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Project/Performance Site Location(s)

Project/Performance Site Primary Location I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name: LOS ANGELES DEPARTMENT OF WATER AND POWER

UEI: [REDACTED]

* Street1: 111 NORTH HOPE STREET

Street2:

* City: LOS ANGELES County:

* State: CA: California

Province:

* Country: USA: UNITED STATES

* ZIP / Postal Code: 900012-2607 * Project/ Performance Site Congressional District: CA-034

Project/Performance Site Location 1 I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name: LADWP [REDACTED]

UEI:

* Street1: 111 North Hope Street

Street2:

* City: Los Angeles County:

* State: CA: California

Province:

* Country: USA: UNITED STATES

* ZIP / Postal Code: 90012-2607 * Project/ Performance Site Congressional District: CA-034

Additional Location(s)

Application for Federal Assistance SF-424

* 1. Type of Submission: <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	* 2. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	* If Revision, select appropriate letter(s): [REDACTED] * Other (Specify): [REDACTED]
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* 3. Date Received: 03/16/2023	4. Applicant Identifier: [REDACTED]
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5a. Federal Entity Identifier: [REDACTED]	5b. Federal Award Identifier: [REDACTED]
--	---

State Use Only:

6. Date Received by State: [REDACTED]	7. State Application Identifier: [REDACTED]
---------------------------------------	---

8. APPLICANT INFORMATION:

* a. Legal Name: Los Angeles Department of Water and Power (LADWP)

* b. Employer/Taxpayer Identification Number (EIN/TIN): [REDACTED]	* c. UEI: [REDACTED]
---	-------------------------

d. Address:

* Street1: 111 North Hope Street
Street2: [REDACTED]
* City: Los Angeles
County/Parish: [REDACTED]
* State: CA: California
Province: [REDACTED]
* Country: USA: UNITED STATES
* Zip / Postal Code: 90012-2607

e. Organizational Unit:

Department Name: [REDACTED]	Division Name: [REDACTED]
--------------------------------	------------------------------

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: [REDACTED] * First Name: Aaron
Middle Name: [REDACTED]
* Last Name: Gross
Suffix: [REDACTED]

Title: Senior Advisor

Organizational Affiliation:
[REDACTED]

* Telephone Number: [REDACTED] Fax Number: [REDACTED]

* Email: aaron.gross@ladwp.com

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

C: City or Township Government

Type of Applicant 2: Select Applicant Type:

X: Other (specify)

Type of Applicant 3: Select Applicant Type:

*** Other (specify):**

Local Municipal Utility

*** 10. Name of Federal Agency:**

National Energy Technology Laboratory

11. Catalog of Federal Domestic Assistance Number:

81.254

CFDA Title:

Grid Infrastructure Deployment and Resilience

*** 12. Funding Opportunity Number:**

[REDACTED]

*** Title:**

BIL Grid Resilience and Innovation Partnerships (GRIP)

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment

Delete Attachment

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*** 15. Descriptive Title of Applicant's Project:**

Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant

* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="48,000,000.00"/>
* b. Applicant	<input type="text" value="48,000,000.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="96,000,000.00"/>

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

a. This application was made available to the State under the Executive Order 12372 Process for review on

b. Program is subject to E.O. 12372 but has not been selected by the State for review.

c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

Yes No

If "Yes", provide explanation and attach

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 18, Section 1001)**

** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative: * Date Signed:

BUDGET INFORMATION - Non-Construction Programs

OMB Number: [REDACTED]
Expiration Date: 02/28/2025

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Budget Period 1/2		\$ [REDACTED]	\$ [REDACTED]	\$ 5,522,435.00	\$ 5,522,435.00	\$ 11,044,870.00
2. Budget Period 3		[REDACTED]	[REDACTED]	11,555,048.00	11,555,048.00	23,110,096.00
3. Budget Period 4		[REDACTED]	[REDACTED]	16,448,804.00	16,448,804.00	32,897,608.00
4. Budget Period 5		[REDACTED]	[REDACTED]	14,647,897.00	14,647,897.00	29,295,794.00
5. Totals		\$ [REDACTED]	\$ [REDACTED]	\$ 48,174,184.00	\$ 48,174,184.00	\$ 96,348,368.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1) Budget Period 1/2	(2) Budget Period 3	(3) Budget Period 4	(4) Budget Period 5	
a. Personnel	\$ 3,839,554.00	\$ 4,195,489.00	\$ 5,248,041.00	\$ 4,891,266.00	\$ 18,174,350.00
b. Fringe Benefits					
c. Travel					
d. Equipment	3,845,315.00	7,781,275.00	10,756,235.00	9,671,195.00	32,054,020.00
e. Supplies					
f. Contractual	1,200,000.00	3,933,333.00	3,933,333.00	3,933,333.00	12,999,999.00
g. Construction	2,160,000.00	7,200,000.00	12,960,000.00	10,800,000.00	33,120,000.00
h. Other					
i. Total Direct Charges (sum of 6a-6h)	11,044,869.00	23,110,097.00	32,897,609.00	29,295,794.00	\$ 96,348,369.00
j. Indirect Charges					\$
k. TOTALS (sum of 6i and 6j)	\$ 11,044,869.00	\$ 23,110,097.00	\$ 32,897,609.00	\$ 29,295,794.00	\$ 96,348,369.00
7. Program Income	\$	\$	\$	\$	\$

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Prescribed by OMB (Circular A -102) Page 1A

SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program		(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8.	Budget Period 1/2	\$ 5,522,435.00	\$	\$	\$ 5,522,435.00
9.	Budget Period 3	11,555,048.00			11,555,048.00
10.	Budget Period 4	16,448,804.00			16,448,804.00
11.	Budget Period 5	14,647,897.00			14,647,897.00
12. TOTAL (sum of lines 8-11)		\$ 48,174,184.00	\$	\$	\$ 48,174,184.00

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$	\$	\$	\$	\$
14. Non-Federal	\$				
15. TOTAL (sum of lines 13 and 14)	\$	\$	\$	\$	\$

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program		FUTURE FUNDING PERIODS (YEARS)			
		(b)First	(c) Second	(d) Third	(e) Fourth
16.	Budget Period 1/2	\$	\$	\$	\$
17.	Budget Period 3				
18.	Budget Period 4				
19.	Budget Period 5				
20. TOTAL (sum of lines 16 - 19)		\$	\$	\$	\$

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges:		22. Indirect Charges:	
23. Remarks:			

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: [REDACTED]
Expiration Date: 02/28/2025

1. * Type of Federal Action: <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. * Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. * Report Type: <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
--	--	--

4. Name and Address of Reporting Entity:

Prime SubAwardee

* Name: Los Angeles Department of Water and Power

* Street 1: 111 North Hope Street Street 2: [REDACTED]

* City: Los Angeles State: CA: California Zip: 90012-2607

Congressional District, if known: CA-034

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency: Department of Energy	7. * Federal Program Name/Description: Grid Infrastructure Deployment and Resilience
	CFDA Number, if applicable: 81.254

8. Federal Action Number, if known: [REDACTED]	9. Award Amount, if known: \$ [REDACTED]
--	--

10. a. Name and Address of Lobbying Registrant:

Prefix [REDACTED] * First Name N/A Middle Name [REDACTED]

* Last Name N/A Suffix [REDACTED]

* Street 1 N/A Street 2 [REDACTED]

* City N/A State [REDACTED] Zip [REDACTED]

b. Individual Performing Services (including address if different from No. 10a)

Prefix [REDACTED] * First Name N/A Middle Name [REDACTED]

* Last Name N/A Suffix [REDACTED]

* Street 1 N/A Street 2 [REDACTED]

* City N/A State [REDACTED] Zip [REDACTED]

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

* Signature: Aaron Gross

* Name: Prefix [REDACTED] * First Name Aaron Middle Name [REDACTED]
* Last Name Gross Suffix [REDACTED]

Title: Senior Advisor Telephone No.: [REDACTED] Date: 03/16/2023

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Project Title:	Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources	
Applicant:	Los Angeles Department of Water and Power (LADWP)	
Eligibility:	LADWP is both a non-profit entity and a local government entity.	
Announcement:	DE-FOA-0002740	
Topic Area:	Topic Area 2: Smart Grid Grants (BIL section 40107)	
Project Cost:	\$96,000,000	
Funding Request:	\$48,000,000	
Technical Points of Contact:	Jason Rondou, Director of Power System Planning Jason.Rondou@ladwp.com 213-367-3601	Arash Saidi, Power Engineering Manager, Distributed Energy Resource Development Programs & Projects Arash.Saidi@ladwp.com 213-367-4886
Business Points of Contact:	Aram Benyamin Chief Operating Officer Aram.Benyamin@ladwp.com 213-367-0387	Brian J. Wilbur, Senior Assistant General Manager, Power System Construction, Maintenance and Operations Brian.Wilbur@ladwp.com 213-367-2311
Team Member Organizations:	<u>External Partners:</u> Los Angeles Business Council (LABC), Los Angeles Mayor’s Office, Los Angeles Unified School District, Los Angeles County, Los Angeles Community College District, <u>Internal Partners:</u> Power System, Customer Care and Billing, Supply Chain Services, IT, Financial Services	
Key Personnel & Organizations:	Aram Benyamin, Chief Operating Officer Brian Wilbur, Senior Assistant General Manager, Power System Construction, Maintenance and Operations	
Project Location(s):	City of Los Angeles	
Confidentiality Statements:	Regarding any confidentiality concerns, LADWP considers customer service addresses as confidential and privileged pursuant to California State Laws which specifically protect utility customer information. Please see California Public Utilities Code Section 8381 and California Government Code Section 7927.410 for more information. In addition, since this information is being provided as part of a federal funding program, LADWP believes that customer service addresses are also protected under the Official Information privilege. Please see California Evidence Code Section 1040 for more information.	

BACKGROUND

The Los Angeles Department of Water and Power (LADWP) proposes to use the Department of Energy (DOE) Grid Resilience and Innovation Partnerships (GRIP) Program funding to launch the Community Grid Innovation Program (CGIP), which will provide LADWP system benefits by allowing for greater control at the grid operations level and enhance visibility of the distribution system resulting in greater reliability and resiliency of the system.

LADWP is the nation's largest municipal utility, with more than 8,000 MW of electric capacity and serving an average of 435 million gallons of water per day to the more than 4 million residents of the City of Los Angeles (L.A.), its businesses, and visitors. LADWP was established in 1902 to deliver water to L.A. and electric distribution began in 1916. With a workforce of more than 11,000 employees, LADWP is guided by the five-member Board of Water and Power Commissioners, appointed by the Mayor and confirmed by the City Council.

LADWP is committed to aggressive and ambitious local and state decarbonization goals. The State of California (CA) signed Senate Bill (SB) 100 into law in 2018 which mandates that 100 percent of retail electrical energy sales in the state be produced from zero carbon resources. In 2021, following the results of the National Renewable Energy Laboratory's "LA 100" study, the L.A. City Council directed that LADWP complete the transition to 100 percent clean, zero-carbon energy by 2035. LADWP is working to transform our system while also protecting our most vulnerable communities from any impacts through increased rates.

In order to meet these goals, and provide reliable energy to our rate payers, we are launching the Community Grid Innovation Program (CGIP). CGIP consists of two primary components: 1) a distributed energy resource management system (DERMS), and 2) the expansion of LADWP programs to develop distributed energy resources (DERs) that are compatible and integrated with the DERMS. These two systems working in conjunction will give LADWP grid operators enhanced ability to dynamically respond to grid fluctuations by dispatching DERs on-demand, leading to much needed flexibility, increased reliability and improved resilience.

LADWP is prohibited by state law from providing extra ratepayer funded incentives to DACs that are not also available to all LADWP customers, therefore the DOE funds will enable LADWP to target spending in Disadvantaged Communities (DACs). DOE funding will only be used to fund incentives to DACs and overhead costs that will be shared amongst all program participants.

Distributed Energy Resource Management System Baseline

LADWP currently uses an Advanced Distribution Managing System (ADMS) for visibility and control of its distribution assets. To improve visibility and ability to dispatch DERs, LADWP is in the process of acquiring the DERMS module for the ADMS, which is expected to be placed in-service in the third quarter of 2023.

DOE funding for DERMS will provide additionality by dramatically increasing the accessibility of the programs to vulnerable populations and will accelerating the increased MW capacity of these DERs to the DERMS platform. This will allow LADWP to facilitate the integration and aggregation of EVs and other grid edge devices into the DERMS to allow for better control,

vision, and dispatch ability. Without the DOE funding, the benefit of the DERMS would be limited to those customers who historically had access to and have adopted DERs in their communities. LADWP is working to enable a more equitable uptake of DERMS for all communities including those experiencing persistent social disparities.

Program Baselines

Today, LADWP's programs incentivize customers to engage with their utility as a partner to increase and manage DERs. As of January 2023, LADWP has over 600 MW of local solar. If funding is awarded, LADWP plans to expand programs under CGIP with a strong focus on ensuring access to renewable technology in DACs. The following paragraphs describe the current baseline of the programs included within CGIP and this grant application.

- **Feed in Tariff (FiT):** Customers partner with developers to build solar photovoltaic (PV) facilities, and LADWP enters into a power purchase agreement for the electricity from the systems, at a fixed price over the contracts' terms. The program was launched in 2013 and has deployed 101 MW of capacity. The FiT+ program is a derivative of FiT which targets lower voltage distribution circuits and adds energy storage as a component.
- **Solar Rooftop Program (SRP):** Launched in 2017, SRP targets customers who are unable to purchase solar PV systems themselves. LADWP leases residential customers' rooftops and installs a grid-tied solar PV system on their roofs. Thirty-two (32) systems have been installed to date, of which, nineteen (19) systems are located in DACs. Participants are able to receive \$20-\$50 per month depending on system size installed (1kW to 10kW) and up to \$20 more per month for adding an energy storage system.
- **Demand Response (DR):** LADWP currently offers the Commercial and Industrial (C&I) program for commercial and industrial customers and the Power Savers Program (PSP) for residential and small commercial customers. The C&I program is semi-automated but not integrated with DERMS. As an example of the strength and value of the program, C&I participants were able to respond to the California extreme heat event on September 6, 2022, by reducing LADWP's electrical load by 48 MW. PSP is an automated program with 43,806 thermostats participating in the program, in which LADWP sends signals to adjust the thermostats settings to reduce system load.
- **Commercial Energy Storage to Grid (CES2G) Pilot:** The CES2G Pilot Program is planned for the second quarter of 2023 to manage and dispatch bi-directional vehicle charging infrastructure. The initial scope of the pilot allows for up to 20 MW of electric vehicle (EV) fleet and energy storage system owners. The current structure of the program provides a reimbursement of 75 percent of the interconnection costs, up to \$400,000.
- **Managed Charging:** As a complement to the CES2G Pilot, LADWP is developing a Request for Proposal to solicit a 36-month pilot residential managed charging program for approximately 3,000 customers (expected launch in third quarter of 2023). The residential Managed Charging Program (MCP) will be designed to offer a managed charging solution to residential customers for optimal load shifting with minimal customer interaction required.

Project Goals

The goal of deploying these programs is to integrate LADWP systems with the DERMS system, enabling grid operators to shape the electrical load and dispatch assets and expand or create

new, state of the art, customer programs in DACs. This will add 150 MW of distributed and dispatchable capacity to increase grid flexibility and grid reliability resulting in a more resilient system during extreme weather events and other events which stress the electrical grid. It is possible that these programs and the DERMS could form the foundation for a self-sectionalizing grid to further reduce outage durations to customers and increase resilience.

LADWP is prohibited by state law from providing extra ratepayer-funded incentives to DACs. DOE funds would be used to provide additional financial incentives for customer program participants in DACs. LADWP is seeking to make the following improvements to its customer incentive programs with funding from the DOE to achieve these goals. All the assets deployed under these expanded programs will be integrated into the DERMS.

FiT/FiT+: Increase FiT program capacity by 75 MW over a five-year period and increase FiT+ capacity by 25 MW.

- Integrating with the DERMS system will allow Energy Control Center (ECC) to control the output of the generators and adjust power factor based on grid needs. The FiT+ program is a recent addition and combines energy storage systems with solar to provide energy to the system during critical peak periods.

SRP: Add energy storage systems and EV chargers to the program offering. The energy storage systems will provide grid services to LADWP, and LADWP expects to install 710 kW of solar PV and 1080 kWh of energy storage across approximately 161 customers.

- Integrating with the DERMS system will allow ECC to control the output of the generators based on grid needs.

Demand Response: Partner with 100 Los Angeles Unified School District (LAUSD) schools, 6 Los Angeles Community College District (LACCD) campuses, and California State University of Los Angeles (CSULA) to assist with building energy management system (BEMS) installations and integrations with LADWP's DERMS. Integrate demand response management system (DRMS) into the LADWP DERMS. Distribute smart thermostats to DAC customers for residential demand response program. Expand the capacity of demand response programs by up to 13 MW.

- The Demand Response program will go significantly further by integrating with Commercial and Industrial (C&I) customers' Building Energy Management Systems (BEMS) to a common DERMS platform. The LADWP will offer considerable incentives to customers to adopt a BEMS. LADWP is planning to publish a Request for Proposal for integrating our current and future DR customers into one DERMS platform for dispatching DR resources during extreme weather conditions or reliability challenges.

CES2G: Expand the capacity of the program by up to 25 MW and create a new tier to directly promote additionality of projects located in DACs.

- The CES2G Pilot Program coupled with the DERMS will enable Vehicle-to-Grid (V2G) operations. With this pilot, LADWP will have full control over the commercial stationary BESSs, commercial EV chargers, and EV charging infrastructure to ensure charge management is performed in a manner that is most beneficial for the electric grid. Commercial customers can participate in the pilot by hosting stationary BESSs or commercial EVs.

Managed Charging: Expand the program to include fleet services for commercial EVs.

- LADWP will pilot a Residential Managed Charging Program that focuses on ensuring customer EVs are properly powered when needed while reducing unnecessary burden on LADWP's grid. LADWP Residential Managed Charging Program will specify EV and electric vehicle supply equipment (EVSE) capable of connecting to the DERMS. LADWP will explore the possibility of launching a customer incentive program that will fund the retrofitting of EVSEs. LADWP anticipates that if all electric vehicles participated in a managed charging program, about 50 MW of dispatchable capacity would be available to grid operators. LADWP will be able to assess the effectiveness of monetary incentives on EV charging behavior and identify opportunities to alleviate overloaded circuits.

Impact of DOE Funding and Environmental Justice

LADWP is restricted by state law from using revenue funds from providing benefits to specific customer segments, including DACs. LADWP cannot fund projects that provide extra benefits to DACs without DOE assistance. The goal of this funding application is to allow LADWP to provide targeted benefits for customers in DACs using LADWP sponsored programs.

Without dedicated resources and a strategy and plan for creating social impact, sustained engagement is nearly impossible. DOE's funding will allow LADWP dedicated resources to manage and monitor LADWP's community engagement initiatives.

LADWP is committed to ensuring that each program will include a component to increase participation by DACs and work to ensure DACs are protected from increased electric rates. LADWP proposes to use DOE funds to provide funding directly in DACs

- **FiT/FiT+:** \$25 million in DOE funds will be used to reimburse interconnection costs of up to \$800,000 for projects in DACs.
- **SRP:** \$4.82 million will go towards expanding the capacity of SRP from 25-50kW per year to 110-250kW per year to reach 1MW and beyond. Backup power from batteries will only be available in DACs. LADWP will partner with community organizations to deploy battery backup systems in areas most susceptible to power outages. All residential customers will receive additional incentive payments for adding an energy storage system.
- **Demand Response:** \$8.35 million in DOE funds will enable the project goals. LADWP will provide up to 7,500 smart thermostats to customers in DACs if they participate in the residential demand response program.
- **CES2G:** \$5.7 million in DOE funds will be used to reimburse 85 percent of interconnection costs, not to exceed \$800,000, if the project is located in a DAC.
- **Managed Charging:** \$5.0 million in DOE funds will allow LADWP to expand the residential Managed Charging Program to integrate 6,000 commercial customers with electric vehicles. Half of the 6,000 new enrollees will be selected from DACs and will receive a higher financial incentive than customers who live outside of DACs.

COMMUNITY BENEFITS PLAN

Community and Labor Engagement

LADWP has over 10,000 employees, over 90 percent of which are members of the International Brotherhood of Electrical Workers (IBEW) labor union. DWP engages with IBEW brass and rank

and file on a regular basis regarding job training, work site safety, grievances, labor negotiations, and workforce development/deployment.

For more: Please see the dedicated [Community Benefits Plan](#)

Investing in the American Workforce

LADWP will work closely with labor and community organizers with a proven track record in job creation to define what constitutes a “high-quality job.”

For more: Please see the dedicated [Community Benefits Plan](#)

Diversity, Equity, Inclusion, and Accessibility (DEIA)

In 2021, LADWP established an Office of Diversity, Equity and Inclusion and hired its first Chief Diversity, Equity and Inclusion Officer reporting directly to the General Manager and Chief Engineer. LADWP is a strong proponent of an impactful outreach program aimed at assisting workers facing system barriers to accessing quality jobs, including the advancement of DEIA through community participation and partnership with local businesses and training organizations.

For more: Please see the dedicated [Community Benefits Plan](#)

Justice40 Initiative

The CA state level law passed under Proposition 26 in 2010¹² limits LADWPs ability to target DACs or any other community type when prioritizing projects. If LADWP is awarded this funding opportunity, most of the construction and equipment budget will provide additional benefits to customers and projects located in DACs. DOE funding will only be used to fund incentives to DACs and overhead costs that will be shared amongst all program participants. Overhead costs include program administration, engineering, and software costs, among others. Customers outside of DACs will be funded by LADWP.

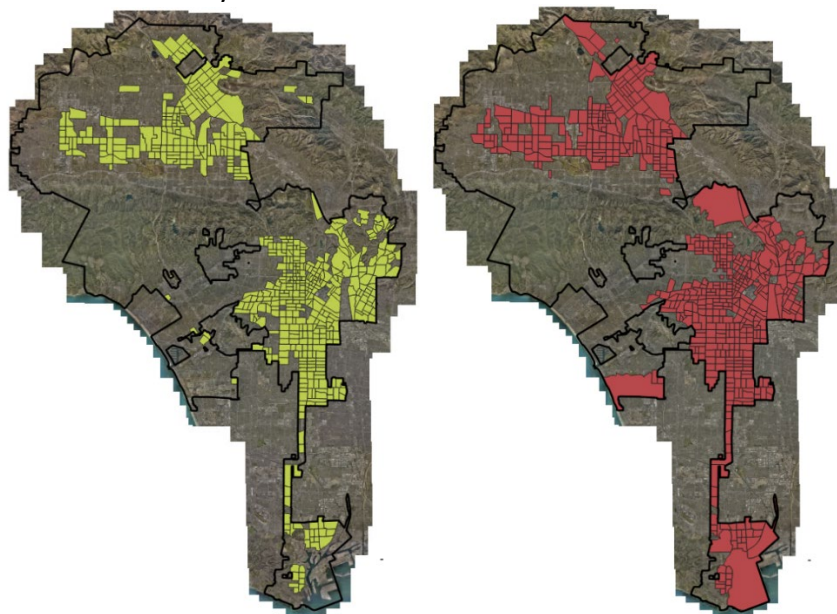


Figure A shows all the DACs, in yellow, within the Los Angeles City boundary, in black, according to the Climate and Environmental Justice Screening Tool (CEJST). The areas shown in red on the right are the DACs according to CA’s SB 535, which is based primarily on CalEnviroScreen. This

figure demonstrates that L.A. has a significant DAC population regardless of which tool is used to evaluate DAC communities, and that the two tools largely overlap.

