customer-Centric Approach to Scaling IDSM Retrofits	$3,894,721	$799,559	$1,382,796	Woman Owned
EPC-15-054	Universal Devices, Inc.	Complete and Low Cost Retail Automated Transactive Energy System (RATES)	$3,187,370	$1,087,710	$0	Small Business, CBE
EPC-15-055	Charge Bliss, Inc.	The Charge Bliss Advanced Renewable Energy Community for a Disadvantaged Southern California Community	$1,500,000	$96,937	$197,815	Micro Business, CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-15-056	Natural Capitalism Solutions, dba Clean Coalition	Peninsula Advanced Energy Community (PAEC)	$1,318,997	$330,000	$312,711	None
EPC-15-057	The Regents of the University of California (CIEE)	Customer-controlled, Price-mediated, Automated Demand Response for Commercial Buildings	$4,000,000	$424,000	$1,373,762	None
EPC-15-058	The Regents of the University of California, Berkeley Campus	The Oakland EcoBlock - A Zero Net Energy, Low Water Use Retrofit Neighborhood Demonstration Project	$1,500,000	$769,846	$117,432	CBE
EPC-15-059	Onset, Inc.	UniGen Smart System for Renewable Integration	$638,993	$0	$0	CBE
EPC-15-060	Regents of the University of California, Davis	Optimizing Solar Facility Configuration Effects on Habitat, Managed Plants, and Essential Species Interactions	$597,865	$103,297	$99,801	CBE
EPC-15-061	Regents of the University of California, Los Angeles	Using Data-Driven Approaches to Design Advanced Energy Communities for Existing Buildings	$1,497,996	$381,074	$449,666	CBE
EPC-15-062	The Regents of the University of California, Irvine	Robust, Low-Cost, Real-Time, NOx Sensor for Optimization of Dispatchable Distributed Generation Systems	$200,000	$0	$53,531	CBE
EPC-15-064	Prospect Silicon Valley	Innovative Net Zero: ZNE Demonstration in Existing Low-Income Mixed-Use Housing	$2,995,653	$800,000	$408,130	CBE
EPC-15-065	Office of Energy and Sustainable Development, City of Berkeley	Berkeley Energy Assurance Transformation (BEAT) Project	$1,499,214	$250,121	$500,070	CBE
EPC-15-066	Groundwork San Diego-Chollas Creek	Developing an Advanced Energy Master Plan for the Encanto Neighborhood in San Diego	$1,500,000	$520,000	$129,898	CBE
EPC-15-067	Local Government Commission	Integrated Community Resource Marketplace	$1,500,000	$12,445	$432,890	CBE
EPC-15-068	Lawrence Berkeley National Laboratory	Understanding and Mitigating Barriers to Wind Energy Expansion in California	$200,000	$70,000	$74,830	CBE
EPC-15-069	Zero Net Energy (ZNE) Alliance	Lancaster Advanced Energy Community (AEC) Project	$1,469,779	$1,500,000	$507,982	CBE
EPC-15-070	Altostratus, Inc.	Intra-urban Enhancements to Probabilistic Climate Forecasting for the Electric System	$193,326	$5,000	$14,035	Small Business, CBE
EPC-15-071	Biodico, Inc.	Zero Net Energy Farms	$1,175,919	$1,140,419	$122,540	CBE
EPC-15-072	The Regents of the University of California, Davis Campus	New Chemical Compounds for Cost-Effective Carbon Capture	$200,000	$0	$40,000	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-15-073	Regents of the University of California, Los Angeles	Identifying Effective Demand Response Program Designs to Increase Residential Customer Participation	$2,007,875	$562,633	$203,115	CBE
EPC-15-074	Center for Sustainable Energy	Meeting Customer and Supply-side Market Needs with Electrical and Thermal Storage, Solar, Energy Efficiency and Integrated Load Management Systems	$3,960,805	$1,981,262	$746,794	CBE
EPC-15-075	Electric Power Research Institute, Inc.	Customer-centric Demand Management using Load Aggregation and Data Analytics	$3,998,587	$1,270,312	$1,163,894	CBE
EPC-15-076	Zero Net Energy (ZNE) Alliance	Richmond Advanced Energy Community Project	$1,480,111	$2,590,134	$370,990	CBE
EPC-15-077	The Regents of the University of California, Irvine	Huntington Beach Advanced Energy Community Blueprint	$1,500,000	$810,998	$508,226	CBE
EPC-15-078	The Regents of the University of California, Berkeley Campus	Risk Modeling and Cognitive Science Characterization of Barriers to Climate Change Adaptation in California Electricity Sector	$350,000	$0	$48,887	CBE
EPC-15-079	Victor Valley Wastewater Reclamation Authority (VVWRA)	Advanced Renewable Energy Storage and Recycled Water Project	$1,734,059	$902,215	$220,423	CBE
EPC-15-080	Thalassa Research & Consulting, LLC	Interdependencies of Electric Grid and Critical Lifelines: Identifying Climate Exposure and Adaptation Strategies	$128,188	$0	$0	None
EPC-15-081	Ghoulem Research	Historical Insights for Electricity Transition Scenarios in California and Flexible Energy Demand Modeling for Residential Air Conditioning with Improved Behavioral Specificity	$400,000	$0	$0	CBE, Woman Owned
EPC-15-082	The Regents of the University of California, Merced	Low-Temperature Microplasma-Assisted Hydrogen Production from Biogas for Electricity Generation	$200,000	$47,199	$35,171	CBE
EPC-15-083	OhmConnect, Inc.	Empowering Proactive Consumers to Participate in Demand Response Programs	$3,995,028	$1,877,378	$245,265	CBE
EPC-15-084	BMW of North America, LLC	Total Charge Management: Advanced Charge Management for Renewable Integration	$3,999,900	$444,931	$330,779	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-15-085	Center for Sustainable Energy	San Diego Libraries Zero Net Energy and Integrated Demand Side Management Demonstration Project	$2,715,516	$544,312	$725,052	CBE
EPC-15-086	Advanced Power and Energy Program (APEP) - University of California, Irvine	Substation Automation and Optimization of Distribution Circuit Operations	$932,718	$112,281	$124,021	CBE
EPC-15-087	Electric Power Research Institute, Inc.	Cooling Tower Water Treatment using Vortex Process Technology for Energy and Water Savings	$1,999,995	$449,990	$485,121	CBE
EPC-15-088	Kennedy/Jenks Consultants	Biofiltration as an Advanced Primary Treatment Method to Achieve Substantial Energy Savings	$1,306,185	$271,750	$442,698	CBE
EPC-15-089	Electric Power Research Institute, Inc.	Expanding Standards and Developing Tools to Enable DNP3 Support of Energy Storage Use Cases	$873,516	$360,828	$187,517	CBE
EPC-15-090	The Regents of the University of California (UC Riverside)	Integrated Distributed Energy Resources Management System (iDERMS)	$1,119,437	$530,392	$97,356	CBE
EPC-15-091	Electric Power Research Institute, Inc.	Energy Efficiency and Water Savings in Agriculture by Innovative Plant-Aware Irrigation System	$1,097,990	$331,000	$220,794	CBE
EPC-15-092	Tomorrow Water dba BKT United	Low Energy Biofiltration System with Low Backwash Rate for Groundwater Contaminant Removal	$1,722,072	$417,497	$0	CBE, Minority Owned
EPC-15-093	Water Energy Innovations, Inc.	Accelerating Drought Resilience Through Innovative Technologies	$1,000,000	$5,000	$178,824	Small Business, CBE, Minority Owned, Woman Owned
EPC-15-094	Electric Power Research Institute, Inc.	Demonstration of Affordable, Comfortable, Grid Integrated Zero Net Energy Communities	$4,942,809	$1,109,482	$1,460,838	CBE
EPC-15-096	American Water Works Company, Inc.	Demonstrating Innovative Leakage Reduction Strategies: Correlating Continuous Acoustic Monitoring, Satellite Imagery and Flow Sensitive Pressure Reducing Valve System	$1,517,780	$391,461	$222,664	None
EPC-15-097	Franklin Energy Services, LLC	Achieving Zero Net Energy in Multi-family Buildings	$1,955,811	$290,090	$180,555	CBE
EPC-16-001	Institute of Gas Technology dba Gas Technology Institute	Measure Results from Affordable Zero Net Energy Homes	$1,000,000	$168,500	$325,815	None
EPC-16-002	Lawrence Berkeley National Laboratory	Pathways to More Cost-Effective ZNE Homes	$1,000,000	$50,000	$436,541	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-16-003	Regents of the University of California, Davis - California Lighting Technology Center	Pilot-Scale Evaluation of an Integrated Building Control Retrofit Package	$1,999,089	$267,363	$349,266	CBE
EPC-16-004	Lawrence Berkeley National Laboratory	Integrated Whole-Building Zero Net Energy Retrofits for Small Commercial Offices	$2,000,000	$2,000,000	$781,092	CBE
EPC-16-005	Regents of the University of California, Davis	Energy Efficient HVAC Packages for Existing Residential Buildings	$1,200,000	$0	$366,421	CBE
EPC-16-006	ES Engineering Services, LLC	Low Energy, Zero Liquid Discharge Adsorption Technology to Remove Contaminants and Recover Source Water	$986,262	$194,904	$0	CBE
EPC-16-007	Regents of the University of California, Davis	Optimization of Energy Efficiency to Achieve Zero-Net Energy in Multifamily and Commercial Buildings	$1,000,000	$105,000	$151,821	CBE
EPC-16-008	City of Santa Monica	Santa Monica Advanced Energy District	$1,487,609	$253,030	$570,347	CBE
EPC-16-009	Porifera, Inc.	Testing a Low-Energy Water Treatment System for Fail-Safe Direct Potable Reuse	$999,795	$144,784	$248,634	CBE, Minority Owned, Woman Owned
EPC-16-010	Regents of University of California, Davis	Improving Water and Energy Efficiency in California's Dairy Industry	$1,000,000	$164,710	$191,936	CBE
EPC-16-011	Kennedy/Jenks Consultants	Novel Membrane Technology to Improve Energy Efficiency and Water Savings in Wastewater Treatment Operations	$882,430	$98,600	$304,611	CBE
EPC-16-012	Altex Technologies Corporation	Power and Water Saving Advanced Hybrid Air/Wet Cooling System	$999,994	$187,207	$529,685	CBE
EPC-16-013	The Regents of the University of California on behalf of the Berkeley campus	Integrating Smart Ceiling Fans and Communicating Thermostats to Provide Energy-Efficient Comfort	$1,888,683	$315,926	$188,176	CBE
EPC-16-014	Lawrence Livermore National Laboratory	A New Solution to California's Energy and Water Challenges: Reducing the Cost of Desalination and Increasing Water Reuse	$999,040	$0	$448,176	CBE
EPC-16-015	Los Angeles Cleantech Incubator	Los Angeles Regional Energy Innovation Cluster	$9,998,494	$3,658,099	$541,645	CBE
EPC-16-016	Hyperlight Energy	Commercializing a Disruptively Low Cost Solar Collector	$750,000	$0	$177,896	CBE
EPC-16-017	Silicon Valley Clean Water	Maximizing Energy Efficiency and Reducing Bio-solids Waste from New Anaerobic Wastewater Treatment Technology	$1,999,962	$1,219,943	$327,386	None

Appendix B: EPIC Projects Awarded Through 2021 with Fiscal and Diversity Details

Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-16-018	BDP Technologies	Biological Double-Efficiency Process as an Advanced Wastewater Treatment Method to Achieve Substantial Energy and Water Savings	$1,565,400	$330,904	$15,486	CBE
EPC-16-019	Regents of University of California, Davis	21st Century Solutions for 20th Century Wind Projects	$810,438	$124,916	$322,793	CBE
EPC-16-020	SRI International	Recovery of Lithium from Geothermal Brines	$873,387	$0	$452,445	CBE
EPC-16-021	Lawrence Berkeley National Laboratory	High-Resolution Imaging of Geothermal Flow Paths Using a Cost Effective Dense Seismic Network	$1,672,639	$50,000	$678,255	CBE
EPC-16-022	Lawrence Berkeley National Laboratory	Comprehensive Physical-Chemical Modeling to Reduce Risks and Costs of Flexible Geothermal Energy Production	$999,032	$0	$480,995	CBE
EPC-16-024	San Gabriel Valley Water Company	San Gabriel Valley Water Company "Plug and Play" In-Conduit Hydropower Development Project (SGVWC Project)	$500,000	$782,000	$13,082	CBE
EPC-16-025	Stantec Consulting Services Inc.	Comprehensive Assessment, Tools and Resources for Advancing In-Conduit Hydropower in California	$400,000	$83,018	$121,338	CBE
EPC-16-026	Electric Power Research Institute, Inc.	Develop and Pilot Test Flexible Demand Response Control Strategies for Water Pumping Stations and Industrial Refrigeration Plants	$3,000,000	$465,000	$888,920	CBE
EPC-16-027	Irrigation for the Future, Inc.	Facilitating On-farm Participation in Energy Demand Management Programs	$1,588,872	$126,663	$153,035	None
EPC-16-028	Advanced Microgrid Solutions, Inc.	Irvine Ranch Water District Load Shifting and Demand Response Pilot Project	$1,403,465	$760,427	$832,615	CBE, Woman Owned
EPC-16-029	Antelope Valley Water Storage, LLC	Water/Energy Bank Proof-of-Concept	$1,000,000	$225,000	$150,000	CBE
EPC-16-030	The Regents of the University of California - Riverside	Enabling Energy Efficient Data Centers in Smart Power Distribution Systems	$1,783,118	$297,064	$306,631	CBE
EPC-16-031	SLAC National Accelerator Laboratory	VOLTTRON Testing Tool Kit	$70,000	$0	$28,501	CBE