For more: Please see the dedicated [Community Benefits Plan](#)

Long Term Natural Resource Constraints

There are no long-term natural resource constraints.

TECHNICAL DESCRIPTION, INNOVATION, AND IMPACT

Relevance and Outcomes:

California has been facing extreme weather events, such as wildfires, due to climate change. LADWP has been consistently using the DR resources to relieve the system constraints during these events, albeit with a manual process. Under CGIP, LADWP plans to deploy and enroll 7,500 smart thermostats to allow for DR participation which will add another 5 MW of DR capacity for LADWP grid operators to call on. The integration of DERs into DERMS enables their precise and scalable dispatch, resulting in a resilient and flexible grid.

CGIP consists of two primary components: 1) a Distributed Energy Resource Management System (DERMS), and; 2) an expansion of programs to incentivize the development of DERs compatible with DERMS. DERMS will provide grid operators with visibility of DERs on the electrical system and the ability to dispatch these units to maintain grid reliability. Grid operators may control smart inverters' voltage and active power output for frequency support. LADWP has hundreds of megawatts of DERs already deployed, but the vast majority are not compatible with DERMS. DERs included are solar PV, EVs, BESSs, and EV chargers.

CGIP increases grid reliability and resiliency by utilizing market forces to deploy new grid interactive DERs and improving distribution system visibility thereby transforming the LADWP system. CGIP proposes to add over 150MW of DER capacity to be integrated with the LADWP DERMS platform, giving LADWP grid operators a significant amount of resource capacity to dispatch, resulting in a significant impact on operations and management of the grid. The net effect of this integration is to reduce outages resulting from extreme events, reduce restoration times, and reduce risks to health and safety for the affected communities.

With a comprehensive DERMS, LADWP will have the ability to increase its grid stability, capacity reserves and maintain the useful life of system equipment. The high electric demand of EV chargers, at times, causes strain on the distribution and transmission systems causing outages and lowering reliability. As more vehicles are electrified, the strain will increase and could stress a common distribution transformer for a long period of time, thereby having a negative effect on its useful life. When LADWP operators are given more control over aggregated DERs as presented by the Residential Managed Charging Program, they will be able to readily address issues over grid stability.

The County of Los Angeles (LAC) and the Los Angeles Unified School District (LAUSD) have both expressed an interest in using V2G technologies and participating in the upcoming CES2G program, specifically. LAUSD is currently electrifying their bus fleet of 1,296 buses by 2040 to meet their clean energy goals which may translate into 65 MW of additional load on the LADWP

electric grid. LADWP is working with LAUSD to install bi-directional EV chargers to help support LADWP during critical peak periods. LAUSD is installing 6 V2G chargers, as well as plans for 54 additional V2G chargers, with an estimated completion date of December 2023.

It is critical that LADWP partner with electric vehicle owners, especially those of heavy-duty fleets. Effectively managing distributed energy resources can defer the need for upgrades to energy distribution equipment, enabling a higher capacity to host interconnections without adverse effects. Unless this program is installed, LADWP will only be able to provide electrical service to fleet owners by massively expanding the distribution network. These costs would be passed on to customers, resulting in stifling EV market growth despite state and federal initiatives to accelerate electrification of heavy-duty and passenger vehicles.

Feasibility:

LADWP has demonstrated the technical feasibility of the proposed technologies and capability of achieving performance targets in prior experience deploying the existing programs that CGIP plans to expand with DOE funds. The LADWP has qualified, highly-skilled, in-house employees trained for the safe deployment of DERs and interconnecting service-points to accommodate them. The DERs will be integrated with LADWP's 4.8-kV and 34.5kV electric distribution systems.

Specifically, LADWP has demonstrated the technical feasibility and capabilities in each of the proposed technologies:

- DERMS: DERMS is an add-on module for the LADWP-deployed ADMS. The LADWP ECC has already installed and deployed Open System International's (OSI) ADMS software and it is used 24/7 by LADWP grid operators.
- FiT/FiT+: LADWP has the most successful Feed-In Tariff program in the country since its inception in 2013. There are currently 142 projects in service with a respective capacity of 101.2 MW. Partners and contractors that facilitate coordination and installation of these projects have the skillset and trained crews to install these systems. They will ensure that these future projects will be compatible with a full-fledged DERMS. With an incentive available to DAC communities, these projects will become more economically viable allowing LADWP to meet its aggressive clean energy goals.
- CES2G Pilot: LADWP is planning to roll out this pilot program to commence bi-directional charging from customer-owned commercial scale energy storage systems. The IEEE 2030.5 communication protocol will be utilized to communicate with vehicle-to-grid (V2G) enabled electric vehicles for use during critical peak periods. Such a system has been studied by the utility industry and LADWP has established and solved the design protocols and operational challenges required to launch this pilot program.
- SRP: Since 2017, LADWP has installed 32 PV systems. We have the workforce necessary to deploy solar PV, energy storage systems, smart EV chargers, and smart inverter installations. With more resources and funding, we can accelerate the installation of the new equipment and increase targets from 12 to 50 per year.
- Demand Response: DERMS located at LADWP's ECC will integrate with the DRMS using the OpenADR and/or IEEE 2030.5 protocol(s) via an internet connection. DERMS will be connected to the service provider platforms and participant's BEMS. Service providers will

have connections to various IOT devices. ECC will have visibility of all available devices and information about potential MW savings for dispatch and control. In addition, customers can save and earn incentives by participating in automated DR. When ECC needs DR recourses during extreme weather conditions, ECC will schedule a DR event on DERMS, which will then send a signal to the service provider platform and/or BEMS. After the events, DRMS will pull meter data to perform measurement and verification. PSP MW savings will increase with the addition of 7,500 free thermostats to qualifying DAC zones, improving equity outcome metrics for the program.

- **Managed Charging:** The commercial Managed Charging Program (MCP) will allow LADWP to gain valuable experience in providing a managed charging solution to commercial customers with optimal load shifting and minimal customer interaction. The commercial MCP aims to cover various aspects such as connecting and extracting customer vehicle and/or data through telematics or charging stations via a third party software solution, which is then connected to LADWP's DERMS, providing customers with the ability to initiate and terminate charging for both Level 1 (120V) and Level 2 (208V – 240V) charging systems. LADWP plans to demonstrate through the commercial MCP that a commercial customer with a fleet of ten (10) electric pickup trucks can participate in the commercial MCP.

Innovation and Impacts:

DERMS and Programs

LADWP's ability to control DERs with a management system (DERMS) is state-of-the-art practice in the utility sector. It may take some time for a DERMS system to be adopted by utilities more regularly and for all grid-operators to be actively dispatching DERs with a DERMS. LADWP's adoption of this state-of-the-art practice could increase the adoption of these programs and technologies for other utilities. LADWP currently uses an Advanced Distribution Management System platform by OSI, an industry-leading automation solutions vendor. LADWP expects to be launching the DERMS module as a supplement to its existing ADMS.

- **CES2G:** Bi-directional charging capability to enable V2G is rare in LA. The current standard practice is for customers choose to install standard uni-directional EV chargers due to the cost premium and availability over a bi-directional charger. LADWP's upcoming CES2G Pilot Program will encourage the purchase of commercial state-of-the-art bi-directional charging equipment to enable V2G due to its requirement that CES2G Pilot participants use a bi-directional charger rated at least 50kW or greater. The CES2G pilot is one of the first-of-its-kind bi-directional charging mechanisms in the Country and will facilitate the integration and aggregation of electric vehicles to the grid. Customer adoption of a bi-directional charger will allow LADWP to dispatch customer-owned batteries and energy storage devices, which may significantly aid in mitigating grid overloads and transmission system congestion due to the installations being installed locally, closer to load centers.
- **SRP/fit/FIT+:** Specifying and deploying new smart inverters will allow our electric grid operators to have more visibility and control over DER equipment. The current practice of using standard inverters did not commonly have the capability to be interacted with by grid operators. The latest, state-of-the art, generation smart inverters have capability to autonomously contribute to grid support during excursions from normal operating voltage and frequency system conditions by providing dynamic reactive/real power support, voltage

and frequency ride-through, ramp rate controls, and communication systems with the ability to accept external commands and other functions.

- Demand Response: Automating DR programs through DRMS and integration of the Building Energy Management System (BEMS) with DERMS will further facilitate the aggregation and integration of electrified loads to the grid and allow LADWP to monitor and control these DR resources at any given time. In addition, LADWP's ECC can dispatch the DR resources at locations with resource constraints to avoid outages, thereby increasing reliability and resiliency of the system. The current manual DR dispatch process utilizes labor-intensive and inefficient methods. In using smart thermostats, customers have flexibility in controls, while still being able to help LADWP in reducing peak loads, when requested.
- Managed Charging: LADWP's Managed Charging Program (MCP) will focus on ensuring customer EVs are properly powered when needed while reducing an unnecessary burden on LADWP's grid. LADWP Residential Managed Charging Program state-of-the-art nature will specify EV and related supply equipment capable of connecting to the DERMS. LADWP will explore the possibility of launching a customer incentive program that will fund the retrofitting of EVSEs. With over 100,000 registered electric vehicles in Los Angeles to date, LADWP anticipates that if all electric vehicles participated in a managed charging program, about 50 MW of dispatchable capacity would be available to grid operators. LADWP will be able to assess the effectiveness of monetary incentives on EV charging behavior and identify opportunities to alleviate overloaded circuits.

LADWP has current and upcoming pilot programs and innovative projects and plans to increase renewable energy deployment to meet State and local decarbonization goals. LADWP intends to incorporate DERs and EV Charger installations with the upcoming DERMS system integration. The intent is to give grid-operators visibility and control of DERs in order to better maintain the reliability of the distribution system. The project increases grid reliability and flexibility by providing additional control options for the operator, LADWP's ECC, to quickly rebalance the electrical system after an event.

Furthermore, DERs may be operated in a way that supports ancillary services, such as capacity and regulation reserves. With the enhanced view of the distribution system, LADWP grid operators will be able to make switching decisions more effectively thereby reducing the likelihood of unplanned outages, which greatly affect regional resiliency efforts. Lastly, LADWP may use DERs, coupled with circuit sectionalizing methods in strategic locations, to power community hubs, including cooling centers, fire stations, and/or police stations during black-outs or other emergencies.

CGIP will assist L.A. to achieve its decarbonization goals. Grid operators will be able to manage EV and BESS charging and discharging measures. This operation will help expand LADWP's time shift and peak shaving capabilities which will allow for a higher number of EVs to be accommodated on the distribution system without additional costly integration upgrades. The rollout of a DERMS system and subsequent integration with DERs will greatly help LADWP meet State, local, and community goals by expanding our access to our DERs and giving them the ability to have managed charging. This is especially useful as the peak demand of the system shifts due to the mass emergence of EV charging during the late afternoon and early evening.

Impact of the project to reduce innovative technology risk

The CGIP will have a positive impact to reduce innovative technology risk by accelerating the maturation of the market for third-party DER aggregation. Furthermore, LADWP's technology-agnostic approach demands a common communication platform that will allow interoperability among disparate resources, opening the door to future technologies not yet conceived. For applicable projects, LADWP will use communication protocols including, but not limited to, IEEE 2030.5, DNP 3.0, and OpenADR. LADWP may adopt other communication protocols as needed. LADWP can strategically pursue this technology now and not be fearful of timing the market. The technology is accessible and customizable and LADWP will partner with proven third-party aggregators to accelerate adoption.

DERMS are currently available on the market and developed by established companies, lowering potential risk for LADWP or other utilities. LADWP currently uses an Energy Management System platform by OSI, an industry-leading automation solutions vendor. The mixing of a DERMS with a V2G pilot and integration of a host of other DERs, however, does pose a slight risk because this technological combination is in its infancy. Integrating existing and future systems into a DERMS, especially with those that enable V2G, is not yet widely adopted in the industry. The knowledge and experience gained from LADWP's proposed pilot projects and existing program enhancements will reduce innovative technology risk for LADWP and other utilities in the future.

LADWP will be able to better utilize DR resources during system constraint situations, such as extreme weather events or other reliability challenges. Connecting the customers' BEMSs with LADWP's DERMS enables the automatic dispatch of DR resources on the transmission constrained feeders and circuits to avoid thermal overloads in the system. In addition, faster notifications to customers regarding their performance data after an event will keep the customers engaged, enable adjustments to increase future performance, and help them understand the value of their contributions to the system.

How this project will lead to additional private sector investments

Enhanced LADWP visibility of DERs will produce many private sector investments initially through procurement of equipment to ensure inverters and other infrastructure have the capability to be connected to LADWP's DERMS via secure communications and telemetry protocols. The successful integration with and expansion of the DERMS will simultaneously increase the number of opportunities in the private sector by increasing the hosting capacity of LADWP's network. The increased hosting capacity will lead to an expansion of the private market programs that LADWP offers.

Further, LADWP will seek to temporarily hire contractors to help integrate our DER's to one common DERMS platform. Private sector investors will have the opportunity to participate in current and future programs as LADWP seeks to establish methodologies that will be created as a result of lessons-learned.

For the DR automation project, LADWP will utilize the in-house DRMS for integrations. Presently, the DR group in LADWP is working on a request-for-proposal (RFP) to acquire the integration services since LADWP does not have expertise in this area. The RFP is scheduled for

public release in late 2023 and vendor(s) will be selected in early 2024 for the work to begin in the second quarter of 2024. The vendor selected from this competitive RFP process will help LADWP with integrating the customers' BEMSs with the in-house DERMS. The resultant contract will have a timeline of five years, with one additional optional year if necessary. The vendor will also support LADWP by developing guidelines for future integrations and the enrollment process.

WORKPLAN

Project Objectives:

The CGIP project facilitates the aggregation and integration of EVs and EV chargers, energy storage, solar PV, and demand response infrastructure in one robust platform to support LADWP's distribution system during times of grid stress. The CGIP will provide distributed resources that can be controlled in response to grid needs. The project increases grid reliability and flexibility by providing additional control options for the operator, LADWP's Energy Control Center (ECC), to quickly rebalance the electrical system after an event. DOE funding will primarily be directed towards development of these DERMS controlled, distributed resources in DACs.

Technical Scope Summary:

The Technical Scope Summary, Milestone Summary, and Go/No-Go Decision points sections have been combined into one section to concisely meet all of the FOA's requirements. LADWP's scope can be explained in two phases. The first phase, the DERMS deployment, is occurring regardless of the DOE's funding choices. It is not additional, and LADWP is not requesting funding for it. However, it is critical to the success of phase two, which is the expansion or creation of five separate customer facing programs. The technical scope summary is the top-level information in the hierarchy. For example, for the DERMS the first item in the Technical Scope Summary is "FY 2023 – Fully deploy and test the DERMS system and dispatch a test DER facility".

WBS and Task Description Summary:

See attached

Milestone Summary

The Technical Scope Summary, Milestone Summary, and Go/No-Go Decision points sections have been combined into one section to concisely meet all of the FOA's requirements. The Milestone Summary is composed of all the second level items in the hierarchy. For example, for the DERMS the first SMART Milestone is "SMART Milestone: DERMS Installed".

Go/No-Go Decision Points

The Technical Scope Summary, Milestone Summary, and Go/No-Go Decision points sections have been combined into one section to concisely meet all of the FOA's requirements. LADWP's scope can be explained in two phases. The first phase, the DERMS deployment, is occurring regardless of the DOE's funding choices. It is not additional, and LADWP is not requesting funding for it. However, it is critical to the success of phase two, which is the expansion or creation of five separate customer facing programs. The Go/No-Go Decision Points are the

same as the SMART Milestones. This is because having Go/No-Go Decision Points for each independent sub-component of the funding request is the best management decision from the DOE's perspective.

It is likely that the programs considered here will have different levels of deployment success and operational benefits. They all depend on the successful installation and operation of the DERMS at the ECC, and without this, their value to LADWP would be significantly reduced. The SMART milestones for each program below are also go/no-go decision points. In general, each program must be properly scoped, supported, deployed, and then dispatched. The SMART milestones reflect this pattern.

DERMS

FY 2023 Milestone and Go/NoGo: Fully deploy and test the DERMS system and dispatch a test DER facility.

SMART Milestone: *DERMS installed.*

FY 2024 – 2027 Milestone and Go/NoGo: Connect DERs to DERMS and test operability. Continually analyze performance and implement corrections based on the feedback and system performance.

SMART Milestone: *DERMS is used to dispatch an energy storage system on a weeklong schedule*

FiT and FiT+ Scope, Milestones, and Go/No-Go Decisions Per Year

1. **FY 2023 Scope-** Obtain Board approval and accept applications for both FiT and FiT+ and verify eligibility to interconnect to LADWP's distribution system. Verify project infrastructure can support DERMS integration. Within the first annual period, LADWP plans to assess and process applications up to 30MWs of capacity.
 - a. **SMART Milestone and Go/No-Go:** FiT and FiT+ programs both receive Board approval for a combined capacity of at least 100 MW.
2. **FY 2024 Scope -** Assess additional projects up to 25 MWs of capacity and interconnect between 20MW to 25MWs of FiT & FiT+ projects that have DERMS dispatchability
 - a. **SMART Milestone:** DERMS is used to modify the operating parameters for a FiT project to provide grid services such as Volt/VAR control or power factor.
 - b. **SMART Milestone:** Receive applications on at least 10 MW of projects.
 - c. **Go/No-Go:** Evaluate program if target goal of 25MWs is not reached in the fiscal year and reassess.
3. **FY 2025 Scope -** Assess additional projects up to 25 MWs of capacity and interconnect between 20MW to 25MWs of FiT & FiT+ projects that have DERMS dispatchability
 - a. **SMART Milestone:** DERMS is used to dispatch a FiT+ project.
 - b. **Go/No-Go:** Evaluate program if target goal of 25MWs is not reached in the fiscal year and reassess.
4. **FY 2026 Scope -** Assess additional projects up to 25 MWs of capacity and interconnect between 20MW to 25MWs of FiT & FiT+ projects that have DERMS dispatchability.
 - a. **SMART Milestone:** DERMS is used to dispatch a FiT+ project.

- b. **Go/No-Go:** Evaluate program if target goal of 25MWs is not reached in the fiscal year and reassess.
- 5. **FY 2027 Scope-** Assess additional projects up to 25 MWs of capacity and interconnect between 20MW to 25MWs of FiT & FiT+ projects that have DERMS dispatchability.
 - a. **SMART Milestone:** DERMS is used to dispatch a FiT+ project.
 - b. **SMART Milestone:** Compose a final report that assesses FiT and FiT+ projects within DACs. This report will also include details of how the market adopted the program, price points, DERMS system integration outcomes and lessons learned.
 - c. **Go/No-Go:** Evaluate overall program based on the final report. Decide on whether to continue or sunset the program in its current form.

CES2G Scope, Milestones, and Go/No-Go Decisions Per Year

- 1. **FY 2023 Scope -** Process applications for CES2G participation.
 - a. **SMART Milestone:** CES2G seeks and receives Board approval for at least 20 MW.
 - b. **Go/No-Go:** Evaluate program based on the number of customers applying . The discharge electricity rate may need to be increased to stimulate subscriptions if no applications are received. The discharge electricity rate may need to be decreased if the entire capacity of 20 MW is subscribed to in the first year.
- 2. **FY 2024 Scope-** Enroll and interconnect 2 large customer participants with a capacity of at least 2MW in a DAC.
 - a. **SMART Milestone:** CES2G has been publicly advertised and received at least 1 MW worth of applications that can be interconnected.
 - b. **Go/No-Go:** Evaluate program if target goal of 1.5MW is not reached in the fiscal year and reassess.
- 3. **FY 2025 Scope-** Enroll and interconnect 10 large customer participants with a capacity of at least 10MW in a DAC.
 - a. Evaluate financial impact of program and operational benefits.
 - b. **SMART Milestone:** At least 1 MW of capacity has been interconnected and integrated with the DERMS.
 - c. **Go/No-Go:** Evaluate program if target goal of 9MW is not reached in the fiscal year and reassess.
- 4. **FY 2026 Scope-** Enroll and interconnect 6 large customer participants with a capacity of at least 6MW in a DAC.
 - a. **SMART Milestone:** The DERMS has dispatched and controlled at least 5 MW of assets.
 - b. **Go/No-Go:** Evaluate program if target goal of 3MW is not reached in the fiscal year and reassess.
- 5. **FY 2027 Scope -** Finish up existing participant's' interconnections. Write a report analyzing the performance of the program and evaluate whether the pilot should be expanded. Publish at least a subset of the report publicly.
 - a. **SMART Milestone:** The DERMS has dispatched and controlled at least 2 MW of assets.
 - b. **Go/No-Go:** Evaluate program if target goal of 3MW is not reached in the fiscal year and reassess.

SRP Scope, Milestones, and Go/No-Go Decisions Per Year

It is anticipated that 30 out of 50 new installations each year will be within DACs and have average system size of 5 kW for PV & 10 kW for PV plus energy storage.

1. FY 2023 **Scope**- Prepare for Program Expansion:
 - a. Coordinate/consult with management and the local union to Identify staffing and resources needed.
 - b. Seek LADWP Board Approval for expansion.
 - c. Collaborate with community-based organizations to target and enroll more DAC customers.
 - d. Install up to 22 PV systems (110kW) in DACs.
 - e. **SMART Milestone**: Develop a staffing plan with management and the local union.
 - f. **SMART Milestone**: Receive Board approval for the expanded SRP program.
 - g. **Go/No-Go**: Re-evaluate and assess the program if Board approval is not granted.
2. FY 2024 **Scope**- Procure equipment and enroll more customers.
 - a. **SMART Milestone**: Install solar and energy storage on at representing at least 250 kW of combined solar and energy storage capacity.
 - b. **SMART Milestone**: Sign an agreement with at least one community organization to host energy storage, solar PV, and EV chargers under the expanded SRP.
 - c. **Go/No-Go**: Re-evaluate and assess the program based on the number of customer sign-ups. If no customers have signed up for the program, prepare to amend the program to enhance appeal to customers, especially in DACs.
3. FY 2025 **Scope**- Procure equipment and enroll more customers. Install 30 new installations (225 kW) and integrate DAC-located customers with DERMS.
 - a. **SMART Milestone**: Install solar and energy storage on at least 5 different sites.
 - b. **SMART Milestone**: Dispatch at least 5 different sites with the DERMS.
 - c. **Go/No-Go**: Re-evaluate and assess the program if target of 30 installations is not met.
4. FY 2026 **Scope**- Procure equipment and enroll more customers. Install 30 new installations (225 kW) and integrate with DERMS.
 - a. **SMART Milestone**: Install solar PV, energy storage, and EV chargers with a community partner.
 - b. **Go/No-Go**: Re-evaluate and assess the program if target of 30 installations is not met.
5. FY 2027 **Scope**- Procure equipment and enroll more customers. Install 30 new installations (225 kW) and integrate with DERMS.
 - a. **SMART Milestone**: Install solar and energy storage on at least 5 different sites.
 - b. **Go/No-Go**: Re-evaluate and assess the program if target of 30 installations is not met.