EPC-16-032	New Buildings Institute, Inc.	Leading in Los Angeles: Demonstrating Scalable Emerging Energy Efficient Technologies for Integrated Facade, Lighting and Plug Loads	$4,981,000	$1,725,500	$1,767,847	CBE
EPC-16-033	CSU Long Beach Research Foundation	Internet of Things and Ubiquitous Sensing in University Building Energy Management: Design Optimization and Technology Demonstration	$2,509,946	$1,072,958	$78,271	None

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-16-034	Zero Net Energy (ZNE) Alliance	Automated Cloud-Based Continuously Optimizing Building Energy Management System	$2,500,000	$1,184,891	$552,488	CBE
EPC-16-035	Sunpreme, Inc.	High-Performance Cu-Plating for Heterojunction Silicon Cells, Based on Ultra-Low-Cost Printed Circuit Board (PCB) Technology (Stage II)	$2,430,000	$0	$730,620	CBE
EPC-16-036	AltaRock Energy, Inc.	Thermoelectric Generator Application and Pilot Test in a Geothermal Field	$1,280,000	$118,095	$310,473	None
EPC-16-037	Amador Water Agency	The Amador Water Agency In-Conduit Hydropower Development Project (AWA Project)	$750,000	$1,115,000	$0	CBE
EPC-16-038	Regents of University of California, Davis	Use of Indoor Rearing for Head-Starting Desert Tortoises	$493,089	$61,119	$106,461	CBE
EPC-16-039	The Regents of the University of California, on behalf of the Irvine Campus	A Life Cycle Assessment of the Environmental and Human Health Impacts of Emerging Energy Storage Technology Deployment	$600,000	$186,219	$98,142	CBE
EPC-16-040	The Regents of the University of California, Davis Campus	Assessing Cooling Tower PM2.5 and PM10 Emissions using Advanced Instrumentation, Plume Transects, and Plume Modeling	$700,000	$0	$108,004	CBE
EPC-16-041	Lawrence Berkeley National Laboratory	Benefits and Challenges in Deployment of Low GWP A3 Refrigerants in Residential and Commercial Cooling Equipment	$500,000	$500,000	$221,625	CBE
EPC-16-042	Lawrence Berkeley National Laboratory	Low-Cost High-Reliability Thermoelectrics for Waste Heat Conversion	$2,000,000	$516,502	$440,167	CBE
EPC-16-043	Natel Energy	Cost-Effective and Climate Resilient In-Conduit Hydropower and Civil Works Innovation	$954,715	$954,715	$0	None
EPC-16-044	Terzo Power Systems, LLC.	Hyper Efficient Pump Motor Unit with Fully Integrated Permanent Magnet Motor and Motor Controls with Combined Liquid Cooling	$2,311,050	$145,689	$99,350	CBE
EPC-16-045	Polaris Energy Services Inc.	Development of New Technologies for Agricultural Loads to Participate in Renewables Integration, RTP Programs, and/or New Time of Use Rates	$2,884,912	$649,485	$415,408	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-16-046	Institute of Gas Technology dba Gas Technology Institute	Pilot Testing of Isothermal Compression	$2,570,946	$238,700	$628,022	None
EPC-16-047	Humboldt State University Sponsored Programs Foundation	California Biopower Impact Project	$1,000,000	$131,575	$247,784	CBE
EPC-16-048	Electric Power Research Institute, Inc.	Development and Testing of an Energy Efficient Ultra-low Charge Ammonia Refrigeration System in a Food Processing Plant	$2,406,054	$605,000	$804,238	CBE
EPC-16-049	University of California - Merced	Ultra-High Power Density Roadway Piezoelectric Energy Harvesting System	$1,270,000	$0	$310,100	CBE
EPC-16-050	The Regents of the University of California, San Diego	Scaling Reliable, Next-Generation Perovskite Solar Cell Modules	$1,450,000	$146,050	$184,540	CBE
EPC-16-051	AgMonitor Inc.	Increased Energy Efficiency via Programmable Irrigation and Fertigation	$2,992,660	$350,547	$341,285	Small Business, CBE
EPC-16-052	Pyro-E, LLC	Force Multiplier Actuated Piezoelectric Energy Harvester for Roadway Energy Recovery	$1,000,000	$100,007	$234,596	CBE
EPC-16-053	Zoological Society of San Diego dba San Diego Zoo Wildlife Alliance	Habitat Influences on Desert Tortoise Translocation Success	$499,605	$390,528	$32,237	CBE
EPC-16-054	Electric Power Research Institute, Inc.	Open Vehicle to Building/Microgrid Integration Enabling ZNE and Improved Distribution Grid Services	$1,500,000	$2,341,001	$540,024	CBE
EPC-16-055	Zeco Systems, Inc. dba Greenlots	Improving Commercial Viability of Fast Charging by Providing Renewable Integration and Grid Services with Integrated Multiple DC Fast Chargers	$826,250	$302,008	$0	None
EPC-16-056	Lawrence Berkeley National Laboratory	Performance Evolution, Specification and Verification of Building Control Sequences	$1,000,000	$0	$473,633	CBE
EPC-16-057	Board of Trustees of the Leland Stanford Junior University (SLAC National Accelerator Laboratory)	Development of Smart Charging Infrastructure Planning Tool (SCRIPT)	$1,500,000	$94,153	$328,945	CBE
EPC-16-058	Prospect Silicon Valley	Advanced Transit Bus VGI Project	$1,675,417	$1,064,569	$412,909	CBE
EPC-16-059	Lawrence Berkeley National Laboratory	Advanced VGI Control to Maximize Battery Life and Use of Second-Life Batteries to Increase Grid Service and Renewable Power Penetration	$1,500,000	$0	$407,071	CBE
EPC-16-061	Nuvve Corporation	Intelligent Electric Vehicle Integration (INVENT)	$3,967,165	$3,697,744	$212,026	None

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EPC-16-062	Regents of the University of California, Davis	Advancing Demand Response in the Water Sector	$2,984,983	$105,765	$282,171	CBE
EPC-16-063	University of California, San Diego Scripps Institution of Oceanography 0955	Advanced Statistical-Dynamical Downscaling Methods and Products for California Electricity System Climate Planning	$1,399,888	$0	$192,928	CBE
EPC-16-064	US Geological Survey	Investigating Avian Attraction to Solar Energy Facilities Through a Lake Effect	$499,785	$740,251	$200,240	None
EPC-16-065	Zero Net Energy (ZNE) Alliance	California E-Bus to Grid Integration Project	$2,633,670	$2,900,097	$658,112	Micro Business, Minority Owned
EPC-16-067	Lawrence Berkeley National Laboratory	Robust Super Insulation at a Competitive Price	$100,000	$0	$42,679	CBE
EPC-16-068	Electric Power Research Institute, Inc.	Integrated Community-Level Solutions for Resource Management for a Grid and Customer Benefits	$2,976,991	$1,002,900	$864,761	CBE
EPC-16-070	Electric Power Research Institute, Inc.	Integrating Front-of-the-Meter Energy Storage with Smart PV Inverters and Solar Forecasting	$1,832,770	$591,438	$644,129	CBE
EPC-16-073	Natural Capitalism Solutions, dba Clean Coalition	Valencia Gardens Energy Storage	$1,994,687	$620,470	$251,310	None
EPC-16-077	The Regents of the University of California - Riverside	Solar+ Storage Integrated Energy Management Demonstration in a Supportive Housing Facility	$2,110,657	$411,509	$332,995	CBE
EPC-16-079	Electric Power Research Institute, Inc.	Impact Assessment & Secure Implementation of California Rule 21 Phase 3 Smart Inverter Functions to Support High PV Penetration	$2,935,822	$1,659,077	$601,394	CBE
EPC-17-001	Taylor Engineering	Best-in-Class: Demonstrating Scalable Operational Efficiency through Optimized Controls Sequences and Plug-and-Play Solutions	$2,966,716	$2,773,750	$934,507	Small Business, CBE
EPC-17-002	Humboldt State University Sponsored Programs Foundation	Scaling Solar+ for Small and Medium Commercial Buildings	$1,500,000	$354,959	$413,443	CBE
EPC-17-003	Clean Power Research, L.L.C.	Developing a Comprehensive, System-Wide Forecasting to Support High-Penetration Solar	$750,000	$320,000	$261,080	CBE
EPC-17-004	Energy and Environmental Economics, Inc. (E3)	Enhanced Modeling Tools to Maximize Solar + Storage Benefits	$987,379	$115,463	$457,030	Small Business, CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-17-005	Electric Power Research Institute, Inc.	Integrating Building-Scale Solar + Storage Advanced Technologies Maximizing Value to Customer and the Distribution Grid	$1,491,764	$271,090	$360,079	CBE
EPC-17-006	Electric Power Research Institute, Inc.	Development, Implementation, and Integration of a Holistic Solar Forecasting System for California	$749,740	$324,830	$365,395	CBE
EPC-17-007	Center for Sustainable Energy	Integrated Community Solar and Storage at a Low-Income Mobile Home Park	$2,005,923	$340,905	$499,016	CBE
EPC-17-008	Center for Sustainable Energy	Empowering Energy Efficiency in Existing Big-Box Retail/ Grocery Stores	$2,824,685	$759,984	$544,329	CBE
EPC-17-009	Willdan Energy Solutions	Bundle-Based Energy Efficiency Technology Solutions for California (BEETS for California)	$3,994,256	$2,382,225	$875,037	CBE
EPC-17-010	Lawrence Berkeley National Laboratory	Integrated Heat and Moisture Calculation Tool for Building Envelopes	$125,000	$0	$59,209	CBE
EPC-17-011	HZIU Kompogas SLO Inc.	Demonstration of an Innovative, Community-Scale, Organic Waste-to-Energy Facility	$4,000,000	$5,278,373	$0	None
EPC-17-012	Taylor Energy	Biomass-to-Electricity: Pilot-Scale Testing of Baseload Compared to Flexible Power	$1,499,000	$0	$254,980	CBE
EPC-17-013	Altex Technologies Corporation	Small Scale Forest Waste Power System	$1,499,994	$161,728	$768,611	CBE
EPC-17-014	Newcomb Anderson McCormick, Inc.	Advanced Plug Load Controls and Management in the Educational Environment	$1,264,296	$625,486	$181,505	CBE
EPC-17-015	Nevados Engineering, Inc.	Installation and Soft Cost Reduction for Horizontal Single Axis Trackers (Stage II)	$999,822	$0	$76,846	CBE
EPC-17-016	The Regents University of California, Davis	An Online Siting Tool Application for Woody Biomass-to-Electricity Facilities in California	$1,222,284	$28,523	$203,977	CBE
EPC-17-017	All Power Labs, Inc.	The Nexus of Clean Energy, Healthy Forests, and a Stable Climate: Innovative Biomass Gasification for Sustainable Forest Management	$1,500,000	$750,000	$0	Small Business, Micro Business, CBE
EPC-17-018	The Regents University of California, Davis	Demonstrating the Potential for On-Site Electricity Generation from Food Waste Using Containerized Anaerobic Digestion Units	$2,411,007	$756,133	$171,649	CBE
EPC-17-019	Fall River Resource Conservation District	Burney-Hat Creek Bioenergy	$5,000,000	$5,000,000	$0	None

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-17-020	Board of Trustees of the Leland Stanford Junior University (SLAC National Accelerator Laboratory)	Demonstration of Vehicle-Grid Integration under Non-residential Scenarios	$2,340,000	$597,593	$728,697	CBE
EPC-17-021	Mariposa County Resource Conservation District (MCRCD)	Mariposa Biomass Project	$5,000,000	$11,135,367	$8,842	CBE
EPC-17-022	Lystek International Limited	Skid Mounted Mobile Pilot/Education Unit for Source Separated Organics Processing with Cogeneration Capabilities	$1,589,163	$493,075	$19,396	CBE
EPC-17-023	RCAM Technologies	High Performance, Ultra-Tall, Low Cost Concrete Wind Turbine Towers Additively Manufactured On-Site	$1,249,982	$62,558	$164,368	None
EPC-17-024	Southern California Edison	Electric Access System Enhancement (EASE)	$2,000,000	$8,008,123	$75,160	CBE
EPC-17-025	Cohen Ventures, Inc. dba Energy Solutions	TradePro Connect Product and Service Procurement Project	$991,110	$994,084	$159,260	Small Business
EPC-17-026	Lawrence Berkeley National Laboratory	Accelerating the Adoption of EVs as DERs through Fleet Procurement	$1,000,000	$1,779,718	$115,875	CBE
EPC-17-027	The Regents of the University of California, Berkeley Campus	The Distributional Electricity Impacts of Climate Change on California's Residential Communities	$200,000	$0	$36,240	CBE
EPC-17-028	Lawrence Berkeley National Laboratory	High Resolution Source Importance Mapping to Minimize Impacts of Waste Biomass Distributed Generation on Ozone Air Quality in Disadvantaged Communities in the San Joaquin Valley	$200,000	$0	$89,052	CBE
EPC-17-029	Cal Poly Corporation	Lowering Costs of Underwater Biological Surveys to Inform Offshore Renewable Energy	$199,978	$0	$29,057	CBE
EPC-17-030	Prospect Silicon Valley	California Opportunities for Procurement to Accelerate Clean Energy (Cal-OP ACE)	$3,998,715	$1,244,450	$128,875	CBE
EPC-17-031	City of Long Beach, Harbor Department (Port of Long Beach)	Port of Long Beach Microgrid - Resilience for Critical Facilities	$5,000,000	$2,120,000	$95,909	CBE
EPC-17-032	The Regents of the University of California, San Diego	Miramar Microgrid - Flight Line Resilience through Landfill Gas and Energy Storage	$5,000,000	$6,002,320	$425,962	CBE
EPC-17-033	The Regents of the University of California, Berkeley Campus	Building on the Cal-Adapt Platform to Deliver Actionable Information in Support of Electricity Sector Resilience	$900,000	$0	$172,916	CBE