Demand Response Scope, Milestones, and Go/No-Go Decisions Per Year

The DRMS will be installed at LADWP environment and integrated with the DERMS. Six LACCD sites and 100 LAUSD schools will be chosen for reimbursement of BEMS. For the selections of schools, priority will be given to those in DAC. In addition, LADWP will distribute 7,500 thermostats to qualifying customers in DAC community.

1. FY 2023 **Scope**- Issue the contract. 1,500 thermostats will be distributed.
 - a. **SMART Milestone**: Publicly advertise the contract to procure the DRMS and necessary support. Procurement and installation of DRMS.
 - b. **SMART Milestone**: Enroll at least 500 new program participants in the residential demand response program.

- c. FY 2024 **Scope** - Relaunch the program: 1 LACCD college, 10 LAUSD schools, and CSULA will be reimbursed for integration of BEMS. 1,500 thermostats will be distributed.
 - d. **SMART Milestone:** Begin integration of at least 1 LACCD or LAUSD campus and CSULA into DERMS and DRMS
 - e. **SMART Milestone:** Enroll at least 1,000 new program participants in the residential demand response program.
 - f. **SMART Milestone:** DRMS will be fully integrated with the DERMS.
 - g. **Go/No-go:** Evaluate whether we were able to enroll 1,000 residential DR participants. Evaluate integration of BEMS to DERMS and reassess.
2. FY 2025 **Scope**- 1 LACCD college and 30 LAUSD schools will be reimbursed for integration of BEMS. 1,500 thermostats will be distributed.
- a. **SMART Milestone:** Dispatch at least 1 campus and initiate one demand response event.
 - b. **SMART Milestone:** Enroll at least 1,000 new program participants in the residential demand response program.
 - c. **Go/No-go:** Evaluate whether we were able to enroll 1,000 residential DR participants. Evaluate integration of BEMS for 1 LACCD college and 25 LAUSD schools to DERMS and reassess.
3. FY 2026 **Scope** - 2 LACCD college and 30 LAUSD schools will be reimbursed for integration of BEMS. 1,500 thermostats will be distributed.
- a. **SMART Milestone:** Dispatch at least 1 campus and initiate one demand response event on a targeted circuit.
 - b. **SMART Milestone:** Enroll at least 2,500 new program participants in the residential demand response program.
 - c. **Go/No-go:** Evaluate whether we were able to enroll 2,000 residential DR participants. Evaluate integration of BEMS for 1 LACCD college and 25 LAUSD schools to DERMS and reassess.
4. FY 2027 **Scope**- 2 LACCD college and 30 LAUSD schools will be reimbursed for integration of BEMS. 1,500 thermostats will be distributed.
- a. **SMART Milestone:** Dispatch at least 3 campuses and initiate one demand response event on a targeted circuit.
 - b. **SMART Milestone:** Enroll at least 2,500 new program participants in the residential demand response program.
 - c. **Go/No-go:** Evaluate whether we were able to enroll 2,000 residential DR participants. Evaluate integration of BEMS for 1 LACCD college and 25 LAUSD schools to DERMS and reassess.

Managed Charging Scope, Milestones, and Go/No-Go Decisions Per Year

- 1. FY 2023 **Scope** - Initiate the Managed Charging Program
 - a. **SMART Milestone:** Publicly advertise the request for proposal for at least 3,000 residential customers.
 - b. **Go/No-go:** Evaluate public release of 3,000 residential customers. Reassess if not effective.

2. FY 2024 **Scope** - Publicly launch the Managed Charging Program
 - a. **SMART Milestone:** Award and execute the Managed Charging Program contract.
 - b. **SMART Milestone:** Receive applications for at least 200 customers representing at least 1 MW of charging capacity.
 - c. **Go/No-go:** Evaluate if we got applications for at least 200 customers and 1MW of capacity. Reassess and reevaluate goals if not.
3. FY 2025 **Scope** - Deploy the Managed Charging Program
 - a. **SMART Milestone:** Interconnect at least 2000 customers under the program.
 - b. **Go/No-go:** Evaluate if we got applications for at least 800 customers and 1MW of capacity. Reassess and reevaluate goals if not.
4. FY 2026 **Scope** - Operate the Managed Charging Program
 - a. **SMART Milestone:** Dispatch at least 1 MW of program participants with the DERMS.
 - b. **SMART Milestone:** Interconnect at least 2000 customers under the program.
 - c. **Go/No-go:** Evaluate if we got applications for at least 800 customers and 1MW of capacity. Reassess and reevaluate goals if not.
5. FY 2027 **Scope**- Operate and Evaluate the Managed Charging Program
 - a. **SMART Milestone:** Interconnect at least 2000 customers under the program.
 - b. **SMART Milestone:** DERMS can automatically dispatch at least 1.5 MW of managed charging to shift load to an off-peak time.
 - c. Write a report analyzing the performance of the program and evaluate whether the pilot should be expanded. Publish at least a subset of the report publicly.
 - d. **Go/No-go:** Evaluate if we got applications for at least 1,800 customers and 1.2MW of capacity. Reassess and reevaluate goals if not.

End of Project Goal:

LADWP will have a fully deployed DERMS platform at the conclusion of this project. The platform will be fully tested and commissioned, giving operators the ability to dispatch DERs reliably. Additionally, LADWP aspires to have all programs mentioned in this Application fully deployed at the desired capacities. LADWP grid operators will be able to collect performance metrics to evaluate the various DERs to gauge the effectiveness for system reliability and resource adequacy. This includes conducting baseline analysis on affected circuits and analyzing performance metrics such as voltage, frequency, active power delta, reactive power delta, and circuit sectionalizing results. Lastly, LADWP would like to see a measurable difference in performance at the transmission level due to the successful dispatch of the enrolled DERs.

Project Schedule (Gantt Chart or similar):

Please See attached MS Project file and page 25

Buy America Requirements for Infrastructure Projects:

This project will involve construction alteration, maintenance and/ or repair of electrical transmission facilities and systems located in the United States.

Project Management Plan

The Power System Planning (PSP) Division within the LADWP will be the primary point of project management (including any changes) for the roll-out and operation of the DERMS' sub-

systems. The following details each LADWP Division’s responsibilities and key-personnel involved.

The CGIP Program will require participation from all Divisions in LADWP to serve a specific role. The project management and program administration will be conducted by the PSP Division and Power System New Business and Electrification (PNBE) Division. This will include any project changes and will be the central point of communication for all other Divisions. Other Divisions will be involved for total project involvement, which will include design, engineering, planning, construction, maintenance, and operations. Those details are expanded on below:

Name	Title	CGIP Project Roles and Responsibilities
Aram Benyamin	Chief Operating Officer	Oversight of entire LADWP operations
Brian Wilbur	Interim Sr. Assistant General Manager- Power System	Oversight of entire LADWP Power System Design, Planning, Construction, and Operations
Jason Rondou	Division Director: Power System Planning (PSP) Division	Program oversight of CES2G Pilot, FIT/FIT+, SRP, and Demand Response
Arash Saidi	Section Manager: Distributed Resource Development and Programs	Program management of CES2G Pilot, FiT/FiT+, SRP, and Demand Response Serves as project/program manager and maintains constant communication between other divisions Project components handed off and collaboration with PNBE and/or PETS
Winifred Yancy	Division Director: Power System New Business and Electrification Division (PNBE)	Program oversight and management of Managed Charging Service Planning functions for interconnecting new program participants of CES2G Pilot, FiT/FiT+, Managed Charging, SRP Project components handed off to PCM
Louis Ting	Division Director: Power System Engineering (PSE) Division	Oversight of distribution/sub-transmission line extensions and other design considerations for interconnecting new program participants Project handed off to PTD and PCM after work is complete
Walter Rodriguez Jr.	Division Director: Power System Transmission and Distribution Division (PTD)	Project handed off to PSO and RPDP/PNBE after work is complete
Christopher Lynn	Division Director: Power System Integrated Support Services Division (ISS)	Oversight of equipment in-servicing and testing Project handed off to PSO after work is complete
Norman Cahill	Division Director: Power System Construction and Maintenance Division (PCM)	Oversight of Vista Switch/Sub-station in a box (SSIAB) procurement for large interconnections exceeding 1MW

		Project is handed off to PSO and ISS after work is complete
Robert Gonzalez	Division Director: Power System Supply Operations Division (PSO)	Oversight of DERMS.
Matthew Emerson	Senior Load Dispatcher	Manage and Operate DERMS.

Technical Qualifications and Resources:

Jason Rondou, Director of Resource Planning, Development, and Programs

Jason Rondou is the Director of LADWP’s Resource Planning, Development and Programs Division, where he oversees LADWP’s integrated resource planning, utility-scale renewable and energy storage procurement, distributed energy resource planning and implementation, and generating stations engineering. Jason graduated from Loyola Marymount University with a degree in Electrical Engineering and has a M.P.A. from USC and an MBA from UCLA. Jason is a licensed Electrical and Transportation Engineer in CA and is the former Chair of the Los Angeles IEEE Power & Energy Society.

Arash Saidi, Power Engineering Manager of Distributed Resources Development & Programs

Arash Saidi oversees the development of customer-centric business solutions to address the growing needs of clean and reliable energy. His commitment to accelerate and determine the optimal business strategies and processes to facilitate a broader renewable and distributed energy resource (DER) procurement that is beneficial to LADWP’s electric infrastructure and its customers is in line with LADWP’s goal to decarbonize the entire grid by 2045 or sooner. During his 13+ year tenure at LADWP, Arash has held various engineering and system planning roles related to bulk renewable energy development. Arash obtained his B.S. and M.S. in Electrical Engineering from CSULB and USC, respectively, and an MBA from USC’s Marshall School of Business. He also holds a Professional Engineering license in the State of California.

Winifred Yancy, Director of Power New Business and Electrification Division

Winifred Yancy, a licensed Electrical Engineer in CA and native of New Orleans, Louisiana, obtained an Electrical Engineering degree from California State University Northridge in 1990 and a MBA from Pepperdine University in 2006. After serving almost 20 years in the Government Affairs arena, Winifred currently serves as the Director of Power New Business and Electrification. In this position, she is responsible for the operations that bring electrical service to customers and oversees LADWP’s efforts to expand Electric Vehicle infrastructure, especially in disadvantaged communities. Her career in the utility industry began as an Electrical Engineering Assistant at LADWP, where she spent years in the Power, Design and Construction Division and recently was Director of Legislative and Intergovernmental Affairs. She has more than thirty years of service with LADWP.

Robert Gonzalez, Director of Power Supply Operations Division

Robert P. Gonzalez is the Director of Power Supply and Operations Division at LADWP. He is responsible for managing LADWP's internal power generation, operations, and maintenance, as well as Energy Control and Grid Reliability. Mr. Gonzalez has more than 33 years of experience with LADWP, including over 20 years of management experience in various LADWP divisions.

Louis Ting, Director of Power Engineering and Technical Services Division

Louis Ting has been with LADWP for 29 years. Currently he is responsible for the transition to a clean energy future focusing on modernizing the grid to enable clean transportation electrification programs and strategies, implementing LA100 goals to strengthen LA's distribution and transmission grids, and executing major programs and projects for LA's Power System.

Walter Rodriguez Jr., Interim Director of Power Transmission and Distribution Division

On December 5, 2022, Walter Rodriguez was promoted to Director of the Power Transmission and Distribution Division. Walter oversees the maintenance and construction of transmission and distribution systems in the LADWP service territory and has over 34 years of experience with LADWP. He began his career with the Department in April 1988 as an Electrical Craft Helper (groundman). He entered into the Department's apprenticeship program as an Electrical Distribution Mechanic Trainee, graduating as a Journeyman Lineman. Walter promoted through the ranks within the Lineman series, having spent time in Overhead Distribution Design and Power System Safety. Walter then promoted to Transmission and Distribution District Supervisor spending time in Van Nuys, West Los Angeles, Palms and Central Districts. Throughout his career, Walter has represented the Department in providing mutual aid assistance in Puerto Rico (1989), Long Island, New York (2012), and Northern California (2017). Walter has served on numerous Joint Labor Management Committees developing excellent working relationships with employees at all levels.

Norman Cahill, Director of Power Construction and Maintenance Division

Norman Cahill has served LADWP and L.A. for over 36 years, most recently as the Director of Power Supply Operations Division. Previously, he was the Manager of Steam Generation, Manager of Extra High Voltage Stations and Substation Operations Groups. Prior to these roles he was the Chief Electric Plant Operator managing the various operating areas of the Substation Operations group. Norman also spent time in the Los Angeles Department of Transportation as a Signal Systems Electrician.

Christopher Lynn, Director of Power System Integrated Support Services Division

Christopher J. Lynn serves as the Director of Power System Integrated Support Services. He has over 30 years of experience with LADWP. In his current role, he directs Maintenance and Support Services which includes, Electrical Station Maintenance, Central Repair and Fabrication, Water Electric Shop, and Technical Services which entails managing Laboratory and Technical Services, System Protection, New Installation Test and Diagnostics Meter Lab, Applied Testing, Power Quality and Corrosion Control, and the Environmental Lab. Prior Christopher directed Energy Control and Grid Reliability public utility operations, including power generation,

balancing area operations, distribution and transmission planning, renewable and distributed energy systems, environmental regulations, physical and cyber security, electric station automation (SCADA), control, metering, and relay protection systems, energy efficiency, demand side management, renewable, and hiring programs. As Director of Power Supply Operations, he was responsible for the operations of transmission and distribution grids, including the Balancing Authority of LADWP, the operations of thermal generating stations, wind, solar, pump storage and small hydro power plants. Sections under his direction include Grid Operations, Grid Planning, Substation Operations, Thermal, and Hydro-Renewable Generation. Earlier, he served as the Manager of Power Construction and Maintenance Electrical Construction section overseeing large capital projects, project management, safety programs, schedule and budgets.

Matthew Emerson, Senior Load Dispatcher

Matthew Emerson is a Senior Load Dispatcher at the Energy Control Center and NERC certified Power System Operator. He currently holds a specialist position design the HMI displays and building the Distribution Power Flow model including implementation of the DERMS at LADWP. During 12 of power dispatcher and 8 years of US Nuclear Navy experience, Matt has been recognized by NERC, WECC, EPRI, and NATF for his work on situational awareness, map boards, and operator displays.

Brian J. Wilbur, Senior Assistant General Manager, Power System Construction, Maintenance and Operations

Brian Wilbur was appointed to this position on November 29, 2021. He has over 34 years of LADWP experience in construction, maintenance, and operations within the Power System. Wilbur began his career at LADWP in 1987 as an Electrical Craft Helper. He climbed the ranks of LADWP's Electric Distribution Mechanic (lineman) classification series, working in both overhead and underground distribution infrastructure. He was promoted to Electric Distribution Mechanic Supervisor where he worked as Line Crew Foreman, a Pole Spotter in the Overhead Design group, and a supervisor in the Power System Safety group. In July 2011, he was elevated to Transmission and Distribution District Superintendent "B" for the Central and West Los Angeles districts. In 2012, he was promoted to Transmission and Distribution District Superintendent "A," managing one of the largest distribution facilities in LADWP's service territory and then spent the next three years as the Power System Safety Superintendent.

Project team's existing equipment and facilities, or equipment or facilities already in place

The LADWP currently utilizes an ADMS system which is fully tested and operable by LADWP grid operators. The ADMS functions to manage and control equipment and facilities on the LADWP 4.8kV Distribution System and the 34.5kV Sub-Transmission System.

The existing FiT program has 101.7MWs of installed capacity that spans over 143 projects. These existing projects are not tied to a DERMS system. Once a DERMS system is integrated, LADWP will incorporate specific requirements for future FiT and FiT+ participants to install systems that are compatible with the DERMS.

Through SRP, LADWP has 32 PV systems currently installed throughout the city (109kW-AC) without energy storage, smart chargers, web gateway, and communication.

The C&I program currently has 63 participants averaging 35 MW saved per event in the 2022 season. PSP has 43,806 thermostats in the program averaging at 0.7kw/thermostat as 30 MW capacity. C&I customers will need to update or purchase a compatible BEMS to tie to LADWP’s DERMS. Thus, the need to incentivize customers for a BEMS upgrade or purchase. PSP data will need to be transferred to new LADWP DERMS. It may prompt a new application and acknowledgment of terms due to a change in vendors.

LADWP has a history of developing innovative programs and advancing its portfolio of emerging technologies. Our goal is to integrate all DERs to a common DERMS platform and facilitate the aggregation and integration of EVs and other grid-edge devices to the DERMS platform. We believe that we are able to meet this ambitious goal because we have experienced personnel who have demonstrated success in implementing innovative and transformational programs on LADWP’s system. The programs already mentioned in this application are detailed below, and are a testament of LADWP’s capability and ambition to reliably meet our customers electric demand using 100 percent renewable energy.

CGIP	Demonstrated Innovations
DERMS	This system will help facilitate aggregation and integration of DERs and other grid-edge devices, including: EVs, EV chargers, Battery Energy Storage Systems (BESSs), Solar PV, and more. It does this by securely connecting DER’s, via secure protocols such as IEEE 2030.5 to LADWP’s Energy Control Center. This system will allow grid operators to have real-time visibility of DER’s and be able to quickly address grid reliability challenges using autonomous controls. Resources will become dispatchable to provide many benefits to the LADWP grid as a whole and will have a positive effect on the grid at the distribution and transmission level. The DERMS will have direct integration with the following programs and pilot programs: FiT/FiT+, CES2G, RESI, SRP, and Managed Charging Program. More detail is provided below.
FiT/FiT+	The FiT program allows property owners and developers to sell the output of local eligible renewable energy projects directly to LADWP (as opposed to consuming the energy onsite to satisfy the customer’s load). This program generates local renewable capacity through a public-private partnership while helping LADWP achieve Renewable Portfolio Standard mandates. The FiT Program is structured to cater towards LADWP’s entire service territory. LADWP wants to integrate DERs throughout its service territory and have these systems equitable across the board. This program is vital in increasing solar at the distribution level and helps meet our long-term renewable portfolio goals. Additionally, it addresses the topic area because integrating with a DERMS system will allow ECC to control the output of the generators and adjust power

	<p>factor based on grid needs. The existing FiT program was expanded with the introduction of the FiT+ program that allows solar and collocated energy storage systems at a facility. The energy storage system with solar allows store/shift power during critical peak periods and these systems will eventually be integrated with a LADWPs DERMS <u>system</u>.</p>
CES2G	<p>The CES2G Pilot Program coupled with the DERMS will enable Vehicle-to-Grid (V2G) operations. With this pilot, LADWP will have full control over the commercial stationary BESSs, commercial EV chargers, and EV charging infrastructure to ensure charge management is performed in a manner that is most beneficial for the electric grid. Commercial customers can participate in the pilot by hosting stationary BESSs or commercial EVs. LADWP will have the ability to control these energy storage systems with the DERMS and will have visibility with software, sensors, and controlled charging and discharging, in part, with the use of load/generation data analytics.</p>
SRP	<p>The SRP was developed to encourage qualified LADWP residential customers who could not participate in solar because of the high cost of installing panels to participate in solar generation. In return, customers would receive annual payments from LADWP to install and host a system on their roof. The program prioritizes disadvantaged communities and the energy generated from the rooftop installations will go directly to the grid to help meet clean energy goals. This program achieves the topic area’s objective by integrating additional renewable energy resources at the distribution level and increasing the electric capacity of the grid. With the addition of a battery energy storage system, smart chargers, adoption of smart inverters to control power output and provide volt/VAR support, and the introduction of a web gateway to communicate with our ECC; our operators are provided real-time aggregated data. Having further visibility into the distribution system provides operators the capability to inject power into the grid when and where it’s needed, potentially preventing or curtailing faults on the system, which have led to wildfires or other disturbances. At the very least, the real-time data can provide warnings in case there is trouble at one of the sites and notify operators of the need for immediate repairs to restore the system quickly and prevent system disturbances.</p>
Demand Response	<p>The Demand Response program will go significantly further by integrating with C&I customers’ BEMS to a common DERMS platform. The LADWP plans to offer considerable incentives to customers to adopt a BEMS. In DR’s current state, the process to “call” DR events are manual and time-consuming for LADWP and customers. LADWP is planning to publish a Request for Proposal for integrating our current and future DR customers into one DERMS platform for dispatching DR resources during extreme weather conditions or reliability challenges.</p>

Managed Charging	LADWP will pilot a Residential Managed Charging Program that focuses on ensuring customer EVs are properly powered when needed while reducing unnecessary burden on LADWP’s grid. LADWP Residential Managed Charging Program will specify electric vehicles (EV) and electric vehicle supply equipment (EVSE) capable of connecting to the DERMS. LADWP will explore the possibility of launching a customer incentive program that will fund the retrofitting of EVSEs. With over 100,000 registered electric vehicles in Los Angeles to date, LADWP anticipates that if all electric vehicles participated in a managed charging program, about 50 MW of dispatchable capacity would be available to grid operators. LADWP will be able to assess the effectiveness of monetary incentives on EV charging behavior and identify opportunities to alleviate overloaded circuits.
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Time commitment of the key team members to support the project.

Arash Saidi, Power Engineering Manager of Distributed Resources Development & Programs

The Distributed Resources and Development & Programs teams are actively expanding and administrating LADWP’s DER procurement and operations efforts.

Matthew Emerson, Senior Load Dispatcher

The Energy Control Center will commit a portion of its DERMS team towards accomplishing this goal. Additionally, a team will be created to maintain the DERMS.

Winifred Yancy, Director of Power New Business and Electrification Division

The Power New Business and Electrification team will commit resources from its division towards accomplishing this effort.

Describe the technical services to be provided by DOE/NNSA FFRDCs, if applicable.

LADWP does not foresee the need for any additional technical services to be provided by a federal partner to implement this project.