EPC-17-034	Western Cooling Efficiency Center - UC Davis	California Energy Product Evaluation Hub	$10,993,646	$2,347,629	$3,915,128	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-17-035	Lawrence Berkeley National Laboratory	Building Healthier and More Energy-Efficient Communities in Fresno and the Central Valley	$1,100,000	$0	$401,103	CBE
EPC-17-038	Lawrence Berkeley National Laboratory	Camp Parks Army Microgrid - A Blueprint for Nested, Modular Design	$5,000,000	$11,410,900	$817,221	CBE
EPC-17-039	Electric Power Research Institute, Inc.	Validated, Transparent, and Accessible Microgrid Valuation and Optimization Tool (DER-VET)	$2,000,000	$568,110	$479,496	Woman Owned
EPC-17-040	Rocky Mountain Institute	Mass Deployment of Energy Efficiency Retrofits in Disadvantaged Communities	$7,204,308	$6,705,308	$1,555,647	None
EPC-17-041	Sonoma Clean Power Authority	Lead Locally	$9,814,596	$3,335,500	$4,687,705	CBE
EPC-17-042	Camptonville Community Partnership, Inc	Camptonville Biomass-to-Energy Project	$4,999,830	$13,030,225	$110,031	CBE
EPC-17-043	Hitachi America LTD	GLOW: A User-friendly Interface for GridLAB-D	$2,999,699	$1,255,060	$193,906	None
EPC-17-044	InTech Energy, Inc.	Researching, Developing, Demonstrating the Commoditization of Building Energy Efficiency Retrofits in Southern California	$7,199,315	$2,600,274	$2,139,730	CBE
EPC-17-045	The Regents of the University of California, on behalf of the Irvine Campus	Oak View Microgrid: Using Microgrid Technologies to Simultaneously Improve Quality of Life and Electric Grid Operations	$1,099,760	$367,804	$157,594	CBE
EPC-17-046	SLAC National Accelerator Laboratory	HiPAS GridLAB-D: A High-Performance Agent-based Simulation using GridLAB-D	$3,068,781	$300,000	$1,149,270	CBE
EPC-17-047	SLAC National Accelerator Laboratory	OpenFIDO: An Open-source Framework for Integrated Data Operations	$1,000,000	$30,000	$367,282	CBE
EPC-17-048	The Regents of the University of California, Berkeley Campus	Engaging Communities in the Design of Sustainable Energy and Localized Futures (SELF) Models in California's San Joaquin Valley	$1,100,000	$0	$228,397	CBE
EPC-17-049	San Diego Unified Port District (Port of San Diego)	Port of San Diego Microgrid - Resiliency in Terminal Operations	$4,985,272	$4,629,936	$422,043	CBE
EPC-17-050	The Regents of the University of California, Los Angeles	Using Big Data to Holistically Assess Benefits from Building Energy System Transition Pathways in Disadvantaged Communities	$1,098,662	$54,740	$233,968	CBE
EPC-17-051	The Regents of the University of California, San Diego	LEED: A Lightwave Energy-Efficient Datacenter	$475,000	$0	$78,440	CBE
EPC-17-052	Gridscape Solutions, Inc.	Urban Microgrids for Grid Resiliency and Disaster Readiness	$4,995,498	$3,281,992	$562,214	CBE, Minority Owned

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-17-053	Sonoma County Junior College District/ Santa Rosa Junior College	Santa Rosa Junior College Urban Microgrid Project	$4,999,005	$8,689,759	$348,244	CBE
EPC-17-054	Rialto Bioenergy Facility LLC	Rialto Resilient Clean Power Microgrid	$5,000,000	$6,515,000	$0	CBE
EPC-17-055	Humboldt State University Sponsored Programs Foundation	Redwood Coast Airport Microgrid	$5,000,000	$6,322,728	$500,449	CBE
EPC-18-001	Electric Power Research Institute, Inc.	Port Hueneme Navy Data Center Microgrid	$4,998,345	$3,502,754	$848,609	Woman Owned
EPC-18-002	California Clean Energy Fund dba CalCEF Ventures	California Test Bed Initiative	$10,999,701	$887,053	$566,364	None
EPC-18-003	Lucent Optics, Inc.	Ultra-thin Flexible LED Lighting Panels	$1,692,069	$169,207	$516,434	CBE
EPC-18-004	Ubiquitous Energy, Inc.	Accelerating Commercialization of Advanced Energy Efficient Windows	$2,998,055	$4,310,659	$407,192	None
EPC-18-005	Heliotrope Technologies, Inc.	Building Energy Impact Analysis of Low Cost NanoEC Electrochromic Window Control Algorithm Optimization	$3,667,104	$952,276	$1,182,911	None
EPC-18-006	SkyCool Systems Inc.	Radiative Sky Cooling-Enabled Efficiency Improvements on Commercial Cooling Systems	$1,770,563	$288,386	$406,651	CBE
EPC-18-007	Glint Photonics, Inc.	High Efficiency Dynamic Lighting Systems	$1,999,990	$200,064	$43,764	CBE
EPC-18-008	MicroBio Engineering, Inc.	Improving Energy Efficiency and Performance of Wastewater Recycling	$1,550,227	$160,000	$548,356	CBE
EPC-18-009	Porifera, Inc.	Energy Savings Through Osmotic Concentration for the Food and Beverage Processing Industry	$2,800,687	$605,073	$908,606	CBE, Minority Owned, Woman Owned
EPC-18-010	Porifera, Inc.	Energy and Water Savings in Food and Beverage Wastewater Reuse	$1,777,132	$195,000	$480,430	CBE, Minority Owned, Woman Owned
EPC-18-011	Zero Net Energy (ZNE) Alliance	Lancaster Advanced Energy Community (AEC) Project	$4,999,060	$5,674,720	$809,583	CBE
EPC-18-012	Primus Power Corporation	Production Scale-Up of Low-Cost, Long-Life Flow Battery	$4,000,000	$6,319,321	$400,000	Micro Business, CBE
EPC-18-013	The Regents of the University of California, Berkeley	The Oakland EcoBlock, Phase II: A Zero Net Energy, Low Water-Use Retrofit Neighborhood	$5,000,000	$3,491,600	$700,249	CBE
EPC-18-014	Spark Thermionics, Inc.	Production Scale-Up of Thermionic Energy Harvesters	$1,349,933	$270,000	$184,914	CBE
EPC-18-015	Cuberg, Inc.	Improved Batteries for California's Zero-Emissions Vehicle Future	$1,566,639	$316,200	$229,783	None

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-18-016	Halo Industries, Inc.	Production Scale-Up of Advanced Wafer Technology for Drastic Solar Photovoltaics Cost Reduction	$4,000,000	$1,250,000	$584,267	None
EPC-18-017	Sepion Technologies, Inc.	Scaling Up Pilot Production of Nanoporous Membranes for Battery Storage Technologies	$2,675,793	$2,489,417	$382,307	CBE
EPC-18-018	Caban Systems, Inc.	Prototype to Production: Modular Battery Platform Project for California Critical Infrastructure	$1,878,760	$1,396,943	$0	None
EPC-18-019	Treau, Inc.	Treau: Low-GWP, High-Efficiency Heat Pump and Air Conditioner	$2,805,907	$1,901,907	$834,152	CBE
EPC-18-020	Glint Photonics, Inc.	Production Scale-Up of High Efficiency Adjustable Lighting Products	$1,998,922	$399,831	$619,177	CBE
EPC-18-021	South 8 Technologies	Production Scale-Up for Next Generation Batteries Using Liquefied Gas Electrolytes	$1,028,059	$466,416	$230,205	CBE
EPC-18-022	Natron Energy, Inc.	Advanced Energy Storage for Electric Vehicle Charging Support	$2,998,064	$1,239,515	$96,753	CBE
EPC-18-023	Eos Energy Storage, LLC	Utility Demonstration of Non-Flammable, Aqueous-Zinc Battery Storage: Innovation Scale-Up to Alleviate T&D Congestion and Mitigate Wildfire Risks	$2,986,110	$3,122,852	$356,447	None
EPC-18-024	Element 16 Technologies, Inc	Large-Scale Sulfur Thermal Battery Demonstration for Enhanced Grid Flexibility and Increased Renewable Penetration	$3,000,000	$640,000	$430,000	CBE
EPC-18-025	General Engineering & Research, L.L.C.	Scale-up of Magnetocaloric Materials for High Efficiency Magnetic Refrigeration	$1,088,188	$306,791	$409,462	Small Business, CBE, Woman Owned
EPC-18-026	Spatial Informatics Group, LLC	Comprehensive Open Source Development of Next Generation Wildfire Models for Grid Resiliency	$5,000,000	$1,656,600	$546,431	Micro Business, CBE
EPC-19-002	University of California, Los Angeles	"Smart Greenhouse": Integrated Photovoltaics/Photosynthesis for Energy and Food	$600,000	$60,000	$97,807	None
EPC-19-003	Tandem PV, Inc.	Processing and Architecture Design to Develop and Demonstrate Stable and Efficient Perovskite + Silicon Tandem Modules	$999,802	$999,986	$161,295	CBE
EPC-19-004	The Regents of the University of California, San Diego	High-Efficiency Perovskite Tandem Modules with Resilient Interfaces	$993,458	$659,295	$103,945	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-19-005	Zero Net Energy (ZNE) Alliance	Richmond Advanced Energy Community (AEC) Phase II Project	$4,998,555	$2,813,454	$1,092,030	CBE
EPC-19-006	The Energy Coalition	Basset-Avocado Advanced Energy Community	$9,093,833	$5,459,863	$0	CBE
EPC-19-007	RCAM Technologies	On-site 3D Concrete Printing for Next-Generation Low-Cost Wind Plants	$2,999,979	$302,000	$507,530	None
EPC-19-008	Aker Offshore Wind	NextWind Real-time Monitoring System	$2,000,000	$201,775	$503,271	None
EPC-19-009	Integral Consulting Inc.	A Risk Assessment Framework to Evaluate Effects of Offshore Wind Farms on the California Upwelling Ecosystem	$500,000	$152,821	$174,739	None
EPC-19-010	Lawrence Berkeley National Laboratory	Integrated Distributed Fiber Optic Sensing for Real-Time Monitoring of OWT Gearbox and Tower Operation and Marine Animal Activities	$2,000,000	$520,000	$684,912	CBE
EPC-19-011	Humboldt State University Sponsored Programs Foundation	Seabird 3D Distribution and Relative Risk from California Offshore Wind Turbines	$500,000	$20,046	$123,126	CBE
EPC-19-012	Franklin Energy Services, LLC	Affordable Space Conditioning and Domestic Hot Water Systems with Low Emissions and High Performance	$1,499,925	$163,750	$343,790	CBE
EPC-19-013	Lawrence Berkeley National Laboratory	HP-Flex: Next Generation Heat Pump Load Flexibility	$3,000,000	$386,500	$989,122	CBE
EPC-19-014	Electric Power Research Institute, Inc.	A zero GWP heat pump and distribution system for all-electric heating and cooling in California	$2,498,557	$440,000	$648,140	CBE
EPC-19-015	Western Cooling Efficiency Center - UC Davis	Optimizing Heat Pump Load Flexibility for Cost, Comfort, and Carbon Emissions	$2,537,436	$256,701	$570,955	CBE
EPC-19-016	Western Cooling Efficiency Center - UC Davis	Affordable Near- and Medium-Term Solutions for Integration of Low GWP Heat Pumps in Residential Buildings	$1,916,306	$200,000	$455,123	CBE
EPC-19-017	Materials Research LLC	Pilot Scale Recovery of Lithium from Geothermal Brines	$1,878,634	$0	$265,480	CBE
EPC-19-018	Hell's Kitchen Geothermal LLC	Hell’s Kitchen Geothermal Lithium Extraction Pilot	$1,460,735	$480,000	$117,874	CBE
EPC-19-019	Lawrence Berkeley National Laboratory	Joint Time-Lapse Acquisition and Inversion of Passive Seismic and Magnetotelluric Data for Monitoring Reservoir Processes at the Geysers Geothermal Field	$1,661,032	$247,611	$705,287	CBE
EPC-19-020	BHER Minerals, LLC	Salton Sea Geothermal Lithium Recovery Demonstration Project	$6,000,000	$4,025,000	$0	CBE

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EPC-19-021	General Engineering & Research, L.L.C.	High Efficiency Magnetic Refrigeration for Industrial Cryogenic Applications	$1,699,066	$545,658	$0	Small Business, CBE, Woman Owned
EPC-19-022	The Regents of the University of California, Merced	Stirling cycle heat pumps for industrial heat recovery	$656,630	$135,927	$0	CBE
EPC-19-023	Institute of Gas Technology dba Gas Technology Institute	Booster Ejector Enhancement of Compressor Refrigeration Facilites Utilizing Industrial Process Waste Heat	$1,621,556	$173,707	$404,995	None
EPC-19-024	Electric Power Research Institute, Inc.	Development of an Advanced High Temperature Heat Pump for the Efficient Recovery of Low-Grade Industrial Waste Heat	$1,999,483	$405,848	$458,916	CBE
EPC-19-025	Nelumbo Inc.	Advanced Heat Exchanger Coatings to Improve Energy Efficiency of Industrial Refrigeration System	$1,997,411	$925,500	$59,837	CBE
EPC-19-026	Center for Sustainable Energy	Developing Lessons Learned, Best Practices, Training Materials, and Guidebooks for Customer Side of the Meter Energy Storage	$1,000,000	$244,000	$349,527	CBE
EPC-19-029	Hell's Kitchen Geothermal LLC	Improved Silica Removal for Enhanced Geothermal Plant Performance	$2,999,599	$45,000	$326,428	CBE
EPC-19-030	Association for Energy Affordability	Large Capacity CO2 Central Heat Pump Water Heating Technology Evaluation and Demonstration	$2,800,193	$1,227,128	$422,709	CBE
EPC-19-031	Antora Energy, Inc.	Solid-state Long Duration Energy Storage for Industrial Applications	$1,999,787	$2,071,313	$99,176	CBE
EPC-19-032	Association for Energy Affordability	Low-GWP Mechanical Modules for Rapid Deployment Project (LG-MM)	$1,499,926	$58,520	$104,657	CBE
EPC-19-033	Lawrence Berkeley National Laboratory	Demonstrating Benefits of Highly Insulating Thin-Triple Window Retrofits in California	$1,850,000	$630,000	$465,885	CBE
EPC-19-034	e-Zn Inc.	Commercialization of Lowest-Cost, Long Duration Energy Storage Systems	$1,286,777	$411,010	$0	None