Project Schedule (Gantt Chart or similar):

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessor	Resource Names	Jan 1, '23	Jan 8, '23	Jan 15, '23	Jan 22, '23			
								S	M	T	W	T	F	S
1	W	Community Grid Innovation	1305 days?	Sun 1/1/23	Fri 12/31/27									
2	W	DER Management	1305 days?	Sun 1/1/23	Fri 12/31/27									
3	W	Commercial Energy Storage to Grid (CES2G)	1305 days	Sun 1/1/23	Fri 12/31/27									
4	J	2023 Milestones	262 days	Sun 1/1/23	Sun 12/31/23									
5	J	2024 Milestones	262 days	Mon 1/1/24	Tue 12/31/24									
10	J	2025 Milestones	261 days	Wed 1/1/25	Wed 12/31/25									
13	J	2026 Milestones	261 days	Thu 1/1/26	Thu 12/31/26									
16	J	2027 Milestones	261 days	Fri 1/1/27	Fri 12/31/27									
19	W	Demand Response	1102 days?	Mon 9/18/23	Tue 12/7/27									
20	W	Acquire and integrate DRMS with peripheral	182 days	Mon 9/18/23	Tue 5/28/24									
24	W	Identify LAUSD schools in	60 days?	Thu 11/23/23	Wed 2/14/24									
25	W	Enable autoDR at LACCD campuses and LAUSD schools	920 days?	Wed 5/29/24	Tue 12/7/27	20								
30	J	Distribute thermostats to eligible residential customers in DAC	634 days	Tue 1/2/24	Fri 6/5/26									
36	W	Managed Charging	1305 days	Sun 1/1/23	Fri 12/31/27									
37	J	2023 Milestones	262 days	Sun 1/1/23	Sun 12/31/23									
40	J	2024 Milestones	262 days	Mon 1/1/24	Tue 12/31/24									
43	J	2025 Milestones	261 days	Wed 1/1/25	Wed 12/31/25									
45	J	2026 Milestones	261 days	Thu 1/1/26	Thu 12/31/26									
48	J	2027 Milestones	261 days	Fri 1/1/27	Fri 12/31/27									
52	W	Solar Rooftops	1305 days	Sun 1/1/23	Fri 12/31/27									
53	J	2023 Milestones	262 days	Sun 1/1/23	Sun 12/31/23									
57	J	2024 Milestones	262 days	Mon 1/1/24	Tue 12/31/24									
59	J	2025 Milestones	261 days	Wed 1/1/25	Wed 12/31/25									
61	J	2026 Milestones	261 days	Thu 1/1/26	Thu 12/31/26									
63	J	2027 Milestones	261 days	Fri 1/1/27	Fri 12/31/27									
65	W	Feed-in Tariff (FIT) / Feed-in Tariff	1305 days	Sun 1/1/23	Fri 12/31/27									
66	J	2023 Milestones	262 days	Sun 1/1/23	Sun 12/31/23									
69	J	2024 Milestones	262 days	Mon 1/1/24	Tue 12/31/24									
73	J	2025 Milestones	261 days	Wed 1/1/25	Wed 12/31/25									
76	J	2026 Milestones	261 days	Thu 1/1/26	Thu 12/31/26									
79	J	2027 Milestones	261 days	Fri 1/1/27	Fri 12/31/27									

Project Description and Assurances Document (PDAD)

Project Title:	Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources
Applicant Name:	Los Angeles Department of Water and Power (LADWP)
Applicant Address:	111 N. Hope St., Los Angeles CA, 90012
Names of all team member organizations:	
Principal Investigator (Name, Address if different than Applicant's, Phone Number, E-mail):	Arash Saidi, Power Engineering Manager, Distributed Energy Resource Development Programs & Projects Email: Arash.Saidi@ladwp.com Phone: 213-367-4886
Business Point of Contact (Name, Address if different than Applicant's, Phone Number, E-mail):	Brian J. Wilbur, Senior Assistant General Manager, Power System Construction, Maintenance and Operations Email: Brian.Wilbur@ladwp.com Phone: 213-367-2311
Include any statements regarding confidentiality.	
Federal Share:	\$48,000,000
Cost Share:	\$48,000,000
Total Estimated Project Cost:	\$96,000,000

Item 1: Specify (mark with "X" the FOA Topic Area and as applicable the Area of Interest (AOI):

- Topic Area 1: **Grid Resilience Grants** (BIL section 40101(c))
- Topic Area 2: **Smart Grid Grants** (BIL section 40107)
- Topic Area 3: **Grid Innovation Program** (BIL section 40103(b)) – Area of Interest 1 (**Transmission** System Applications)
- Topic Area 3: **Grid Innovation Program** (BIL section 40103(b)) – Area of Interest 2 (**Distribution** System Applications)
- Topic Area 3: **Grid Innovation Program** (BIL section 40103(b)) – Area of Interest 3 (**Combination** System Applications)

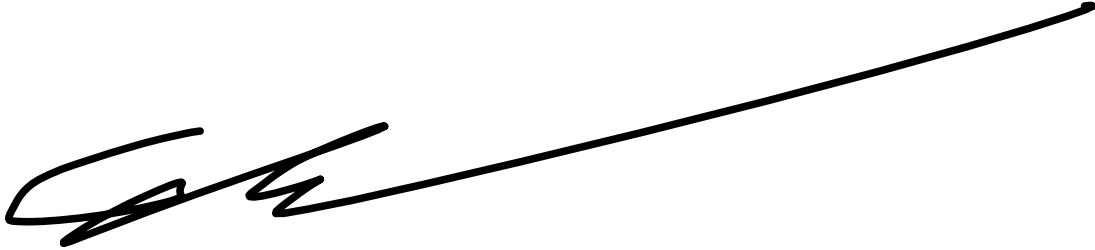
Item 7: Authorized Organizational Representative (AOR): please provide name, address, phone number and email address for the authorized agent to bind the entity

Authorized Organizational Representative (AOR):

Name: Aaron Gross
Address: 111 North Hope Street, Los Angeles, CA 90012-2607
Phone: (310) 625-9402

E-mail: Aaron.gross@ladwp.com

Item 8: Signature of Authorized Organizational Representative (AOR):

A handwritten signature in black ink, consisting of a stylized, cursive 'A' followed by a long, sweeping horizontal line that extends to the right and slightly upwards.

ARASH SAIDI, P.E.

Los Angeles, CA | (b) (6)

Power Engineering Manager of Distributed Resource Development & Programs
Los Angeles Department of Water and Power

Professional Experience:

Power Engineering Manager of Distributed Resource Development & Programs

Los Angeles Department of Water and Power, Los Angeles, CA

Sep 2021 - Present

- Oversee the administration and development of new programs, projects, initiatives, and incentives under the Distributed Energy Resource (DER) umbrella.
- Ensure that all programs align with the Clean Grid LA Strategy and LA's Green New Deal pLAn.
- Collaborate with L.A. City Departments to integrate grid resilient DER projects.
- Develop portfolio RFPs to address grid needs.
- Create pathways for governmental entities to access bulk renewable energy to meet mandated targets.
- Review and address legislative and policy issues related to DER.

Distributed Energy Resource (DER) Program Development Manager

Los Angeles Department of Water and Power, Los Angeles, CA

Dec 2019 - Sep 2021

- Led a team of engineers to enhance the renewable Feed-in Tariff program to include solar + storage projects.
- Established partnerships with L.A. City Departments to integrate grid resilient DER projects.
- Developed portfolio RFPs to address grid needs.
- Created pathways for governmental entities to access bulk renewable energy to meet mandated targets.
- Reviewed and addressed legislative and policy issues related to DER.

Solar Program Development Manager

Los Angeles Department of Water and Power, Los Angeles, CA

Oct 2018 - Dec 2019

- Oversaw the management of LADWPs solar programs, including the Solar Incentive Program and Feed-in-Tariff Program.
- Developed over 40+ solar projects ranging from 5 kW to 10 MW.
- Focused development of grid resilient projects (solar + energy storage + EV chargers).

Electrical Engineer Assoc III (Technical Lead)

Los Angeles Department of Water and Power, Los Angeles, CA
Oct 2017 - Oct 2018

Electrical Engineering Associate II

Los Angeles Department of Water and Power, Los Angeles, CA
Jan 2014 - Oct 2017

Electrical Engineering Associate II

Los Angeles Department of Water and Power, Los Angeles, CA
Jun 2009 - Jan 2014

Education:

University of Southern California

Master of Business Administration (MBA) Entrepreneurship/Entrepreneurial Studies

(b) (6)

University of Southern California

Master of Science (M.S.) Electrical and Electronics Engineering - Power System Protection

(b) (6)

California State University-Long Beach

Bachelor of Science (B.S.) Electrical and Electronics Engineering

(b) (6)

Certifications:

Professional Engineer- Power Electrical Engineering
California Department of Consumer Affairs
Issued Jun 2012

EXPERIENCE

Los Angeles Department of Water and Power

Director of Power System Planning Division, Power Engineering Manager B **2/2023 – present**

- Lead the Power System Planning Division, including transmission planning, distribution planning, resource planning, utility scale renewable and distributed resource development, and distributed energy resource programs
- Lead teams responsible for achieving LADWP's goal of 100% clean energy by 2035 in a way that is affordable, equitable, and reliable
- Serve as LADWP's management co-chair of the Joint Labor-Management Committee on Renewable Portfolio Standard

Director of Resource Planning, Development & Programs Division, PEM B **5/2019 – 2/2023**

- Director over generating station and facilities engineering, distribution planning, resource planning, utility scale renewable and distributed resource development, and distributed energy resource programs
- Oversaw team leading LADWP's groundbreaking partnership with the National Renewable Energy Laboratory to develop the industry-leading LA100 Study, evaluating pathways to achieving 100% renewable energy by 2035

Manager of Strategic Development & Programs, PPDD, PEM E **3/2018 – 9/2019**

- Managed the Strategic Development & Programs group in Power Planning and Development Division, which includes the Energy Imbalance Market (EIM) implementation project as well as the Demand Response, Solar Incentive Program, Feed-in Tariff Program and Community Solar Programs
- Served as Power System's Legislative Coordinator, provide and coordinate Power System input on major strategic legislative issues, educating state legislators and state legislative staff

Supervisor of Distributed Energy Resource Program Office, PPDD, Electrical Engineer B **6/2017 – 3/2018**

- Led DER Program Office, comprised of Demand Response, Solar Incentive Program, Feed-in Tariff Program and Community Solar Programs
- Managed and developed diverse team of Electrical Engineer D supervisors, Engineering Associates, administrative staff and consultants

Aliso Canyon Mitigation Plan Project Manager, Special Assignment **5/2016 – 3/2018**

- Coordinated LADWP's mitigation measures, including the expansion or acceleration of programs, changes to power system operations and marketing, alternative fuel readiness and customer outreach
- Represented LADWP through the Joint Agency's development and communication of Technical Assessments and Winter and Summer Action Plans

Supervisor of Solar Programs Development, PPDD, Electrical Engineer D **7/2014 – 6/2017**

- Managed Solar Incentive Program, Feed-in Tariff Program and Utility Built Solar planning
- Envisioned and led organizational change and process re-engineering effort impacting multiple Power System divisions and Customer Service divisions, resulting in significant efficiencies

Demand Response Planning / Solar Development, PPDD, Engineering Associate **10/2010 – 7/2014**

- Developed implementation plan for 500 MW demand response portfolio
- Designed program implementation schedules, program budgets and resource needs

Jason L. Rondou

EXPERIENCE (Continued)

Los Angeles Department of Water and Power (Continued)

Project Management & Controls, ISS, Electrical Engineering Associate **7/2009 – 10/2010**

- Coordinated purchasing process for system-wide Maximo asset management program upgrade and business process review and procured professional services to support division staff
- Planned and monitored project costs for substation construction projects, coordinating with Electrical and General Construction supervision and management

Los Angeles Department of Transportation

Transit Corridor Development Section, Transportation Engineering Associate **8/2003 – 7/2009**

- Led team of engineers, drafting technicians and field personnel during planning, engineering and construction phases of major transit projects throughout City of Los Angeles, including the Orange Line Busway, Exposition Light Rail and other transit projects
- Represented Department in meetings with elected officials, business leaders and community stakeholders

EDUCATION, INVOLVEMENT & LICENSES

Master of Business Administration, UCLA Anderson School of Management

- Operations and Finance

Master of Public Administration, USC Price School of Public Policy

- Change Management, Strategy, Environmental and Energy Policy and Regulation
- Pi Alpha Alpha, National Honor Society for Public Affairs and Administration

Bachelor of Science, Electrical Engineering, Loyola Marymount University

- Computer Engineering Emphasis

Mentor, Business Acumen for Emerging Leaders, Western Energy Institute (WEI)

Elected Chair (2013 and 2014), IEEE Power & Energy Society, Metro Los Angeles Chapter

2007 Young Transportation Engineer of the Year, Southern California Institute of Transp. Engineers (ITE)

Professional Electrical Engineer, California, E 19840

Professional Transportation Engineer, California, TR 2420

ADDITIONAL EXPERIENCE

Project Engineer, High Voltage Transmission Line Research

- Contract administrator of Tailored Collaboration project to design and implement various magnetic field reduction techniques.
- Developed and coordinated design guidelines and standards to reduce magnetic field levels at the edge of right of way or property line at all alternating current electric facilities.
- Reviewed and analyzed proposed legislation concerning magnetic fields and its impact on the utility industry.
- Assisted in the formulation of LADWP policies relating to EMF issue.

Project Manager, Project Controls Group

Designed and managed budget and schedule for the design and construction of LADWP power distribution facilities with project expenditures in excess of one million dollars.

Project Engineer, High Voltage Transmission Line Design

- Calculated and instituted revised loading capabilities of high voltage transmission lines to ensure safety and compliance with state and federal regulations.
- Revised computer software programs to calculate various conductor characteristics to aid in the design of high voltage transmission lines.

EDUCATION

CALIFORNIA STATE UNIVERSITY, Northridge, California
BS Electrical Engineering

PEPPERDINE UNIVERSITY, Malibu, California
Master's Business Administration

CORNELL UNIVERSITY, Ithaca, New York
Diversity and Inclusion Certificate

LICENSURE

California Professional Engineers License – Electrical

PROFESSIONAL DEVELOPMENT

KPMG, Executive Leadership Institute for Women, (b) (6)

AFFILIATIONS

- Greater Los Angeles African American Chamber of Commerce – Educational Fund Board Member

BRIAN J. WILBUR

Los Angeles, CA | (b) (6)

Senior Assistant General Manager - Power System Construction, Maintenance, and Operations
Los Angeles Department of Water and Power

Summary: Brian J. Wilbur was appointed to his current position as Senior Assistant General Manager for Power System Construction, Maintenance, and Operations on November 29, 2021. With over 34 years of experience in construction, maintenance, and operations within the Power System at the Los Angeles Department of Water and Power (LADWP), Brian has a wealth of knowledge and expertise in his field. He has held various positions throughout his career at LADWP, including lineman, supervisor, and district superintendent.

Professional Experience:

Senior Assistant General Manager - Power System Construction, Maintenance, and Operations Los Angeles Department of Water and Power | Los Angeles, CA 2021 - Present

- Oversees the construction, maintenance, and operations of power systems for LADWP.
- Works with cross-functional teams to ensure high-quality standards are met.
- Provides exceptional customer service to the residents of Los Angeles.
- Collaborates with colleagues to identify areas for improvement and implement effective strategies.

Power System Safety Superintendent Los Angeles Department of Water and Power | Los Angeles, CA 2018 - 2021

- Managed the Power System Safety group at LADWP.
- Developed and implemented safety protocols to ensure compliance with regulatory standards.
- Worked with cross-functional teams to improve operational processes, resulting in a 10% increase in productivity.
- Collaborated with colleagues to identify areas for improvement and implement effective strategies.

Transmission and Distribution District Superintendent "A" Los Angeles Department of Water and Power | Los Angeles, CA 2012 - 2018

- Managed one of the largest distribution facilities in LADWP's service territory.
- Worked with cross-functional teams to improve operational processes, resulting in a 15% increase in productivity.
- Managed a budget of \$10 million annually, ensuring all projects were completed within budget and on time.
- Collaborated with colleagues to identify areas for improvement and implement effective strategies.

Education:

Bachelor of Science in Electrical Engineering California State University, Los Angeles | Los Angeles, CA (b) (6)

Skills:

- Project management
- Team leadership
- Budget management
- Construction management
- Preventative maintenance
- Operations management
- Electrical engineering
- Regulatory compliance
- Cross-functional collaboration
- Customer service

Certifications:

- Professional Engineer (PE) License, State of California, 1999

ARAM BENYAMIN

Los Angeles, CA | (b) (6)
Chief Operating Officer (COO)
Los Angeles Department of Water and Power

Professional Summary:

Aram Benyamin is an accomplished utility executive with extensive experience in the energy sector. As the COO of LADWP, the nation's largest publicly-owned utility, he oversees all facets of operations, policies, budget, and goals. He is responsible for directly overseeing the Senior Assistant General Manager(s) over the Power System and assists in shepherding the evolutionary plans and goals of that system.

Professional Experience:

Chief Operating Officer (COO) - Los Angeles Department of Water and Power (LADWP)

November 2022 - Present

- Work with the General Manager on all facets of LADWP's operations, policies, budget, and goals.
- Directly oversee the Senior Assistant General Manager(s) over the Power System and assist in shepherding the evolutionary plans and goals of that system.
- Provide executive leadership and strategic direction to LADWP's Power System, ensuring the reliable delivery of clean energy to customers in the Los Angeles area.
- Collaborate with LADWP's executive team to develop and implement innovative business solutions that enhance customer service and operational efficiency.

Chief Executive Officer (CEO) - Colorado Springs Utilities (CSU)

2018 - 2022

- Managed CSU through its Integrated Resource Plan to lay out the next decades of that city's energy future.
- Accelerated their resiliency and conservation efforts in the face of prolonged drought and the Colorado River crisis.
- Directed innovative business solutions to leverage fiber, technology, and modernization.

General Manager of Energy Supply - Colorado Springs Utilities (CSU)

2015 - 2018

- Oversaw energy supply operations and maintenance, including fossil and renewable generation, fuel procurement, and resource planning.
- Developed and implemented strategies to meet customer energy needs while minimizing costs and environmental impacts.
- Built a culture of safety and reliability, emphasizing employee training and engagement.

Senior Executive - Los Angeles Department of Water and Power (LADWP)

1984 - 2015

- Held various positions at LADWP, including entry-level engineer, Power System Executive Officer, and Assistant General Manager of Power System.
- Led initiatives to improve power generation efficiency and reduce emissions, resulting in significant environmental and cost benefits.
- Implemented advanced technology solutions, such as real-time monitoring and control systems, to enhance operational performance and reliability.

Education:

- Master of Business Administration (MBA) - University of La Verne
- Master of Public Administration (MPA) - California State University, Northridge
- Bachelor of Science in Engineering - California State University, Los Angeles

Certifications:

- Professional Engineer (PE) License, State of California

Skills:

- Strategic planning and execution
- Energy policy and regulation
- Utility operations and maintenance
- Leadership and team building
- Budgeting and financial management
- Environmental and sustainability initiatives
- Customer service and community engagement
- Information technology and data analysis.

Instructions and Summary

Award Number: _____
 Award Recipient: _____

Date of Submission: _____
 Form submitted by: _____
(May be award recipient or sub-recipient)

Please read the instructions on each worksheet tab before starting. If you have any questions, please ask your DOE contact!

1. If using this form for award application, negotiation, or budget revision, fill out the blank white cells in workbook tabs a. through j. with total project costs. If using this form for invoice submission, fill out tabs a. through j. with total costs for just the proposed invoice and fill out tab k. per the instructions on that tab.
2. Blue colored cells contain instructions, headers, or summary calculations and should not be modified. Only blank white cells should be populated.
3. Enter detailed support for the project costs identified for each Category line item within each worksheet tab to autopopulate the summary tab.
4. The total budget presented on tabs a. through i. must include both Federal (DOE) and Non-Federal (cost share) portions.
5. All costs incurred by the preparer's sub-recipients, vendors, and Federal Research and Development Centers (FFRDCs), should be entered only in section f. Contractual. All other sections are for the costs of the preparer only.
6. Ensure all entered costs are allowable, allocable, and reasonable in accordance with the administrative requirements prescribed in 2 CFR 200, and the applicable cost principles for each entity type: FAR Part 31 for For-Profit entities; and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.
7. Add rows as needed throughout tabs a. through j. If rows are added, formulas/calculations may need to be adjusted by the preparer. Do not add rows to the Instructions and Summary tab. If your project contains more than five budget periods, consult your DOE contact before adding additional budget period rows or columns.
8. **ALL budget period cost categories are rounded to the nearest dollar.**

BURDEN DISCLOSURE STATEMENT

Public reporting burden for this collection of information is estimated to average 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241-2 - GTN, Paperwork Reduction Project (1910-5162), U.S. Department of Energy 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget, Paperwork Reduction Project (1910-5162), Washington, DC 20503.

SUMMARY OF BUDGET CATEGORY COSTS PROPOSED

The values in this summary table are from entries made in subsequent tabs, only blank white cells require data entry

Section A - Budget Summary								
		Federal	Cost Share			Total Costs	Cost Share %	Proposed Budget Period Dates
Budget Period 1		\$3,976,710	\$0			\$3,976,710	0.00%	Example!!! 01/01/2014 - 12/31/2014
Budget Period 2		\$7,068,159	\$0			\$7,068,159	0.00%	
Budget Period 3		\$23,110,097	\$0			\$23,110,097	0.00%	
Budget Period 4		\$32,897,609	\$0			\$32,897,609	0.00%	
Budget Period 5		\$29,295,794	\$0			\$29,295,794	0.00%	
Total		\$96,348,368	\$0			\$96,348,368	0.00%	
Section B - Budget Categories								
CATEGORY	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Costs	% of Project	Comments (as needed)
a. Personnel	\$1,112,710	\$2,726,844	\$4,195,489	\$5,248,041	\$4,891,266	\$18,174,349	18.86%	
b. Fringe Benefits	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
c. Travel	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
d. Equipment	\$2,264,000	\$1,581,315	\$7,781,275	\$10,756,235	\$9,671,195	\$32,054,020	33.27%	
e. Supplies	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
f. Contractual								
Sub-recipient	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Vendor	\$600,000	\$600,000	\$3,933,333	\$3,933,333	\$3,933,333	\$12,999,999	13.49%	
FFRDC	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Contractual	\$600,000	\$600,000	\$3,933,333	\$3,933,333	\$3,933,333	\$12,999,999	13.49%	
g. Construction	\$0	\$2,160,000	\$7,200,000	\$12,960,000	\$10,800,000	\$33,120,000	34.38%	
h. Other Direct Costs	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Direct Costs	\$3,976,710	\$7,068,159	\$23,110,097	\$32,897,609	\$29,295,794	\$96,348,368	100.00%	
i. Indirect Charges	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Costs	\$3,976,710	\$7,068,159	\$23,110,097	\$32,897,609	\$29,295,794	\$96,348,368	100.00%	

Additional Explanation (as needed):

a. Personnel

INSTRUCTIONS - PLEASE READ!!!