EPC-19-035	Electric Power Research Institute, Inc.	Advancing Energy Efficiency in Manufactured Homes Through High Performance Envelope	$1,999,982	$402,998	$457,245	CBE
EPC-19-036	Rocky Mountain Institute	Varieties of Prefabricated Envelope Solutions for CA Low-Rise Buildings	$1,917,967	$170,624	$269,494	None
EPC-19-037	DasH2energy LLC	Demand Based Renewable Hydrogen Power-to-Power Project	$1,275,475	$275,000	$70,935	CBE, Minority Owned

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EPC-19-038	Smartville, Inc.	Low-Cost and Easy-to-Integrate Second-Life Battery HUB	$2,035,787	$955,256	$79,875	CBE
EPC-19-039	RePurpose Energy, Inc.	Reuse of Electric Vehicle Batteries for Solar Energy Storage	$3,000,000	$1,042,541	$210,998	CBE
EPC-19-040	Salient Energy Inc.	California Zinc-ion Energy Storage Development and Validation Project	$1,583,125	$1,416,613	$64,904	None
EPC-19-041	Form Energy, Inc.	Demonstrating an Aqueous Air-Breathing Energy Storage System for Multi-Day Resiliency	$1,998,215	$1,603,079	$0	None
EPC-19-042	Anzode Inc.	Anzode: Zinc Batteries for California Electrical Customer Power Backup	$1,747,721	$621,870	$0	None
EPC-19-043	Institute of Gas Technology dba Gas Technology Institute	Advanced Energy-efficient and Fire-resistive Envelope Systems Utilizing Vacuum Insulation for Manufactured Homes	$2,000,000	$801,557	$658,603	None
EPC-19-044	T2M Global LLC	Ultra-high Efficiency, Lower-Cost, Green Electrolytic H2 for Microgrids in California	$995,250	$288,437	$117,500	CBE
EPC-19-045	GRID Alternatives	Critical Resilience for Fire and Emergency Facilities with the Soboba Band of Luiseño	$1,710,494	$472,610	$298,664	CBE, Woman Owned
EPC-19-046	Indian Energy LLC	Demonstrating a Long-duration Flywheel Energy Storage System	$1,218,374	$822,400	$0	CBE, Minority Owned
EPC-19-047	BoxPower Inc.	CATAPULT: "California Title 24 Advanced Power Utilization Technology"	$999,099	$253,095	$287,885	Micro Business, CBE
EPC-19-050	Rincon Band of Luiseño Indians	Rincon Long Duration Multi-Storage Solar Microgrid	$7,282,496	$9,500,454	$0	CBE
EPC-19-051	Indian Energy LLC	Hybrid Modular Storage System (HMSS) as a long-duration energy storage technology Demonstration	$5,002,334	$10,766,756	$0	CBE, Minority Owned
EPC-19-053	San Diego State University Research Foundation	Cost-Effective Integration of Second-life EV Batteries with Solar PV Systems for Commercial Buildings	$2,837,672	$835,375	$407,945	CBE
EPC-19-054	Electric Power Research Institute, Inc.	Demonstrating Code-compliant Energy Storage Systems and Their Capabilities for Grid Harmonization	$999,841	$200,017	$344,172	CBE
EPC-19-055	ReJoule Incorporated	Enabling EV Battery Circular Economy	$2,970,774	$331,891	$162,057	Minority Owned
EPC-19-056	Energy and Environmental Economics, Inc. (E3)	Assessing Long-duration Energy Storage Deployment Scenarios to Meet California's Energy Goals	$1,500,000	$315,322	$540,062	Small Business, CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-19-058	Antelope Valley Water Storage, LLC	Long Duration 50 kW Energy Storage with Aquifer Pumped Hydro	$2,000,000	$500,000	$12,402	CBE
EPC-19-059	The Regents of the University of California, Riverside	Residential Solar+Storage Control Unit for Providing Grid Services and Demand Side Management	$939,232	$362,250	$90,520	CBE
EPC-19-060	The Regents of the University of California, Merced	Modeling of Long-Duration Storage for Decarbonization of California Energy System	$1,254,955	$505,826	$221,519	CBE
EPC-20-001	Lawrence Berkeley National Laboratory	Energy-Water Desalination Hub	$3,000,000	$0	$1,493,597	CBE
EPC-20-002	Charge Bliss, Inc.	Essential Power Support for the Kaiser Permanente Ontario Medical Center using Long Duration Batteries within a Renewable Energy Microgrid	$8,351,000	$7,549,000	$142,698	Micro Business, CBE
EPC-20-003	The Pechanga Band of Luiseño Indians	Pechanga Tribal Microgrid Long Duration Storage Project	$1,998,101	$849,140	$0	CBE
EPC-20-004	Redwood Energy	Central Heat Pump Water Heater Load Flexibility	$2,043,755	$48,200	$119,460	CBE
EPC-20-005	Technology & Investment Solutions, LLC	Hy2green - Electrolytic Hydrogen Energy Storage Using Novel Metal Hydrides	$1,766,775	$167,450	$0	CBE
EPC-20-006	The Regents of the University of California, San Diego	Development of Climate Projections for California and Identification of Priority Projections	$1,500,000	$102,184	$289,305	None
EPC-20-007	Eagle Rock Analytics	A Co-Produced Climate Data and Analytics Platform to Support California's Electricity Resilience Investments	$3,500,000	$339,500	$728,552	CBE
EPC-20-008	Antelope Valley Water Storage, LLC	Long Duration 200 kW Energy Storage with Aquifer Pumped Hydro	$6,406,950	$3,200,000	$70,470	CBE
EPC-20-009	The Regents of the University of California, San Diego	Smart Plug Load Controls Integrated with Building Energy Management Systems	$1,028,125	$370,125	$73,078	CBE
EPC-20-010	California Energy Alliance	Energy and Appliance Standards for Plug Loads: Assessing Current Needs and Future Opportunities	$996,974	$19,580	$198,525	None
EPC-20-011	Packetized Energy	Increasing Access to Smart and Affordable Energy for Customers and Resource Adequacy for the California Grid	$2,000,000	$1,500,000	$0	None
EPC-20-012	All Power Labs, Inc.	Development and Demonstration of Distributed Biomass CHP Microgrid Systems	$3,287,890	$1,988,074	$0	Small Business, Micro Business, CBE

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EPC-20-013	Noon Energy Inc.	Pilot Demo of Ultra Low Cost, Long-Duration Energy Storage Coupled to Solar Power	$2,166,000	$1,950,000	$438,095	CBE
EPC-20-014	Next Energy Technologies	Rapid Innovation Development of Energy Generating Windows for Zero- and Negative-Carbon Emission Buildings	$3,000,000	$2,500,000	$923,875	CBE
EPC-20-015	Sepion Technologies, Inc.	Hybrid Lithium-Metal Batteries for Low-Cost and Long-Range Electric Vehicles	$1,400,000	$1,299,897	$260,994	CBE
EPC-20-016	South 8 Technologies	Advanced Li-ion Chemistry for Safer and Greener Electric Vehicle and Energy Storage Systems	$1,010,227	$506,381	$0	CBE
EPC-20-017	Treau, Inc.	Increasing the Thermal Range and Efficiency of Affordable User-Installable Room Heat Pumps	$2,761,606	$1,669,742		CBE