1. List project costs solely for employees of the entity completing this form. All personnel costs for subrecipients and vendors must be included under f. Contractual.
2. All personnel should be identified by position title and not employee name. Enter the amount of time (e.g., hours or % of time) and the base pay rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., actual salary, labor distribution report, state civil service rates, etc.) must also be identified.
3. If loaded labor rates are utilized, a description of the costs the loaded rate is comprised of must be included in the Additional Explanation section below. DOE must review all components of the loaded labor rate for reasonableness and unallowable costs (e.g. fee or profit).
4. If a position and hours are attributed to multiple employees (e.g. Technician working 4000 hours) the number of employees for that position title must be identified.
5. Each budget period is rounded to the nearest dollar.

SOPO Task #	Position Title	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Project Total Hours	Project Total Dollars	Rate Basis
		Time (Hrs)	Pay Rate (\$/Hr)	Total Budget Period 1	Time (Hrs)	Pay Rate (\$/Hr)	Total Budget Period 2	Time (Hrs)	Pay Rate (\$/Hr)	Total Budget Period 3	Time (Hrs)	Pay Rate (\$/Hr)	Total Budget Period 4	Time (Hrs)	Pay Rate (\$/Hr)	Total Budget Period 5			
1	Sr. Engineer (EXAMPLE!!!)	2000	\$85.00	\$170,000	200	\$50.00	\$10,000	200	\$50.00	\$10,000	200	\$50.00	\$10,000	200	\$50.00	\$10,000	2400	\$190,000	Actual Salary
2	Technicians (2)	4000	\$20.00	\$80,000	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	4000	\$80,000	Actual Salary
	(CES2G) ITS Telecom Engineer		\$70.00	\$0	176	\$72.10	\$12,690	880	\$74.26	\$65,351	528	\$76.49	\$40,387		\$78.79	\$0	1584	\$118,428	
	(CES2G) Telecom shop technician		\$60.00	\$0	330	\$61.80	\$20,394	1650	\$63.65	\$105,029	990	\$65.56	\$64,908		\$67.53	\$0	2970	\$190,331	
	(CES2G) Drafter		\$50.00	\$0	50	\$51.50	\$2,575	250	\$53.05	\$13,261	150	\$54.64	\$8,195		\$56.28	\$0	450	\$24,032	
	(CES2G) Engineering Associate for Admin of Pilo	1000	\$80.00	\$80,000	1000	\$82.40	\$82,400	500	\$84.87	\$42,436	500	\$87.42	\$43,709	500	\$90.04	\$45,020	3500	\$293,565	
	(CES2G) Professional Services	0	\$70.00	\$0	1650	\$72.10	\$118,965	8250	\$74.26	\$612,670	4950	\$76.49	\$378,630		\$78.79	\$0	14850	\$1,110,265	
						\$0.00			\$0.00			\$0.00			\$0.00				
						\$0.00			\$0.00			\$0.00			\$0.00				
	(FIT&FIT+) Administrative Support	522	\$60.00	\$31,320	2088	\$61.80	\$129,038	2088	\$63.65	\$132,910	2088	\$65.56	\$136,897	2088	\$67.53	\$141,004	8874	\$571,169	Estimate
	(FIT&FIT+) Associate DER Program Engineer	1,044	\$80.00	\$83,520	2088	\$82.40	\$172,051	4176	\$84.87	\$354,425	4176	\$87.42	\$365,058	4176	\$90.04	\$376,010	15660	\$1,351,065	Estimate
	(FIT&FIT+) Distribution Planning Associate Engineer	522	\$80.00	\$41,760	2088	\$82.40	\$172,051	2088	\$84.87	\$177,213	2088	\$87.42	\$182,529	2088	\$90.04	\$188,005	8874	\$761,558	Estimate
	(FIT&FIT+) Service Planning Design Engineer	1,044	\$80.00	\$83,520	2,088	\$82.40	\$172,051	4,176	\$84.87	\$354,425	4,176	\$87.42	\$365,058	4,176	\$90.04	\$376,010	15660	\$1,351,065	Estimate
	(FIT&FIT+) Electric Service Representative	522	\$70.00	\$36,540	1044	\$72.10	\$75,272	2088	\$74.26	\$155,061	2088	\$76.49	\$159,713	2088	\$78.79	\$164,504	7830	\$591,091	Estimate
	(FIT&FIT+) Associate DER Program Supervisor	522	\$85.00	\$44,370	1044	\$87.55	\$91,402	1044	\$90.18	\$94,144	1044	\$92.88	\$96,969	1044	\$95.67	\$99,878	4698	\$426,763	Estimate
	(FIT&FIT+) Professional Services	0	\$70.00	\$0	3300	\$72.10	\$237,930	8250	\$74.26	\$612,670	24750	\$76.49	\$1,893,150	24750	\$78.79	\$1,949,944	61050	\$4,693,693	Estimate
				\$0			\$0			\$0			\$0			\$0	0	\$0	
	(SRP) Electric Mechanic support	3520	\$75.00	\$264,000	10400	\$77.25	\$803,400	10400	\$79.57	\$827,502	10400	\$81.95	\$852,327	10400	\$84.41	\$877,897	45120	\$3,625,126	Estimate
	(SRP) Roofer support	1320	\$50.00	\$66,000	1800	\$51.50	\$92,700	1800	\$53.05	\$95,481	1800	\$54.64	\$98,345	1800	\$56.28	\$101,296	8520	\$453,822	Actual Salary
	(SRP) DER Program Engineer	550	\$80.00	\$44,000	1625	\$82.40	\$133,900	1625	\$84.87	\$137,917	1625	\$87.42	\$142,055	1625	\$90.04	\$146,316	7050	\$604,188	Actual Salary
	(SRP) Safety Support	880	\$82.00	\$72,160	1200	\$84.46	\$101,352	1200	\$86.99	\$104,393	1200	\$89.60	\$107,524	1200	\$92.29	\$110,750	5680	\$496,179	Actual Salary
	(SRP) Solar Power Engineering Design	264	\$80.00	\$21,120	780	\$82.40	\$64,272	780	\$84.87	\$66,200	780	\$87.42	\$68,186	780	\$90.04	\$70,232	3384	\$290,010	Actual Salary
																		\$5,469,325	
	(DR) Project Manager - DRMS Integration	2080	\$80.00	\$166,400	2080	\$80.00	\$166,400	2080	\$80.00	\$166,400	2080	\$80.00	\$166,400	2080	\$80.00	\$166,400	10400	\$832,000	
	(DR) Program Manager - C&I Program	520	\$75.00	\$39,000	520	\$75.00	\$39,000	520	\$75.00	\$39,000	520	\$75.00	\$39,000	520	\$75.00	\$39,000	2600	\$195,000	
	(DR) Program Manager - Residential Program	520	\$75.00	\$39,000	520	\$75.00	\$39,000	520	\$75.00	\$39,000	520	\$75.00	\$39,000	520	\$75.00	\$39,000	2600	\$195,000	
				\$0			\$0			\$0			\$0			\$0	0	\$0	
	Total Personnel Costs	14830		\$1,112,710	35871		\$2,726,844	54365		\$4,195,489	66453		\$5,248,041	59835		\$4,891,266	231354	\$18,174,349	

9,746,403
13,320,000
26640000
\$49,706,403

Additional Explanation (as needed):

b. Fringe Benefits

INSTRUCTIONS - PLEASE READ!!!

1. Fill out the table below by position title. If all employees receive the same fringe benefits, you can show "Total Personnel" in the Labor Type column instead of listing out all position titles.
2. The rates and how they are applied should not be averaged to get one fringe cost percentage. Complex calculations should be described/provided in the Additional Explanation section below.
3. The fringe benefit rates should be applied to all positions, regardless of whether those funds will be supported by Federal Share or Recipient Cost Share.
4. Each budget period is rounded to the nearest dollar.

Labor Type	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Total Project
	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	
EXAMPLE!!! Sr. Engineer	\$170,000	20%	\$34,000	\$10,000	20%	\$2,000	\$10,000	20%	\$2,000	\$10,000	20%	\$2,000	\$10,000	20%	\$2,000	\$38,000
			\$0			\$0			\$0			\$0			\$0	\$0
			\$0			\$0			\$0			\$0			\$0	\$0
			\$0			\$0			\$0			\$0			\$0	\$0
			\$0			\$0			\$0			\$0			\$0	\$0
Total:	\$0		\$0	\$0		\$0	\$0		\$0	\$0		\$0	\$0		\$0	\$0

A federally approved fringe benefit rate agreement, or a proposed rate supported and agreed upon by DOE for estimating purposes is required at the time of award negotiation if reimbursement for fringe benefits is requested. Please check (X) one of the options below and provide the requested information if not previously submitted.

A fringe benefit rate has been negotiated with, or approved by, a federal government agency. A copy of the latest rate agreement is/was included with the project application.*

There is not a current federally approved rate agreement negotiated and available.**

*Unless the organization has submitted an indirect rate proposal which encompasses the fringe pool of costs, please provide the organization's benefit package and/or a list of the components/elements that comprise the fringe pool and the cost or percentage of each component/element allocated to the labor costs identified in the Budget Justification (Form EERE 335.1).

**When this option is checked, the entity preparing this form shall submit an indirect rate proposal in the format provided in the Sample Rate Proposal at <http://www1.eere.energy.gov/financing/resources.html>, or a format that provides the same level of information and which will support the rates being proposed for use in the performance of the proposed project.

Additional Explanation (as necessary): Please use this box (or an attachment) to list the elements that comprise your fringe benefits and how they are applied to your base (e.g. Personnel) to arrive at your fringe benefit rate.

c. Travel

INSTRUCTIONS - PLEASE READ!!!

1. Identify Foreign and Domestic Travel as separate items. Examples of Purpose of Travel are subrecipient site visits, DOE meetings, project mgmt. meetings, etc. Examples of Basis for Estimating Costs are past trips, travel quotes, GSA rates, etc.
2. All listed travel must be necessary for performance of the Statement of Project Objectives.
3. Federal travel regulations are contained within the applicable cost principles for all entity types. Travel costs should remain consistent with travel costs incurred by an organization during normal business operations as a result of the organizations written travel policy. In absence of a written travel policy, organizations must follow the regulations prescribed by the General Services Administration.
4. Each budget period is rounded to the nearest dollar.

SOPO Task #	Purpose of Travel	Depart From	Destination	No. of Days	No. of Travelers	Lodging per Traveler	Flight per Traveler	Vehicle per Traveler	Per Diem Per Traveler	Cost per Trip	Basis for Estimating Costs
Domestic Travel		Budget Period 1									
1	EXAMPLE!!! Visit to PV manufacturer			2	2	\$250	\$500	\$100	\$160	\$2,020	Current GSA rates
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 1 Total									\$0	
Domestic Travel		Budget Period 2									
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 2 Total									\$0	
Domestic Travel		Budget Period 3									
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 3 Total									\$0	
Domestic Travel		Budget Period 4									
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 4 Total									\$0	
Domestic Travel		Budget Period 5									
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 5 Total									\$0	
	PROJECT TOTAL									\$0	

Additional Explanation (as needed):

e. Supplies

INSTRUCTIONS - PLEASE READ!!!

1. Supplies are generally defined as an item with an acquisition cost of \$5,000 or less and a useful life expectancy of less than one year. Supplies are generally consumed during the project performance. Please refer to the applicable Federal regulations in 2 CFR 200 for specific supplies definitions and treatment.
2. List all proposed supplies below, providing a basis of costs (e.g. vendor quotes, catalog prices, prior invoices, etc.). Briefly justify the need for the Supplies as they apply to the Statement of Project Objectives. Note that Supply items must be direct costs to the project at this budget category, and not duplicative of supply costs included in the indirect pool that is the basis of the indirect rate applied for this project.
3. Multiple supply items valued at \$5,000 or less used to assemble an equipment item with a value greater than \$5,000 with a useful life of more than one year should be included on the equipment tab. If supply items and costs are ambiguous in nature, contact your DOE representative for proper categorization.
4. Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.
5. Each budget period is rounded to the nearest dollar.

SOPO Task #	General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
4,6	EXAMPLE!!! Wireless DAS components	10	\$360.00	\$3,600	Catalog price	For Alpha prototype - Task 2.4
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 1 Total				\$0		
Budget Period 2						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 2 Total				\$0		
Budget Period 3						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 3 Total				\$0		
Budget Period 4						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 4 Total				\$0		
Budget Period 5						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 5 Total				\$0		
PROJECT TOTAL				\$0		

Additional Explanation (as needed):

f. Contractual

INSTRUCTIONS - PLEASE READ!!!

1. The entity completing this form must provide all costs related to subrecipients, vendors, and FFRDC partners in the applicable boxes below.
2. Subrecipients (partners, sub-awardees): Subrecipients shall submit a Budget Justification describing all project costs and calculations when their total proposed budget exceeds either (1) \$100,000 or (2) 50% of total award costs. These subrecipient forms may be completed by either the subrecipients themselves or by the preparer of this form. The budget totals on the subrecipient's forms must match the subrecipient entries below. A subrecipient is a legal entity to which a subaward is made, who has performance measured against whether the objectives of the Federal program are met, is responsible for programmatic decision making, must adhere to applicable Federal program compliance requirements, and uses the Federal funds to carry out a program of the organization. All characteristics may not be present and judgment must be used to determine subrecipient vs. vendor status.
3. Vendors (including contractors): List all vendors and contractors supplying commercial supplies or services used to support the project. For each Vendor cost with total project costs of \$250,000 or more, a Vendor quote must be provided. A vendor is a legal entity contracted to provide goods and services within normal business operations, provides similar goods or services to many different purchasers, operates in a competitive environment, provides goods or services that are ancillary to the operation of the Federal program, and is not subject to compliance requirements of the Federal program. All characteristics may not be present and judgment must be used to determine subrecipient vs. vendor status.
4. Federal Funded Research and Development Centers (FFRDCs): FFRDCs must submit a signed Field Work Proposal during award application. The award recipient may allow the FFRDC to provide this information directly to DOE, however project costs must also be provided below.
5. Each budget period is rounded to the nearest dollar.

SOPO Task #	Sub-Recipient Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
2,4	EXAMPLE!!! XYZ Corp.	Partner to develop optimal lens for Gen 2 product. Cost estimate based on personnel hours.	\$48,000	\$32,000	\$16,000			\$96,000
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
		Sub-total	\$0	\$0	\$0	\$0	\$0	\$0

SOPO Task #	Vendor Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
6	EXAMPLE!!! ABC Corp.	Vendor for developing robotics to perform lens inspection. Estimate provided by vendor.	\$32,900	\$86,500				\$119,400
	(SRP) Community-Based Organizations (e.g. RePower LA Coalition, LAANE, etc..)	Partner for outreach. Funds will cover costs for advertisement material, outreach events, and various marketing activities like door to door outreach.	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$500,000
	(DR) Integration Service for BEMS, DRMS, DER Service Provider Platform, and DERMS	Service required to connect BEMS, DRMS, DERMS, DR Service Provider Platform, and DERMS	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,500,000
	(Managed Charing) Third-Party Aggregator	Platform required to performed manage charging operations. Incentives included in the cost.			\$3,333,333	\$3,333,333	\$3,333,333	\$9,999,999
								\$0
								\$0
		Sub-total	\$600,000	\$600,000	\$3,933,333	\$3,933,333	\$3,933,333	\$12,999,999

SOPO Task #	FFRDC Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
								\$0
								\$0
		Sub-total	\$0	\$0	\$0	\$0	\$0	\$0

Total Contractual			\$600,000	\$600,000	\$3,933,333	\$3,933,333	\$3,933,333	\$12,999,999
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Additional Explanation (as needed):

g. Construction

PLEASE READ!!!

1. Construction, for the purpose of budgeting, is defined as all types of work done on a particular building, including erecting, altering, or remodeling. Construction conducted by the award recipient is entered on this page. Any construction work that is performed by a vendor or subrecipient should be entered under f. Contractual.
2. List all proposed construction below, providing a basis of cost such as engineering estimates, prior construction, etc., and briefly justify its need as it applies to the Statement of Project Objectives.
3. Each budget period is rounded to the nearest dollar.

Overall description of construction activities: Example Only!!! - Build wind turbine platform

SOPO Task #	General Description	Cost	Basis of Cost	Justification of need
Budget Period 1				
3	EXAMPLE ONLY!!! Three days of excavation for platform site	\$28,000	Engineering estimate	Site must be prepared for construction of platform.
	Construction interconnection cost for CES2G			
	Budget Period 1 Total	\$0		
Budget Period 2				
	Construction interconnection cost for CES2G	\$720,000	Construction labor costs for 2 SSIAB	
	Construction interconnection cost for FiT/FiT+	\$1,440,000	Construction labor costs for 4 SSIABs	
	Budget Period 2 Total	\$2,160,000		
Budget Period 3				
	Construction interconnection cost for CES2G	\$3,600,000	Construction labor costs for 10 SSIABs	
	Construction interconnection cost for FiT/FiT+	\$3,600,000	Construction labor costs for 10 SSIABs	
	Budget Period 3 Total	\$7,200,000		
Budget Period 4				
	Construction interconnection cost for CES2G	\$2,160,000	Construction labor costs for 6 SSIABs	
	Construction interconnection cost for FiT/FiT+	\$10,800,000	Construction labor costs for 30 SSIABs	
	Budget Period 4 Total	\$12,960,000		
Budget Period 5				
	Construction interconnection cost for CES2G			
	Construction interconnection cost for FiT/FiT+	\$10,800,000	Construction labor costs for 30 SSIABs	
	Budget Period 5 Total	\$10,800,000		
	PROJECT TOTAL	\$33,120,000		

\$26,640,000

Additional Explanation (as needed):

h. Other Direct Costs

INSTRUCTIONS - PLEASE READ!!!

1. Other direct costs are direct cost items required for the project which do not fit clearly into other categories. These direct costs must not be included in the indirect costs (for which the indirect rate is being applied for this project). Examples are: tuition, printing costs, etc. which can be directly charged to the project and are not duplicated in indirect costs (overhead costs).
2. Basis of cost are items such as vendor quotes, prior purchases of similar or like items, published price list, etc.
3. Each budget period is rounded to the nearest dollar.

SOPO Task #	General Description and SOPO Task #	Cost	Basis of Cost	Justification of need
Budget Period 1				
5	EXAMPLE!!! Grad student tuition - tasks 1-3	\$16,000	Established UCD costs	Support of graduate students working on project
Budget Period 1 Total		\$0		
Budget Period 2				
Budget Period 2 Total		\$0		
Budget Period 3				
Budget Period 3 Total		\$0		
Budget Period 4				
Budget Period 4 Total		\$0		
Budget Period 5				
Budget Period 5 Total		\$0		
PROJECT TOTAL		\$0		

Additional Explanation (as needed):

i. Indirect Costs

INSTRUCTIONS - PLEASE READ!!!

1. Fill out the table below to indicate how your indirect costs are calculated. Use the box below to provide additional explanation regarding your indirect rate calculation.
2. The rates and how they are applied should not be averaged to get one indirect cost percentage. Complex calculations or rates that do not correspond to the below categories should be described/provided in the Additional Explanation section below. If questions exist, consult with your DOE contact before filling out this section.
3. The indirect rate should be applied to both the Federal Share and Recipient Cost Share.
4. Each budget period is rounded to the nearest dollar.

	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total	Explanation of BASE
Provide ONLY Applicable Rates:							
Overhead Rate	0.00%	0.00%	0.00%	0.00%	0.00%		
General & Administrative (G&A)	0.00%	0.00%	0.00%	0.00%	0.00%		
FCCM Rate, if applicable	0.00%	0.00%	0.00%	0.00%	0.00%		
OTHER Indirect Rate	0.00%	0.00%	0.00%	0.00%	0.00%		
Indirect Costs (As Applicable):							
Overhead Costs						\$0	
G&A Costs						\$0	
FCCM Costs, if applicable						\$0	
OTHER Indirect Costs						\$0	
Total indirect costs requested:	\$0	\$0	\$0	\$0	\$0	\$0	

A federally approved indirect rate agreement, or rate proposed (supported and agreed upon by DOE for estimating purposes) is required if reimbursement of indirect costs is requested. Please check (X) one of the options below and provide the requested information if it has not already been provided as requested, or has changed.

An indirect rate has been approved or negotiated with a federal government agency. A copy of the latest rate agreement is included with this application, and will be provided electronically to the Contracting Officer for this project.

There is not a current, federally approved rate agreement negotiated and available*.

*When this option is checked, the entity preparing this form shall submit an indirect rate proposal in the format provided by your DOE contact, or a format that provides the same level of information and which will support the rates being proposed for use in performance of the proposed project. Additionally, any non-Federal entity that has never received a negotiated indirect cost rate, except for those non-Federal entities described in Appendix VII to Part 200—States and Local Government and Indian Tribe Indirect Cost Proposals, paragraph D.1.b, may elect to charge a de minimis rate of 10% of modified total direct costs (MTDC) which may be used indefinitely. As described in §200.403 Factors affecting allowability of costs, costs must be consistently charged as either indirect or direct costs, but may not be double charged or inconsistently charged as both. If chosen, this methodology once elected must be used consistently for all Federal awards until such time as a non-Federal entity chooses to negotiate for a rate, which the non-Federal entity may apply to do at any time.

You must provide an explanation (below or in a separate attachment) and show how your indirect cost rate was applied to this budget in order to come up with the indirect costs shown.

Additional Explanation (as needed): *IMPORTANT: Please use this box (or an attachment) to further explain how your total indirect costs were calculated. If the total indirect costs are a cumulative amount of more than one calculation or rate application, the explanation and calculations should identify all rates used, along with the base they were applied to (and how the base was derived), and a total for each (along with grand total).

Cost Share

PLEASE READ!!!

1. A detailed presentation of the cash or cash value of all cost share proposed must be provided in the table below. All items in the chart below must be identified within the applicable cost category tabs a. through i. in addition to the detailed presentation of the cash or cash value of all cost share proposed provided in the table below. Identify the source organization & amount of each cost share item proposed in the award.
2. Cash Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) for costs incurred and paid for during the project. This includes when an organization pays for personnel, supplies, equipment, etc. for their own company with organizational resources. If the item or service is reimbursed for, it is cash cost share. All cost share items must be necessary to the performance of the project. Any partial donation of goods or services is considered a discount and is not allowable.
3. In Kind Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) where a value of the contribution can be readily determined, verified and justified but where no actual cash is transacted in securing the good or service comprising the contribution. In Kind cost share items include volunteer personnel hours, the donation of space or use of equipment, etc. The cash value and calculations thereof for all In Kind cost share items must be justified and explained in the Cost Share Item section below. All cost share items must be necessary to the performance of the project. If questions exist, consult your DOE contact before filling out In Kind cost share in this section. Vendors may not provide cost share. Any partial donation of goods or services is considered a discount and is not allowable.
4. Funds from other Federal sources MAY NOT be counted as cost share. This prohibition includes FFRDC sub-recipients. Non-Federal sources include any source not originally derived from Federal funds. Cost sharing commitment letters from subrecipients and third parties must be provided with the original application.
5. Fee or profit, including foregone fee or profit, **are not allowable** as project costs (including cost share) under any resulting award. The project may only incur those costs that are allowable and allocable to the project (including cost share) as determined in accordance with the applicable cost principles prescribed in FAR Part 31 for For-Profit entities and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.
6. **NOTE:** A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim the resulting indirect costs as a Cost Share contribution.**
7. **NOTE:** A Recipient **cannot claim "unrecovered indirect costs"** as a Cost Share contribution, **without prior approval.**
8. **Each budget period is rounded to the nearest dollar.**

Organization/Source	Type (Cash or In Kind)	Cost Share Item	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Project Cost Share
ABC Company EXAMPLE!!!	Cash	Project partner ABC Company will provide 20 PV modules for product development at the price of \$680 per module	\$13,600					\$13,600
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
Totals			\$0	\$0	\$0	\$0	\$0	\$0

Total Project Cost: \$96,348,368

Cost Share Percent of Award:

0.0%

Additional Explanation (as needed):

Applicant Name: 0 Award Number: 0

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary							
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget			Total (g)
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)		
1. Budget Period 1				\$3,976,710	\$0		\$3,976,710
2. Budget Period 2				\$7,068,159	\$0		\$7,068,159
3. Budget Period 3				\$23,110,097	\$0		\$23,110,097
4. Budget Period 4				\$32,897,609	\$0		\$32,897,609
5. Budget Period 5				\$29,295,794	\$0		\$29,295,794
6. Totals				\$96,348,368	\$0		\$96,348,369
Section B - Budget Categories							
6. Object Class Categories	Grant Program, Function or Activity					Total (5)	
	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5		
a. Personnel	\$1,112,710	\$2,726,844	\$4,195,489	\$5,248,041	\$4,891,266	\$18,174,349	
b. Fringe Benefits	\$0	\$0	\$0	\$0	\$0	\$0	
c. Travel	\$0	\$0	\$0	\$0	\$0	\$0	
d. Equipment	\$2,264,000	\$1,581,315	\$7,781,275	\$10,756,235	\$9,671,195	\$32,054,020	
e. Supplies	\$0	\$0	\$0	\$0	\$0	\$0	
f. Contractual	\$600,000	\$600,000	\$3,933,333	\$3,933,333	\$3,933,333	\$12,999,999	
g. Construction	\$0	\$2,160,000	\$7,200,000	\$12,960,000	\$10,800,000	\$33,120,000	
h. Other	\$0	\$0	\$0	\$0	\$0	\$0	
i. Total Direct Charges (sum of 6a-6h)	\$3,976,710	\$7,068,159	\$23,110,097	\$32,897,609	\$29,295,794	\$96,348,368	
j. Indirect Charges	\$0	\$0	\$0	\$0	\$0	\$0	
k. Totals (sum of 6i-6j)	\$3,976,710	\$7,068,159	\$23,110,097	\$32,897,609	\$29,295,794	\$96,348,368	
7. Program Income						\$0	



Los Angeles
Department of
Water & Power

Clean Grid Innovation Program

Cost: \$48 million from the DOE with a 50% cost share for a \$96 million project total cost

Key Idea: Los Angeles Department of Water and Power (LADWP) is prohibited by state law from providing extra incentives to disadvantaged communities (DACs). LADWP seeks to use DOE funds primarily to provide additional financial incentives for customer program participants in DACs

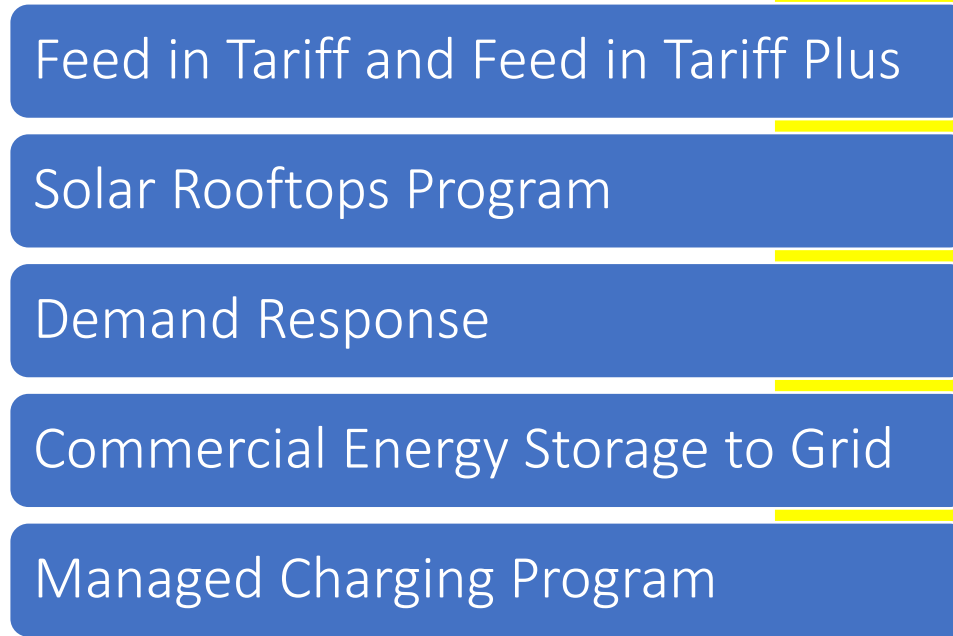
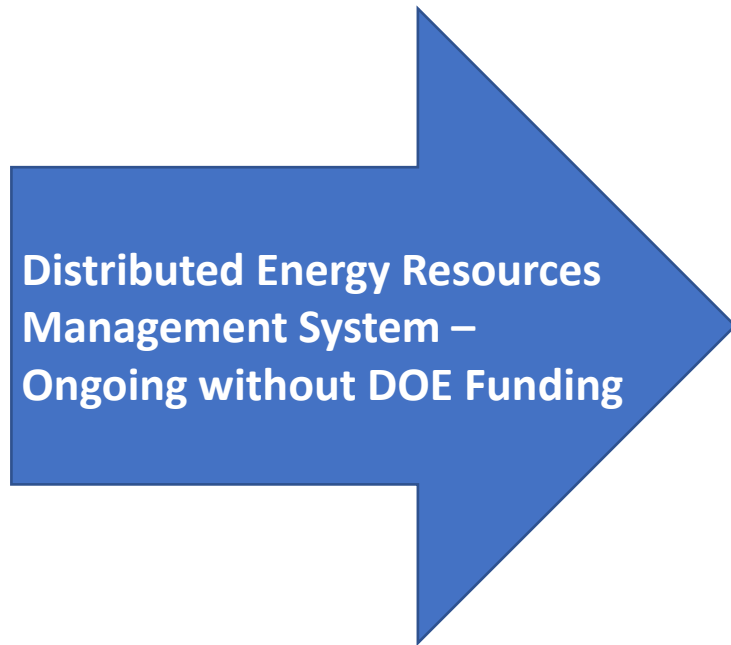
Project Goals: LADWP will expand or create new, state of the art, customer programs. All these customer programs will be integrated into LADWP's Distributed Energy Resource Management System. This will add 150 MW of distributed and dispatchable capacity to increase grid flexibility, grid reliability, and grid resilience

Key Personnel: Aram Benyamin, *Chief Operating Officer*; Brian Wilbur Sr. Assistant General Manager; Jason Rondou, *Director of Power System Planning*; Winifred Yancy, *Director of Power New Business and Electrification*; Robert Gonzalez, *Director of Power Supply Operations*



Los Angeles
Department of
Water & Power

Clean Grid Innovation Program: Structure



150 MW
of new
resources
to make
the grid
resilient
and
flexible

The LADWP deployed Distributed Energy Resource Management System will enable grid operators to dispatch participants in the new and expanded programs. LADWP's existing 600 megawatts plus of renewable distributed energy resources are not controllable or visible to grid operators. DOE funding will empower LADWP to improve program participation in DACs and enable LADWP's unionized workforce to aggregate and dispatch renewable resources.



**Los Angeles
Department of
Water & Power**

Clean Grid Innovation Program: Goals

Program Name	Description	Targeted Customer	Baseline Status	DOE Impact
Feed In Tariff and Feed in Tariff Plus	Customers are paid for energy put onto the grid. No self consumption allowed.	Small and large commercial with >30 kW of solar power.	Has deployed over 100 MW of solar power since 2013.	Expand capacity by 100 MW and add additional interconnection rebates for DACs
Solar Rooftop Programs	LADWP leases rooftops to install small solar power systems	Residential and <10 kW	Has deployed 32 systems since 2017	Expand to 710 kW of solar and 1080 kWh of energy storage. DACs will be able to use energy storage for backup power.
Demand Response	A manual commercial and semi-automatic residential demand response program.	Commercial, Industrial, and residential	Residential program has 48,000 participating thermostats, and the commercial program reduced load by 48 MW in a near outage in 2022.	Provide 3,000+ free thermostats to customers in DACs. Assist with building and energy management system installations at 100 schools and 6 community colleges.
Commercial Energy Storage to Grid Pilot	First in the nation pilot program to use electric vehicles for grid services	Commercial electric vehicle fleets	Seeking LADWP Board approval to launch program in 2023.	Increase interconnection cost rebates for customers in DACs.
Managed Charging Program	Managed electric vehicle charging to reduce system peaks	Residential	Seeking LADWP Board approval to launch program in 2023.	Expand program to include commercial customers, and half of new commercial customers will be from DACs and receive a larger incentive payment.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. INSTRUCTIONS

The proposer shall prepare this Environmental Questionnaire (EQ) as accurately and completely as possible. Supporting information can be provided as attachments. The proposer must identify the location of the project and specifically describe the activities that would occur at that location. The proposer must provide specific information and quantities, regarding air emissions, wastewater discharges, solid wastes, etc., to facilitate the necessary review. In addition, the proposer must submit with this EQ a FINAL copy of the project's statement of work (SOW) or statement of project objective (SOPO) that will be used in the contract/agreement between the proposer and the U.S Department of Energy (DOE).

II. QUESTIONNAIRE

A. PROJECT SUMMARY

1. Solicitation/Project Number: DE-FOA-0002470 Proposer: Los Angeles Department of Water and Power
2. This Environmental Questionnaire pertains to a: Recipient or Prime Contractor Sub-recipient or Subcontractor
3. Principal Investigator: Arash Saidi Telephone Number: 213-367-4886
4. Project Title: Expanding Distribution System Visibility and the Ability to Dispatch Distributed
5. Expected Project Duration: 1/1/2023 - 12/31/2027
6. Location of Activities covered by **this** Environmental Questionnaire: (City/Township, County, State):
Los Angeles, Los Angeles County, California
7. List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).
In order to meet City and State renewable energy goals, and at the same time provide reliable energy to our rate payers, we are launching the Community Grid Innovation Program (CGIP). CGIP consists of two primary components: 1) a Distributed Energy Resource Management System (DERMS) to aggregate Distributed Energy Resources (DERs) to provide
8. List all other locations where work would be performed by the primary contractor of the project and subcontractor(s). Each of the following must have an individual Environmental Questionnaire.

Subcontractor or sub-recipient	Location of activities for this project

9. Identify and select the checkbox with the predominant project work activities under Group A, B, or C

Group A

- Routine administrative, procurement, training, and personnel actions. Contract activities/awards for management support, financial assistance, and technical services in support of agency business, programs, projects, and goals. Literature searches and information gathering, material inventories, property surveys; data analysis, computer modeling, analytical reviews, technical summary, conceptual design, feasibility studies, document preparation, data dissemination, and paper studies. Technical assistance including financial planning, assistance, classroom training, public meetings, management training, survey participation, academic contribution, technical consultation, and stakeholders surveys. Workshop and conference planning, preparation, and implementation which may involve promoting energy efficiency, renewable energy, and energy conservation.

STOP! If all work activities related to this project can be classified and described within categories under Group A, proceed directly to Section III CERTIFICATION BY PROPOSER. No additional information is required. If project work activities are described in either Group(s) B or C; then continue filling out questionnaire.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

Group B

- Laboratory Scale Research, Bench Scale Research, Pilot Scale Research, Proof-of-Concept Scale Research, or Field Test Research. Work DOES NOT involve new building/facilities construction and site excavation/groundbreaking activities. This work typically involves routine operation of existing laboratories, commercial buildings/properties, offices and homes, project test facilities, factories/power plants, vehicles test stands and components, refueling facilities, utility systems, or other existing structures/facilities. Work will NOT involve major change in facilities missions and operations, land use planning, new/modified regulatory/operating permit requirements. Includes work specific to routine DOE Site operations and Lab research work activities, but NOT building construction and site preparation. DOE work typically involves laboratory facilities and lab equipment operations, buildings and grounds management activities; and buildings and facilities maintenance, repairs, reconfiguration, remodeling, equipment use and replacement.

Group C

- Pilot Test Facilities Construction, Pilot Scale Research, Field Scale Demonstration, or Commercial Scale Application. Work typically involves facility construction, site preparation/excavation/groundbreaking, and/or demolition. This work would include construction, retrofit, replacement, and/or major modifications of laboratories, test facilities, energy system prototypes, and power generation infrastructure. Work may also involve construction and maintenance of utilities system right-of-ways, roads, vehicle test facilities, commercial buildings/properties, fuel refinery/mixing facilities, refueling facility, power plants, underground wells, and pipelines, and other types of energy research related facilities. This work may require new or modified regulatory permits, environmental sampling and monitoring requirements, master planning, public involvement, and environmental impact review. Includes work specific to DOE Site Operations and Lab operation activities involving building and facilities construction, replacement, decommissioning/demolition, site preparation, land use changes, or change in research facilities mission or operations.

B. PROPOSED PROJECT ALTERNATIVES

1. If applicable, list any project alternatives considered to achieve the project objectives.
N/A

C. PROJECT LOCATION

1. Provide a brief description of the project location (physical location, surrounding area, adjacent structures).
Primary work at the Los Angeles Department of Water and Power Headquarters in downtown Los Angeles, with minimal field work being done throughout our service area (see map)
2. Attach a project site location map of the project work area.
Map attached

D. ENVIRONMENTAL IMPACTS

NEPA procedures require evaluations of possible effects (including land use, energy resource use, natural, historic and cultural resources, and pollutants) from proposed projects on the environment.

1. Land Use

- a. Characterize present land use where the proposed project would be located.

<input checked="" type="checkbox"/> Urban	<input checked="" type="checkbox"/> Industrial	<input checked="" type="checkbox"/> Commercial	<input type="checkbox"/> Agricultural
<input checked="" type="checkbox"/> Suburban	<input type="checkbox"/> Rural	<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Research Facilities
<input type="checkbox"/> Forest	<input checked="" type="checkbox"/> University Campus	<input type="checkbox"/> Other:	_____

- b. Identify the total size of the facility, structure, or system and what portion would be used for the proposed project.
Work at headquarters building will be technology based (hardware and software). Field work will be located throughout our service area at locations of varying size and structure.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

c. Describe planned construction, installation, and/or demolition activities, i.e., roads, utilities system right-of-ways, parking lots, buildings, laboratories, storage tanks, fueling facilities, underground wells, pipelines, or other structures.

No construction would be anticipated for this project.

Rooftop solar installation, line extensions, installation of interconnections, transformers, batteries and electric vehicle chargers.

d. Describe how land use would be affected by operational activities associated with the proposed project.

No land areas would be affected.

e. Describe any plans to reclaim areas that would be affected by the proposed project.

No land areas would be affected.

f. Would the proposed project affect any unique or unusual landforms (e.g., cliffs, waterfalls, etc.)?

No Yes (describe)

g. Would the proposed project be located in or near local, state, or federal parks; forests; monuments; scenic waterways; wilderness; recreation facilities; or tribal lands? No Yes (describe)

2. Construction Activities and/or Operation

a. Identify project structure(s), power line(s), pipeline(s), utilities system(s), right-of-way(s) or road(s) that will be constructed and clearly mark them on a project site map or topographic map as appropriate. None

Citywide service and distribution area.

b. Would the proposed project require the construction of waste pits or settling ponds?

No Yes (describe and identify location, and estimate surface area disturbed)

c. Would the proposed project affect any existing body of water? No Yes (describe)

d. Would the proposed project impact a floodplain or wetland? No Yes (describe)

e. Would the proposed project potentially cause runoff/sedimentation/erosion? No Yes (describe)

f. Would the proposed project include activities located on perma-frost, near fault zones, or involve fracturing, well drilling, geologic stimulation, sequestration, active seismic data collection, and/or deepwater operations?

No Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

- g. Would the proposed project involve any of the following: nanotechnology; recombinant DNA or genetic engineering; facility decommissioning or disposition of equipment/materials; or management of radioactive wastes/materials?
 No Yes (describe)

3. Biological Resources

- a. Identify any State or Federally listed endangered or threatened plant or animal species potentially affected by the proposed project.

None

- b. Would any designated critical habitat be affected by the proposed project? No Yes (describe)

- c. Describe any impacts that construction would have on any other types of sensitive or unique habitats.

No planned construction No habitats None Impact (describe)

- d. Would any foreign substances/materials be introduced into ground or surface waters, soil, or other earth/geologic resource because of project activities? How would these foreign substances/materials affect the water, soil, biota, and geologic resources? No Yes (describe)

- e. Would any migratory animal corridors be impacted or disrupted by the proposed project? No Yes (describe)

4. Socioeconomic and Infrastructure Conditions

- a. Would local socio-economic changes result from the proposed project? No Yes (describe)

- b. Would the proposed project generate increased traffic use of roads through local neighborhoods, urban or rural areas?
 No Yes (describe)

- c. Would the proposed project require new transportation access (roads, rail, etc.)? Describe location, impacts, costs.
 No Yes (describe)

- d. Would the proposed project create a significant increase in local energy usage? No Yes (describe)
Deployment of electric vehicle chargers will increase local energy usage, depending on number of electric vehicles in a given area.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

5. Historical/Cultural Resources

a. Describe any historical, archaeological, or cultural sites in the vicinity of the proposed project; note any sites included on the National Register of Historic Places. None

b. Would construction or operational activities planned under the proposed project disturb any historical, archaeological, or cultural sites? No planned construction No historic sites Yes (describe) No Impact (discuss)

c. Has the State Historic Preservation Office been contacted with regard to this project? No Yes (describe)

d. Would the proposed project interfere with visual resources (e.g., eliminate scenic views) or alter the present landscape? No Yes (describe)

e. Would the proposed project be located on or adjacent to tribal lands, lands considered to be sacred, or lands used for traditional purposes? Describe any known tribal sensitivities for the proposed project area.
 N/A

6. Atmospheric Conditions/Air Quality

a. Identify air quality conditions in the immediate vicinity of the proposed project with regard to attainment of National Ambient Air Quality Standards (NAAQS). This information is available under the Green Book Non-Attainment Areas for Criteria Pollutants located at <http://www.epa.gov/air/oaqps/greenbk/astate.html>

	Attainment	Non-Attainment
O ₃ - 1 Hour	<input type="checkbox"/>	<input checked="" type="checkbox"/>
O ₃ - 8 Hour	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SO _x	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PM - 2.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PM - 10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CO	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NO ₂	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lead	<input type="checkbox"/>	<input checked="" type="checkbox"/>

b. Would proposed project require issuance of new or modified local, state, or federal air permits to perform project related work and activities? No Yes (describe)

c. Would the proposed project be in compliance with local and state air quality requirements? Yes
 If not, please explain.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

- d. Would the proposed project be classified as either a New Source or a major modification to an existing source?
 No Yes (describe)

[Yellowed area for response to question d.]

- e. What types of air emissions, including fugitive emissions, would be anticipated from the proposed project, and what would be the maximum annual rate of emissions for the project?

	Maximum per Year	Total for Project
<input type="checkbox"/> SO _x		
<input type="checkbox"/> NO _x		
<input type="checkbox"/> PM - 2.5		
<input type="checkbox"/> PM - 10		
<input type="checkbox"/> CO		
<input type="checkbox"/> CO ₂		
<input type="checkbox"/> Lead		
<input type="checkbox"/> H ₂ S		
<input type="checkbox"/> Organic solvent vapors or other volatile organic compounds--List:		
[Yellowed area for response to organic solvent vapors]		
<input type="checkbox"/> Hazardous air pollutants -- List:		
[Yellowed area for response to hazardous air pollutants]		
<input type="checkbox"/> Other -- List:		
[Yellowed area for response to other pollutants]		
<input checked="" type="checkbox"/> None		

- f. Would any types of emission control or particulate collection devices be used?
 No Yes (describe, including collection efficiencies)

[Yellowed area for response to question f.]

- g. How would emissions be vented?
 N/A

[Yellowed area for response to question g.]

7. Hydrologic Conditions/Water Quality

- a. What nearby water bodies may be affected by the proposed project? Provide distance(s) from the project site.
 N/A

[Yellowed area for response to question 7a.]

- b. What sources would supply potable and process water for the proposed project?
 N/A

[Yellowed area for response to question 7b.]

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

c. Quantify the wastewater that would be generated by the proposed project.

	Gallons/day	Gallons/year
<input type="checkbox"/> Non-contact cooling water		
<input type="checkbox"/> Process water		
<input type="checkbox"/> Sanitary		
<input type="checkbox"/> Other -- describe:		
<input checked="" type="checkbox"/> None		

d. What would be the major components of each type of wastewater (e.g., coal fines)? No wastewater produced

e. Identify the local treatment facility that would receive wastewater from the proposed project.

No discharges to local treatment facility

f. Describe how wastewater would be collected and treated. No wastewater produced

g. Would any run-off or leachates be produced from storage piles or waste disposal sites? No Yes (describe source)

h. Would project require issuance of new or modified water permits to perform project work or site development activities?

No Yes (describe)

i. Where would wastewater effluents from the proposed project be discharged? No wastewater produced

j. Would the proposed project be permitted to discharge effluents into an existing body of water?

No Yes (describe water use and effluent impact)

k. Would a new or modified National Pollutant Discharge Elimination System (NPDES) permit be required?

No Yes (describe)

l. Would the proposed project adversely affect the quality or movement of groundwater? No Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

m. Would the proposed project require issuance of an [Underground Injection Control \(UIC\)](#) permit?

- No Yes (describe)

n. Would the proposed project be located in or near a wellhead protection area, drinking water protection area, or above a sole source aquifer or underground source of drinking water (USDW)?

- No Yes (describe)

8. Solid and Hazardous Wastes

a. Identify and estimate wastes that would be generated from the project. Solid wastes are defined as any solid, liquid, semi-solid, or contained gaseous material that is discarded, has served its intended purpose, or is a manufacturing or mining by-product (See [EPA Municipal Solid Waste](#) and [Municipal Solid Waste by State](#)).