EPC-20-018	Skyven Technologies, Inc.	Transforming the techno-economics of decarbonization in California's bespoke industrial sector with a scalable front-end engineering AI	$1,110,500	$1,001,100	$157,000	None
EPC-20-019	Polaris Energy Services Inc.	Accelerated Deployment of Irrigation Pumping Demand Flexibility	$2,884,912	$576,982	$466,190	CBE
EPC-20-020	Feasible, Inc.	Machine Learning Enhanced Acoustic Inspection to Improve Battery Manufacturing	$1,000,000	$901,500	$0	None
EPC-20-021	The Regents of the University of California, San Diego	LEED: A Lightwave Energy-Efficient Datacenter Phase 2	$425,000	$0	$137,496	CBE
EPC-20-022	FreeWire Technologies, Inc.	FreeWire Boost 2.0 Development and Demonstration Project	$3,468,490	$4,895,575	$0	Small Business, CBE
EPC-20-023	Rocky Mountain Institute	Scaling Industrialized Zero Emissions Retrofits in California and Beyond	$687,500	$0	$0	None
EPC-20-025	Lawrence Berkeley National Laboratory	Achieving Integrated and Equitable Decarbonized Loads with CalFlexHub	$16,000,000	$3,362,000	$4,213,091	CBE
EPC-20-026	Caban Systems, Inc.	Advanced Energy Storage for California's Critical Infrastructure Project	$1,095,264	$987,764	$0	None
EPC-20-027	Cuberg, Inc.	High-Performance Battery Systems to Power the Rise of Electric Mobility	$3,499,525	$3,322,300	$1,124,175	None
EPC-20-028	Nextech Batteries, Inc.	Bringing Lithium Sulfur Technology to Market	$2,996,782	$1,500,000	$279,928	None
EPC-20-029	Antora Energy, Inc.	Manufacturing Scale-up of Record-Breaking Solid-State Heat Engine for Deep Decarbonization in California	$2,999,695	$2,745,457	$0	CBE

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Agreement #	Recipient	Project Title	Encumbered Project Funds	Match Funding	Project Administrative and Overhead Costs	CA-Based Entity (CBE), Diversity, and Equity Information
EPC-20-030	Electric Power Research Institute, Inc.	Smart, Hybrid, Grid-Connected Exterior Lighting Systems.	$3,308,595	$983,000	$790,343	CBE
EPC-20-031	The Regents of the University of California, Davis	Renewable Energy & Advanced Lighting Systems for Exterior Applications	$4,166,306	$1,250,000	$506,771	CBE
EPC-20-032	Ubiquitous Energy, Inc.	Productizing Transparent Solar Windows: Enabling Production of Transparent Renewable Energy Generating Windows	$2,997,343	$5,181,615	$50,976	None
EPC-20-033	Halo Industries, Inc.	Production Scale-Up of Conductive Silicon Carbide Wafer Technology for Electric Vehicle and Charging Infrastructure Power Electronics Cost Reduction	$3,000,000	$2,700,000		None
EPC-20-034	OhmConnect, Inc.	Building Resiliency from Within	$3,000,000	$600,000	$0	CBE
EPC-20-035	Opus 12 Incorporated	Low rate production pilot line for CO2 electroreduction Membrane Electrode Assembly fabrication	$3,000,000	$1,811,065	$0	None
EPC-20-036	AgMonitor Inc.	Load Shifting During Critical Summer Hours via Programmable Irrigation	$349,972	$87,368	$0	Small Business, CBE
EPC-20-037	Stasis Energy Group LLC	Stasis Energy Group Thermal Energy Storage System (TESS) for Packaged HVAC Systems	$1,634,740	$1,169,571	$0	CBE
EPC-20-038	MOEV Inc.	Artificial Intelligence Based Heavy-Duty Fleet Charging to enable Distributed Energy Resource Integration	$3,319,387	$3,000,000	$555,129	CBE
EPC-20-039	EPC Power Corp.	Solid-State DC-DC Power Electronics for Grid-Scale Lithium EV Battery Pack Integration	$3,499,532	$1,750,246		CBE
EPC-20-040	Lawrence Berkeley National Laboratory	Innovative School Bus Charging for Resilient Communities	$4,000,000	$1,285,822		CBE
EPC-20-042	TA Operating LLC	TAking Charge: TravelCenters of America Ultra-Fast En-Route Charging	$4,000,000	$1,200,000	$0	None
EPC-20-043	The Regents of the University of California, Davis Campus	Optimized Controls for Cooling California Dairy Cows	$1,529,705	$306,451	$0	CBE
EPC-20-044	Caliskaner Water Technologies, Inc.	Demonstration of Advanced Primary and Secondary Treatment Technologies for Energy and Performance Benefits to Wastewater Treatment	$4,000,000	$2,532,156	$1,289,918	CBE
EPC-20-045	Enpowered Solutions, LLC	Artificial Intelligence for Energy Efficiency Optimization in California Dairy Operations	$1,638,868	$350,274	$169,163	None

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EPC-20-046	Sysco Riverside, Inc.	Distributed Resources for Diversified Renewable Energy Project	$4,000,000	$2,758,537	$0	None
EPC-20-047	Zira Group Inc (DBA Lightapp)	Leveraging Artificial Intelligence and Machine Learning to Increase Energy Efficiency in California Dairies	$4,227,648	$1,665,912	$0	CBE
EPC-20-048	Gate 5 Energy Partners, Inc	Demonstration of Advanced Primary and Secondary Wastewater Treatment Technology	$1,603,779	$332,920	$0	CBE
EPC-21-001	GRID Alternatives	Enabling California's Resilient Tribal Communities with Mobile Renewable Power	$1,000,000	$200,157	$51,319	CBE, Woman Owned
EPC-21-002	One-Cycle Control, Inc.	Demonstration of 15 kW Silicon-Carbide enabled OCC-MORBUGs	$1,971,467	$394,901	$0	CBE
EPC-21-003	Electric Power Research Institute, Inc.	Mobile Hydrogen Fuel Cell Generation System	$1,999,953	$932,121	$0	CBE
EPC-21-004	Uprise Energy, LLC	Demonstrating Mobile Renewable Back-up generation with Uprise Energy's Mobile Power Station	$1,589,012	$663,598	$348,637	CBE
EPC-21-006	WattEV, Inc.	21st Century Truck Stop: 1st MD/HD eTruckStop in California	$4,000,000	$3,518,964		None
EPC-21-007	eIQ Mobility	Building a Scalable and Repeatable School Bus Electrification Business (BuSy Bees)	$2,192,175	$197,586	$0	None
EPC-21-008	The Regents of the University of California, San Diego	Development of Efficient and Scalable Direct Recycling Technology for Lithium-Ion Batteries	$1,684,308	$1,364,060	$0	CBE
EPC-21-009	OnTo Technology LLC	Cathode-Healing for Recycling and Manufacturing of Lithium-ion Batteries	$1,001,807	$0	$0	None
EPC-21-010	Electric Power Research Institute, Inc.	Electric Truck Research and Utilization Center (eTRUC) for RHETTA	$12,999,155	$6,327,619	$2,279,372	CBE
EPC-21-011	Center for Transportation and the Environment	Hydrogen Back-Up Generation Vehicle (H2BUG)	$3,000,000	$2,022,702	$471,522	CBE

Total Agreements	Total Encumbered Project Funds	Total Match Funding	Total Project Administrative and Overhead Costs
437	$1,044,383,388	$536,529,244	$169,985,773