	Annual Quantity
<input type="checkbox"/> Municipal solid waste (e.g., paper, plastic, etc.)	
<input type="checkbox"/> Coal or coal by-products	
<input type="checkbox"/> Other -- Identify:	
<input checked="" type="checkbox"/> Hazardous waste – Identify: lead covered wires	tbd
<input type="checkbox"/> None	

b. Would project require issuance of new or modified solid waste and/or hazardous waste related permits to perform project work activities? No Yes (explain)

c. How and where would solid waste disposal be accomplished?

- None generated
 On-site (identify and describe location)
 Off-site (identify location and describe facility and treatment)

Clean Harbors Buttonwillow Landfill, 2500 W. Lokern Road, Buttonwillow, CA 93206

d. How would wastes for disposal be transported?

Department policy requires that routinely-generated lead contaminated debris be handled by an on-site contractor, with all required local and state environmental approvals.

e. Describe hazardous wastes that would be generated, treated, handled, or stored under this project. Hazardous waste information can be found at [EPA Hazardous Waste](#) website. None

Lead contaminated wires distribution wires.

f. How would hazardous or toxic waste be collected and stored? None used or produced

N/A

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

- g. If hazardous wastes would require off-site disposal, have arrangements been made with a certified TSD (Treatment, Storage, and Disposal) facility?
 Not required Arrangements not yet made Arrangements made with a certified TSD facility (identify)
Clean Harbors Buttonwillow Landfill, 2500 W. Lokern Road, Buttonwillow, CA 93206

9. Health/Safety Factors

- a. Identify hazardous or toxic materials that would be used in the proposed project.
 None Hazardous or toxic materials that would be used (identify):
- b. Describe the potential impacts of this project's hazardous materials on human health and the environment.
 None
- c. Would there be any special physical hazards or health risks associated with the project? No Yes (describe)
- d. Does a worker safety program exist at the location of the proposed project? No Yes (describe)
Department and Union Health and Safety Policies are enforced, including training.
Department also strickly follows a Injury and Illness Prevention Plan.
- e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?
 No Yes (describe)
New technology training
- f. Describe any increases in ambient noise levels to the public from construction and operational activities.
 None Increase in ambient noise level (describe)
- g. Would project construction result in the removal of natural or other barriers that act as noise screens?
 No construction planned No Yes (describe)
- h. Would hearing protection be required for workers? No Yes (describe)
Standard safety equipment, including but not limited to earplugs and safety headphones
10. Environmental Restoration and/or Waste Management
- a. Would the proposed project include CERCLA removals or similar actions under RCRA or other authorities?
 No Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

- b. Would the proposed project include siting, construction, and operation of temporary pilot-scale waste collection and treatment facilities or pilot-scale waste stabilization and containment facilities? No Yes (describe)
- c. Would the proposed project involve operations of environmental monitoring and control systems? No Yes (describe)
- d. Would the proposed project involve siting, construction, operation, or decommissioning of a facility for storing packaged hazardous waste for 90 days or less? No Yes (describe)

E. REGULATORY COMPLIANCE

1. For the following laws, describe any existing permits, new or modified permits, manifests, responsible authorities or agencies, contacts, etc., that would be required for the proposed project
- a. Resource Conservation and Recovery Act (RCRA): None New Required Modification Required
Describe:
- b. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):
 None New Required Modification Required
Describe:
- c. Toxic Substance Control Act (TSCA): None New Required Modification Required
Describe:
- d. Clean Water Act (CWA): None New Required Modification Required
Describe:
- e. Underground Storage Tank Control Program (UST): None New Required Modification Required
Describe:
- f. Underground Injection Control Program (UIC): None New Required Modification Required
Describe:
- g. Clean Air Act (CAA): None New Required Modification Required
Describe:

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

h. Endangered Species Act (ESA): None New Required Modification Required
Describe:

i. [Floodplains and Wetlands Regulations](#): None New Required Modification Required
Describe:

j. Fish and Wildlife Coordination Act (FWCA): None New Required Modification Required
Describe:

k. National Historic Preservation Act (NHPA): None New Required Modification Required
Describe:

l. Coastal Zone Management Act (CZMA): None New Required Modification Required
Describe:

2. Identify any other environmental laws and regulations (Federal, state, and local) for which compliance would be necessary for this project, and describe the permits, manifests, and contacts that would be required.
N/A

F. DESCRIBE ANY ISSUES THAT WOULD GENERATE PUBLIC CONTROVERSY REGARDING THE PROPOSED PROJECT. None

G. WOULD THE PROPOSED PROJECT PRODUCE ADDITIONAL DEVELOPMENT, OR ARE OTHER MAJOR DEVELOPMENTS PLANNED OR UNDERWAY, IN THE PROJECT AREA?
 No Yes (describe)

H. SUMMARIZE THE SIGNIFICANT IMPACTS THAT WOULD RESULT FROM THE PROPOSED PROJECT.
 None (provide supporting detail) Significant impacts (describe)
Project will reduce pollution by promoting and facilitating electric vehicle adoption over internal combustion engines, and other components of the project (solar, batteries, etc) will further decrease green house gas emissions from fossil fuel power generation.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. PROVIDE A DESCRIPTION OF HOW THE PROJECT WOULD BE DECOMMISSIONED, INCLUDING THE DISPOSITION OF EQUIPMENT AND MATERIALS.

Standard Department salvage policies and procedures at end of equipment "life"

III. CERTIFICATION BY PROPOSER

I hereby certify that the information provided herein is current, accurate, and complete as of the date shown immediately below.

Signature: _____ Date (mm/dd/yyyy): 03/17/2023

Typed Name: Aaron Gross

Title: Senior Advisor

Organization: Office of Sustainability

IV. REVIEW AND APPROVAL BY DOE

I hereby certify that I have reviewed the information provided in this questionnaire, have determined that all questions have been appropriately answered, and judge the responses to be consistent with the efforts proposed.

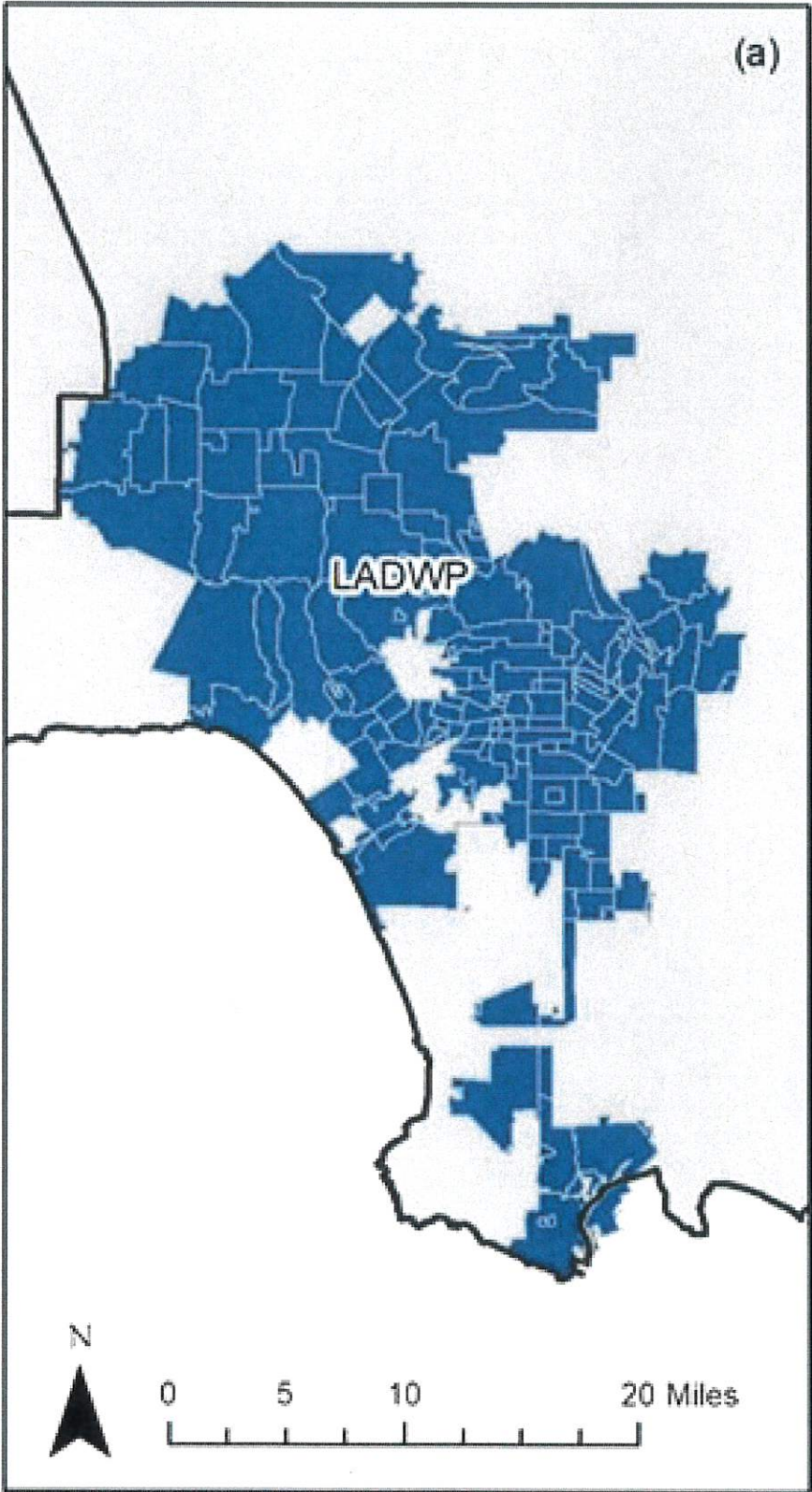
DOE Project Manager

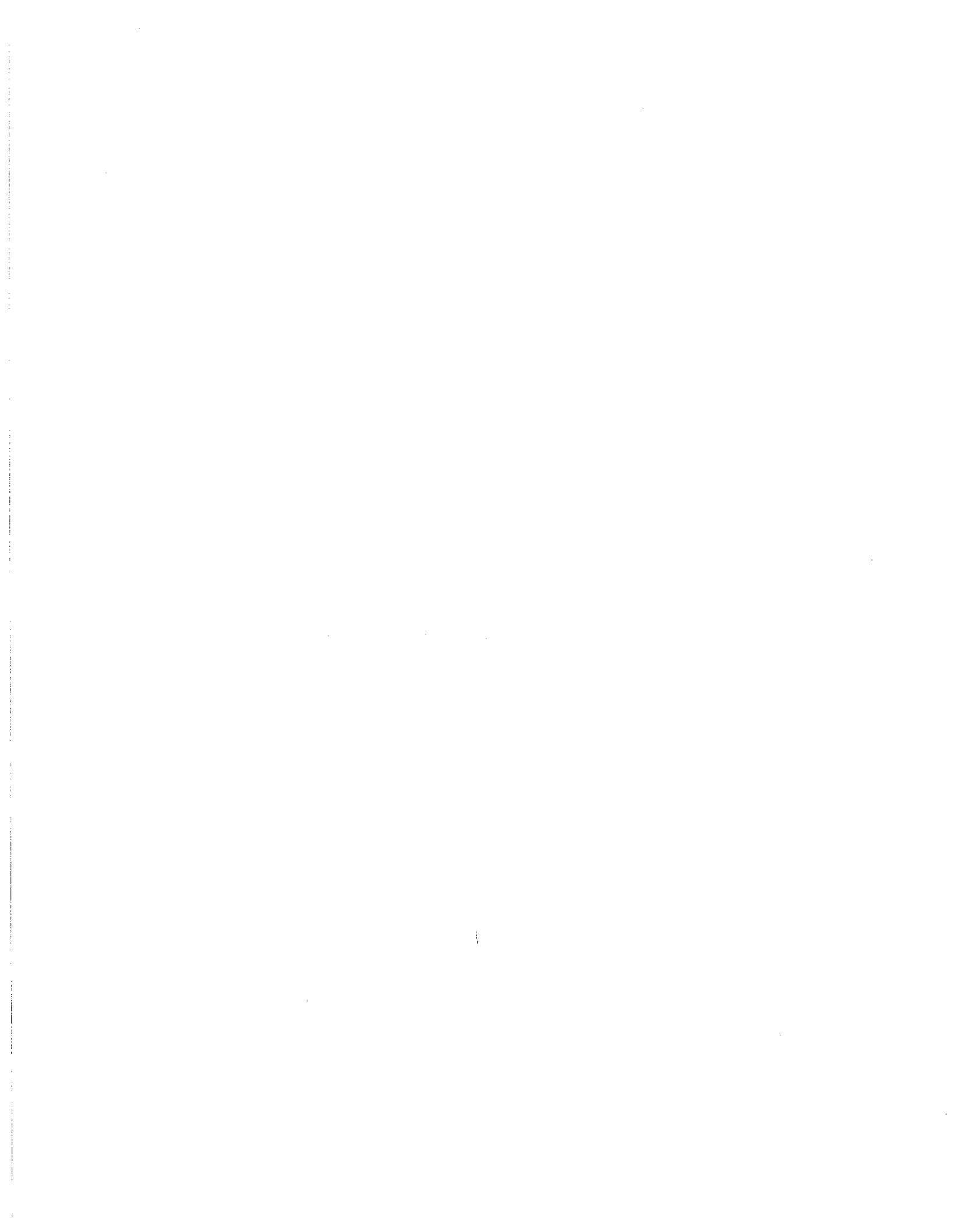
Signature: _____ Date (mm/dd/yyyy): _____

Typed Name: _____

LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP)

CITYWIDE SERVICE AREA MAP





Statement of Project Objectives

Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources

A. Objectives

LADWP is committed to local and state decarbonization goals set under Senate Bill 100 (2018) and the 2021 City of Los Angeles City Council 2035 clean energy targets.

LADWP is launching the Community Grid Innovation Program (CGIP) to assist with the deployment of grid serving distributed energy resources. CGIP consists of two primary components: 1) a distributed energy resource management system (DERMS), and 2) the expansion of LADWP programs to develop distributed energy resources (DERs) that are compatible and integrated with the DERMS. The programs to be expanded include the Feed In Tariff (FiT), Feed In Tariff Plus (FiT+), Solar Rooftop Program (SRP), Demand Response (DR), Commercial Energy Storage to Grid (CES2G), and Managed Charging Program (MCP). These programs will add approximately 150 MW of dispatchable capacity in partnership with LADWP's customers to LADWP's distribution and sub-transmission electrical networks.

LADWP requests \$48 million from the Department of Energy FOA 0002740 under Topic Area 2 to assist with the deployment of more than \$96 million dollars' worth of community programs and equipment that will have the ability to provide grid services, monitoring, and visibility throughout Los Angeles.

B. Scope of Work

The CGIP consists of two phases. The first phase is the DERMS deployment, and the second phase depends on the successful completion of the first phase. The second phase consists of several parallel tracts, each of which is a customer program expansion, modification, or creation.

- Phase 1 – DERMS Setup
 - Install and integrate DERMS with existing advanced distribution management system
- Phase 2 – Program Expansion
 - FiT/FiT+: Expand programs to 75 MW of new capacity with LADWP Board approval
 - CES2G: Create the program with LADWP Board approval for 25 MW of commercial scale EV and stationary storage.
 - SRP: Expand the program to include EV chargers and energy storage up to 1 MW.
 - DR: Execute a contract to integrate a demand response vendor's aggregation platform into the DERMS. The DR program shall be expanded to include building energy management systems and 7,500 additional smart thermostats.
 - MCP: Execute a contract to create the managed charging program for 6000 residential and 6000 commercial customers.

C. Tasks to be Performed

Task 1.0: Project Management and Planning

Subtask 1.1 – Project Management Plan (PMP)

LADWP will submit a Project Management Plan (PMP) to the designated Federal Project Officer (FPO) within 30 days of the award and shall not proceed beyond task 1.0 until the PMP has been accepted by the FPO. LADWP will manage the project in accordance with the PMP.

Subtask 1.2 – National Environmental Policy Act (NEPA) Compliance

The SRP is the only program where LADWP will be constructing new physical assets. The other programs rely on customers and developers to perform the development, design, and construction. All SRP work is performed on existing residential and small commercial properties in accordance with local permitting requirements.

Subtask 1.3 – Cybersecurity Plan (CSP)

LADWP's Joint Cyber Security team will provide technical specification requirements for all new contracts and perform vulnerability assessments on the systems prior to their public deployment.

LADWP has a fiduciary obligation to protect data and information technology assets from unauthorized loss, disclosure, or alterations. Enterprise Cybersecurity Services (ECS) is an integral part of LADWP's Information Technology, under the leadership of the Chief Information Technology Officer (CITO) at LADWP. LADWP's corporate information technology assets must be able to maintain confidentiality, integrity and availability to enable LADWP to operate its core mission of providing reliable water and power to its customers. Over the last five years ECS has laid the foundation for information technology security and protecting LADWP's corporate information technology assets from constant Cybersecurity threats. ECS assists LADWP management to understand and manage complex technology risks and to protect customers, data and systems.

Subtask 1.4 – Continuation Briefing(s):

The LADWP will perform continuation briefings on the annual basis that the DOE requires. This will include all the elements requested by the DOE, including:

- DERMS deployment status
- Program expansion statuses and goals versus performance
- Evaluation of milestones and Go/No-Go decision points
- Cyber security evaluation results
- PMP requirements

Task 2.0, Phase 1: DERMS Deployment

LADWP needs to finish procurement, installation, integration, testing, and operation of the DERMS. Phase one has already begun, will overlap with Phase 2.

Subtask 2.1 – DERMS Procurement

LADWP has already started the procurement process for the DERMS. This will be completed by the end of the 2023 calendar year.

Subtask 2.2 – DERMS Installation

Install the DERMS software alongside the existing Energy Control Center distribution management software.

Subtask 2.3 – DERMS Configuration and Integration

Set up the DERMS to communicate with all the necessary subsystems and configure it to perform the expected tasks within the PMP.

Subtask 2.4 – DERMS Vulnerability Assessment

Cyber Security to perform a vulnerability assessment on the DERMS.

Subtask 2.5 – DERMS Operations Testing

Perform a production level operational test on the DERMS.

Task 3.0, Phase 2: FiT and FiT+ Program Expansions

Subtask 3.1 – Board Approval

Seek LADWP Board approval for 50 MW of new FiT capacity and 25 MW of new FiT+ capacity with DERMS integration capabilities.

Subtask 3.2 – Advertise Expanded Program

Publicly advertise and perform community outreach to announce the new program expansion.

Subtask 3.3 – Receive and Review Applications

Developers and customers submit program applications. LADWP staff will evaluate applications for feasibility and execute interconnection agreements in accordance with existing FiT and FiT+ guidelines.

Subtask 3.4 – Construction and Evaluation

Developer begins construction. Project is evaluated for integration capabilities with DERMS and for Cyber Security Vulnerability.

Subtask 3.5 – Commercial Operation

Projects begin operation once approved by LADWP. Asset is dispatched according to FiT and FiT+ program rules.

Subtask 3.6 – Evaluation and Compensation

Assets will be evaluated for their value and compensated accordingly.

Task 4.0, Phase 2: CES2G Program Launch

Subtask 4.1 – Board Approval

Seek LADWP Board approval for 25 MW of capacity under CE2SG guidelines

Subtask 4.2 – Advertise Expanded Program

Publicly advertise and perform community outreach to announce the new program expansion.

Subtask 4.3 – Receive and Review Applications

Developers and customers submit program applications. LADWP staff will evaluate applications for feasibility and execute interconnection agreements in accordance with existing CES2G guidelines.

Subtask 4.4 – Construction and Evaluation

Developer begins construction. Project is evaluated for integration capabilities with DERMS and for Cyber Security Vulnerability.

Subtask 4.5 – Commercial Operation

Projects begin operation once approved by LADWP. Asset is dispatched according to CES2G rules.

Subtask 4.6 – Evaluation and Compensation

Assets will be evaluated for their value and compensated accordingly.

Task 5.0, Phase 2: Demand Response Program Launch

Subtask 5.1 – Board Approval

Issue new contract for a demand response management system, new thermostats, and building energy management system support.

Subtask 5.2 – System Integration

Integrate the demand response management system software into the DERMS. Perform vulnerability analysis with the Cyber Security Team.

Subtask 5.3 – Advertise Program

Publicly advertise and perform community outreach to announce the new program expansion.

Subtask 5.4 – Receive and Review Applications

Developers and customers submit program applications. LADWP staff will evaluate applications for feasibility and execute interconnection agreements in accordance with the DR guidelines.

Subtask 5.5 – Asset Deployment and Operation

This task only applies to thermostats where LADWP is providing the thermostat and building energy management systems where LADWP is providing support for the deployment.

Subtask 5.6 – Evaluation and Compensation

Assets will be evaluated for their value and compensated accordingly.

Task 6.0, Phase 2: Managed Charing Program Launch

Subtask 6.1 – Board Approval

Issue new contract for a managed charging vendor and receive LADWP Board approval for the program guidelines.

Subtask 6.2 – System Integration

Integrate the managed charging software into the DERMS. Perform vulnerability analysis with the Cyber Security Team.

Subtask 6.3 – Advertise Program

Publicly advertise and perform community outreach to announce the new program expansion.

Subtask 6.4 – Receive and Review Applications

Developers and customers submit program applications. LADWP staff will evaluate applications for feasibility and execute interconnection agreements in accordance with the managed charging guidelines.

Subtask 6.5 – Asset Deployment and Operation

Program applicant deploys assets.

Subtask 6.6 – Evaluation and Compensation

Assets will be evaluated for their value and compensated accordingly.

Task 7.0, Phase 2: Project Completion

Subtask 7.1 – Final Report

LADWP will write a comprehensive report detailing the setup of the DERMS, individual program evaluations, and the impacts of the DERMS at both the distribution and sub-transmission levels. This report shall include a summary of how many applications were received, number of applications approved, and a characterization of the deployed assets.

D. Deliverables

Subtask 1.1 – Project Management Plan

Subtask 1.3 – Cybersecurity Plan

Subtask 1.4 – Pre-Continuation Briefing Document(s)

Subtask 7.1 – Final Report

In addition to the deliverables listed above, the LADWP will submit reports in accordance with the Federal Assistance Reporting Checklist.¹

E. Briefings/Technical Presentations

LADWP shall prepare, and present periodic briefings, technical presentations and demonstrations as requested by the Federal Project Officer, which may be held at a DOE or LADWP's facility, other mutually agreeable location, or via webinar. Such meetings may include all or a combination of the following:

Kickoff Briefing - Not more than 30 days after submission of the Project Management Plan, LADWP shall prepare and present a project summary briefing as part of a Project Kickoff Meeting.

Pre-Continuation Briefing - Not less than 90 days prior to the planned start of a budget period, LADWP shall brief the DOE on the results to date, and their plans for the subsequent periods of work. The DOE will consider the information from this briefing, as well as the content of deliverables submitted to date, prior to authorizing continuing the project.

Final Project Briefing - Not less than 30 days prior to the end of the project, LADWP shall prepare and present a Final Project Briefing on the results and accomplishments of the entire project.

Other Briefings – LADWP shall prepare and present technical, financial, and/or administrative briefings as requested by the DOE. Additionally, the DOE may require LADWP to make technical presentations at national and/or industry conferences.

¹ <https://www.energy.gov/management/articles/federal-assistance-reporting-checklist-and-instructions-projects>

Abstract for Public Release: Clean Grid Innovation Program

Applicant: Los Angeles Department of Water and Power

Project Manager: Jason Rondou, Director Power System Planning

The Los Angeles Department of Water and Power (LADWP) proposes to use the Department of Energy (DOE) Grid Resilience and Innovation Partnerships (GRIP) Program funding to launch the Community Grid Innovation Program (CGIP), which will provide LADWP system benefits by allowing for greater control at the grid operations level and enhance visibility of the distribution system. The budget is \$96 million with a 50% cost share with the DOE. LADWP is committed to aggressive and ambitious local and state decarbonization goals. To meet these goals, while providing reliable energy to our rate payers and protecting vulnerable communities from increased rates, LADWP is launching the Community Grid Innovation Program (CGIP). CGIP consists of two primary components: 1) a distributed energy resource management system (DERMS), and 2) the expansion of LADWP programs to develop distributed energy resources (DERs) that are integrated with the DERMS. These two systems working in conjunction will give LADWP grid operators enhanced ability to dynamically respond to grid fluctuations by precisely dispatching more than 150 megawatts of DERs resulting in improved grid flexibility, reliability and resilience.

The programs are the core of the CGIP and are described below.

- **Feed In Tariff and Feed in Tariff Plus (FiT / FiT+):** This is an existing program with over 100 MW of solar PV already deployed on commercial and industrial properties. The CGIP will increase FiT program capacity by 75 MW over a five-year period and increase FiT+ capacity by 25 MW.
- **Solar Rooftop Program (SRP):** This is an existing program with 32 residential solar PV system deployed. The CGIP will add energy storage systems and EV chargers to the program offering. The energy storage systems will provide grid services to LADWP, and LADWP expects to install 710 kW of solar PV and 1086 kWh of energy storage across approximately 161 customers.
- **Demand Response (DR):** This is an existing program with over 48,000 residential participants and 48 MW of commercial and industrial partners. The CGIP will allow LADWP to partner with 100 Los Angeles Unified School District schools and 6 Los Angeles Community College District campuses and assist with building energy management system installations and integrations with LADWP's DERMS. LADWP will expand the residential program by over 7,500 participants.
- **Commercial Energy Storage To Grid (CES2G):** Once publicly launched, CES2G will be the first of its kind bi-directional electric vehicle program. The CGIP will expand the capacity of the program by up to 25 MW and create a new tier to directly promote additionality of projects located in DACs.
- **Managed Charging Program (MCP):** Once publicly launched, MCP will provide incentives to residential customers to allow LADWP to manage the charging of their electric vehicles. The CGIP Expand the program to include fleet services for commercial electric vehicles.



CITY
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PIERCE
SOUTHWEST
TRADE-TECH
VALLEY
WEST

March 10, 2023
The Honorable Jennifer Granholm
Secretary, U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

Re: Support for LADWP GRIP Grant Application “Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources”

Dear Secretary Granholm:

This letter expresses the Los Angeles Community College District’s strong support for the Los Angeles Department of Water and Power (LADWP) and its grant funding application for “Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources.”

The City of Los Angeles has demonstrated its leadership to decarbonize LADWP’s electric system with its commitment to have a 100% carbon-free power supply by 2035. LADWP’s proposed project will generate tremendous reliability benefits to existing and future LADWP customers by launching the Community Grid Innovation Program (CGIP), which will provide LADWP system benefits by allowing for greater control at the grid operations level and enhancing the visibility of the distribution system.

LACCD’s participation in this type of program will allow the six colleges (LAVC, LAMC, LAPC, LACC, LATTC, and LAHC) located in LADWP territory to reduce/curtail energy use known as “load reduction” at the colleges during times of high peak demands periods defined and imposed by LADWP during its critical events. In addition, the LACCD Board of Trustees has committed to achieving 100 percent renewable, carbon-free electricity consumption at all District facilities by 2030 and achieving 100 percent carbon-free energy consumption for all other energy uses.

Thank you for the opportunity to support this program and grant proposal. If you have any questions feel free to contact me or James Conway of my staff at conwayja@email.laccd.edu or 213-891-2094.

Sincerely,

Peggy M. Quijada de Franke
Peggy M. Quijada de Franke, MSc PE MBA
Director of Facilities, Planning & Development
Los Angeles Community College District

Digitally signed by Peggy M. Quijada de Franke
DN: C=US, E=QuijadPM@LACCD.edu, O=LACCD,
OU=Facilities, Planning and Development, CN=Peggy
M. Quijada de Franke
Reason: I am the author of this document
Date: 2023.03.10 16:48:21-08'00'

QuijadPM@email.laccd.edu
Office (213) 891-2446
Fax (213) 891-2403
laccd.edu

770 Wilshire Blvd. 6th Floor
Los Angeles, CA 90017

c: Los Angeles Department of Water and Power

March 7, 2023

The Honorable Jennifer Granholm
Secretary, U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

Re: Support for LADWP GRIP Grant Application “Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources”

To Secretary Granholm:

This letter expresses UCLA Sustainable LA Grand Challenge’s strong support for the Los Angeles Department of Water and Power (LADWP) and its grant funding application for “Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources.”

The City of Los Angeles has demonstrated its leadership to decarbonize LADWP’s electric system with its commitment to have a 100% carbon-free power supply by 2035. LADWP’s proposed project will generate tremendous reliability benefits to existing and future LADWP customers by launching the Community Grid Innovation Program (CGIP), which will provide LADWP system benefits by allowing for greater control at the grid operations level and enhance visibility of the distribution system.

The Sustainable LA Grand Challenge is an interdisciplinary university-wide initiative aimed at applying UCLA research, expertise and education to help transform Los Angeles into the world’s most sustainable megacity by 2050 — making it the most livable, equitable, resilient, clean and healthy megacity, and an example for the world. We have partnered with LADWP on numerous projects to advance these goals and transform the city to clean, renewable energy for all residents. This project will increase the reliability of the grid as we integrate more renewable energy resources. As a partner and a stakeholder in LADWP territory, UCLA is committed to supporting this project with expertise and research to improve outcomes as appropriate and necessary.

Thank you for the opportunity to support this program and grant proposal. If you have any questions feel free to contact me at causer@conet.ucla.edu.

Sincerely,



Casandra Rauser
Executive Director, Sustainable LA Grand Challenge

c: Los Angeles Department of Water and Power



U.S. GREEN BUILDING COUNCIL LOS ANGELES

525 S. Hewitt St.
Los Angeles, CA 90013
(213) 689-9707 usgbc-la.org

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EXECUTIVE STAFF

Ben Stapleton, Executive Director

March 2023

The Honorable Jennifer Granholm
Secretary, U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

**Re: Support for LADWP GRIP Grant Application “Expanding
Distribution System Visibility and the Ability to Dispatch Distributed
Energy Resources”**

To Secretary Granholm:

On behalf of the U.S. Green Building Council - Los Angeles (USGBC-LA), please accept this letter of support for the Los Angeles Department of Water and Power (LADWP) and its grant funding application for “Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources.”

USGBC-LA’s more than 3,000 members are sustainability and green building professionals with a deep commitment to addressing climate change and other local, state, and international environmental issues. Our members are designers, engineers, public agency and utility staff, consultants, product manufacturers, and service providers. Founded in 2002, our mission is to accelerate all aspects of sustainability in the built environment to create a more sustainable region for all.

The City of Los Angeles has demonstrated its leadership to decarbonize LADWP’s electric system with its commitment to have a 100% carbon-free power supply by 2035. LADWP’s proposed project will generate tremendous reliability benefits to existing and future LADWP customers by launching the Community Grid Innovation Program (CGIP), which will provide LADWP system benefits by allowing for greater control at the grid operations level and enhance visibility of the distribution system.

USGBC-LA actively supports decarbonizing our economy to address climate change and help meet California’s 2045 carbon neutrality goal. Decarbonizing buildings must be a cornerstone towards achieving this goal since the building sector accounts for over 25% of the state’s GHG emissions. Electric grid resilience is a vital component to securing a reliable carbon-free future.

Thank you for the opportunity to support this program and grant proposal. We welcome any follow-up you may have for us during this process.

Sincerely,

A handwritten signature in black ink, appearing to read "Ben Stapleton".

Ben Stapleton
Executive Director, USGBC-LA



KAREN BASS
MAYOR

March 10, 2023

The Honorable Jennifer Granholm
Secretary, U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

Re: Support for LADWP GRIP Grant Application "Expanding Distribution System
Visibility and the Ability to Dispatch Distributed Energy Resources"

To Secretary Granholm:

This letter expresses the The City of Los Angeles' strong support for the Los Angeles Department of Water and Power (LADWP) and its grant funding application for "Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources."

The City of Los Angeles has demonstrated its leadership to decarbonize LADWP's electric system with its commitment to 100% carbon-free power supply by 2035. LADWP's proposed project will generate tremendous reliability benefits for LADWP customers by launching the Community Grid Innovation Program (CGIP), which will provide LADWP system benefits allowing for greater control at the grid operations level and enhanced visibility at the distribution system.

This is an important grant that will accelerate the implementation of projects that are essential to our agenda to confront the climate crisis in Los Angeles.

Thank you for the opportunity to support this program and grant proposal. If you have any questions feel free to contact Doug Tripp of my staff at doug.tripp@lacity.org.

Sincerely,

Nancy Sutley
Deputy Mayor, Energy & Sustainability
Office of Mayor Karen Bass

c: Los Angeles Department of Water and Power



County of Los Angeles
INTERNAL SERVICES DEPARTMENT

1100 North Eastern Avenue
Los Angeles, California 90063

SELWYN HOLLINS
Director

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FAX: (323) 264-7135

February 28, 2023

The Honorable Jennifer Granholm
Secretary, U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

Re: Support for LADWP GRIP Grant Application "Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources"

To Secretary Granholm:

This letter expresses Los Angeles County's strong support for the Los Angeles Department of Water and Power (LADWP) and its grant funding application for "Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources."

The City of Los Angeles has demonstrated its leadership to decarbonize LADWP's electric system with its commitment to have a 100% carbon-free power supply by 2035. LADWP's proposed project will generate tremendous reliability benefits to existing and future LADWP customers by launching the Community Grid Innovation Program (CGIP), which will provide LADWP system benefits by allowing for greater control at the grid operations level and enhance visibility of the distribution system.

The County of Los Angeles is committed to advancing grid reliability through its initiatives to install smart, adaptive electric vehicle charging station network of over 1,000 stations, with plans to install 15,000 charging stations by 2035. The County is working with its network provider, PowerFlex EDF Renewals, to optimize building systems and charging stations controls, including piloting V2G technology to support critical County operations. The County will coordinate with and use LADWP's Community Grid Innovation Programs to help support regional grid resiliency and reliability.

Thank you for the opportunity to support this program and grant proposal. If you have any questions feel free to contact Minh Le at msle@isd.lacounty.gov or at (3.23) 267-2006

Sincerely,



Minh Le (Feb 28, 2023 08:39 PST)

Minh Le

General Manager, Energy and Environmental Services

c: Los Angeles Department of Water and Power

February 23, 2023

The Honorable Jennifer Granholm
Secretary, U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

Re: Support for LADWP GRIP Grant Application “Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources”

Dear Secretary Granholm:

This letter expresses Climate Resolve’s strong support for the Los Angeles Department of Water and Power (LADWP) and its grant funding application for “Expanding Distribution System Visibility and the Ability to Dispatch Distributed Energy Resources.”

The City of Los Angeles has demonstrated its leadership to decarbonize LADWP’s electric system with its commitment to have a 100% carbon-free power supply by 2035. LADWP’s proposed project will generate tremendous reliability benefits to existing and future LADWP customers by launching the Community Grid Innovation Program (CGIP), which will provide LADWP system benefits by allowing for greater control at the grid operations level and enhance visibility of the distribution system.

Improving the distribution system will help LADWP achieve its goal of achieving carbon-free distribution by 2035 — a goal which Climate Resolve firmly supports.

Thank you for the opportunity for Climate Resolve to support this program and grant proposal. If you have any questions feel free to contact me at jparfrey@climateresolve.org, or (310) 261-0832 mobile.

Sincerely,



Jonathan Parfrey
Executive Director

cc: Los Angeles Department of Water and Power

**Community Benefits Plan - Expanding Distribution System Visibility and the Ability to Dispatch
Distributed Energy Resources**

Community Benefits Plan

The Community Grid Innovation Program (CGIP) will modernize The Los Angeles Department of Water and Power's (LADWP) distribution network by providing network visibility, empowering customer engagement, and increasing LADWP's hosting capacity for distributed energy resources (DERs). The distribution network will be transformed into a flexible system of distributed loads and resources. This transformation will facilitate implementation of additional utility programs where customers can be engaged as partners with LADWP and provide a smoother transition to clean energy. This smooth transition will ensure electricity remains affordable while improving upon reliability.

LADWP anticipates that DACs will benefit significantly from CGIP being funded by DOE because DOE funding will only be used to fund incentives to DACs and overhead costs that will be shared amongst all program participants. Overhead costs include program administration, engineering, and software costs, among others. DOE funds will not be used to provide incentives to customers outside of DACs. These will be funded by LADWP.

LADWP believes that reliable, affordable, and accountable service is not a privilege — it is a right that belongs to every Angeleno who relies on our utility. Recently, LADWP launched a 100% Renewable Energy Study (LA100) in partnership with the National Renewable Energy Lab (NREL) to achieve reliable, 100% renewable power as early as 2035. The LA100 study concluded that more work is needed to ensure that the clean energy transition improves energy equity for all Angelenos. As a result, the Equity Strategies Study was launched as a new phase to follow LA100 in partnership with NREL and the University of California Los Angeles (UCLA). The Equity Strategies Study is a comprehensive and inclusive, community-driven two-year effort aimed at incorporating research and analysis to achieve specific, community-prioritized, and equitable outcomes from the clean energy transition outlined in the LA100 study. LADWP's Community Benefits Plan builds on LADWP's LA100 Equity Strategies, a forward-looking and groundbreaking initiative to promote energy justice for all Angelenos.

The LA100 study with NREL identified that the optimal path to reducing carbon emissions and reducing costs is to do two things simultaneously. LADWP must encourage electrification of as much infrastructure as possible, such as the transportation network, and greatly improve load flexibility. The CGIP builds on both of these fundamental principles to encourage the proliferation of electric vehicles and ensure that those new loads can be managed to maximize the use of LADWP's existing infrastructure, thereby minimizing costs.

The final results of the LA Equity Strategies study will not be released until after this grant has been reviewed by the DOE, but the findings from the study will be incorporated as soon as possible into the deployment of the customer programs envisioned herein.

Community and Labor Engagement

The focus on community benefits starts from the top of the organization, at LADWP's Board of Commissioners. One prime example of this is the Racial Equity Action Plan¹. In 2021, under advisement from Mayor Eric Garcetti, the LADWP Board of Commissioners and the General Manager released a Racial Equity Action Plan. This plan, and its implementation, resulted in the hiring of a Chief of Diversity, Equity and Inclusion Officer². This position reports directly to the general manager of LADWP, and is tasked with improving supplier diversity, economic development, and human relations issues.

LADWP's robust engagement with the communities it serves takes place on a variety of levels to achieve positive outcomes for the community, LADWP, and the City of Los Angeles at large. As a strong advocate for involving communities and key stakeholders in the decision-making process related to projects, LADWP is incorporating community engagement in all levels of its day-to-day operations.

LADWP has coordinated with the Los Angeles County Internal Services Department (responsible for EV charger deployment efforts at the county), Climate Resolve (a non profit focused on policy and community resilience), Los Angeles Community College Districts (responsible for Los Angeles City community colleges), and the University of California at Los Angeles's Sustainable LA Grand Challenge on this CGIP, and their letters of commitment are attached.

LADWP has over 10,000 employees, over 90% of which are members of the International Brotherhood of Electrical Workers (IBEW) labor union. DWP engages with IBEW brass and rank and file on a regular basis regarding job training, work site safety, grievances, labor negotiations, and workforce development/deployment. These channels will be used to create a human resources plan for performing the work related to the expansion of these new and existing programs. The increased buildout of electrical infrastructure will result in more construction jobs which will expand that workforce and the accompanying support staff.

LADWP Community Engagement teams regularly attend monthly meetings of the 100 Neighborhood Council meetings to answer general or specific questions about programs, policies and projects. In addition, LADWP is very active with social media to both provide information to and seek feedback from communities and customers. Also, in accordance with the California Brown Act, members of the public are welcomed to provide comment at our bi-monthly Commission Meetings and our 3 days/week City Council meetings – where LADWP

¹ <https://www.ladwpcommission.com/diversity-equity-and-inclusion>

² <https://www.ladwpnews.com/ladwp-hires-first-ever-chief-diversity-equity-and-inclusion-officer/>

provides regular updates to our elected officials and the public about goals and specific projects.

LADWP will engage with community members in following ways:

1. Partner with the International Brotherhood of Electrical Workers to ensure either LADWP staff or contractors will be available to perform all the scope proposed here.
2. Reach out to 20 small engineering and energy related firms in DACs to make sure they are aware of the new program.
3. Host a community meeting with LAUSD to educate the public and solicit feedback on the building energy management system deployments.
4. Host two community outreach meetings to educate the public and solicit feedback on program deployments.
5. Run public advertising campaigns for all the projects as the ramp up to improve customer engagement with the programs.
6. Host two community outreach meetings in years 2 or 3 of the CGIP to solicit feedback on program deployment.
7. Present the LA Equity Strategies findings to the FPO and propose how they can be incorporated into the existing scope.
8. Host workshops with the Los Angeles Business Council (LABC) to inform their members of the upcoming programs and encourage their participation.

LADWP's commitment to communities and labor is further demonstrated through its first-of-its-kind and comprehensive Equity Strategies Study that is designed to maximize the distribution of benefits to all communities while recognizing past inequities and disparities. The Equity Strategies Study anchors community engagement as a leading initiative to inform new projects and programs to include community relationships and labor agreements using the following approach:

- First, setting aside dedicated resources to manage and monitor LADWP's community engagement initiatives. Without dedicated resources and a strategy and plan for creating social impact, sustained engagement is nearly impossible.
- Second, there must be a robust community outreach and engagement plan which includes, but is not limited to the following:
- Creating a Steering Committee comprised of community-based organizations, community representatives, and labor to ensure that there is robust community participation throughout the planning, decision-making, and implementation process to ensure that both procedural and distribution justices are in place to achieve equity. The purpose of the Steering Committee is to help LADWP gain new insights and advice to develop plans, strategies, and processes that are sensitive to the community-context in which it occurs and that support community and labor engagement leading to

negotiated agreements or partnerships or explore new opportunities by stimulating robust, high-quality conversations.

- Partnering with local government to synchronize efforts and avoid duplications.
- Engaging community leaders and community-based organizations to center the needs and aspirations of disadvantaged communities and to build trust.
- Developing a sustained information campaign plan through TV and Radio advertisements, newsletters, social media, letters to local churches, and community council offices.
- Implementing a robust stakeholder process aimed at educating and informing the general public and disadvantaged communities on the purpose and benefits associated with the implementation of projects. There should be multiple stakeholder meetings and community engagement to ensure all perspectives have been heard and are taken into consideration before decisions are finalized.
- Providing prospective Steering Committee members with a document outlining the roles and responsibilities of the Committee. This document describes specific responsibilities, activities and meetings, their frequency, as well as the limitations of the Steering Committee's authority. The overall process includes reasonable targets to monitor progress, measure success, hold LADWP accountable, and establish an iterative process that provides an opportunity to adjust the plan as necessary.

LADWP will identify representatives or employee ambassadors to represent LADWP in community engagement activities to help promote and drive the outreach. Serving as an ambassador provides employees with a hands-on role in supporting LADWP's initiatives, programs, and goals. LADWP will involve its management at the highest level including members of the LADWP Board of Commissioners in the entire process to demonstrate LADWP's commitment to community engagement. Ambassadors will plan and coordinate community involvement activities and gather feedback about the program from the communities and labor. LADWP will use multiple locations within its service territory to engage with various communities that make up LADWP's service territory to create city-wide community engagement to ensure alignment of purpose and practice.

LADWP will develop communication strategies that include a means for the general public to have access to, and participate in, the various activities and upcoming meetings agreed upon by the Steering Committee to foster a community experience rooted in inclusion. These communication strategies include, but are not limited to, (1) a dedicated webpage where all materials, resources, meeting summaries, upcoming meetings and activities could be found; (2) social media to continue community engagement outside the meeting forum to solicit other perspectives; and (3) podcast and radio interviews to expand awareness of LADWP's efforts.

Finally, based on lessons-learned implement steps that will ensure a successful community engagement process. Such lessons include, but are not limited to, (1) identifying appropriate community-based organizers that engage meaningfully and have a track record in supporting

the various initiatives formed by LADWP pertaining to job creation and training programs that support the community at large; (2) engaging and incorporating community support from the beginning of the process; (3) identifying what is important to communities, whether through townhall conversations or a more formal survey, is an excellent way of engaging communities and labor in the process of creating community-informed job and training programs; and (4) involving communities and labor in the actual development and execution of job and training programs and/or agreements is very critical to ensure meaningful participation and solutions.

Investing in the American Workforce

LADWP works closely with its member unions to protect and create high paying, local-sourced community jobs. One clear example of this is the utility pre-craft trainee (UPCT) program, which LADWP started in 2011 in conjunction with the International Brotherhood of Electrical Workers (IBEW) Local 18. The UPCT program is a pre-apprenticeship program where participants can earn a wage with benefits while learning about the different crafts within LADWP. Participants support active projects and programs at LADWP, and many are hired into LADWP itself or civil service positions elsewhere.³ This program is still ongoing⁴, and provides a critical onboarding path for underserved communities. The City Council decision in 2021 to direct LADWP to pursue 100% clean energy by 2035 also included a directive to implement a targeted hiring campaign in disadvantaged communities⁵.

LADWP's procurement and contracting has a major impact within the Los Angeles economy. LADWP's procurement process provides incentives within the evaluation process for contracts with small business enterprises, disabled veteran business enterprises, emerging business enterprises, women-owned business enterprises (WBEs), minority-owned business enterprises, and disadvantaged business enterprises. LADWP's overall annual target participation goals are 25% and 3% for small business enterprises and disabled veteran business enterprises, respectively.⁶The procurement efforts in CGIP will be subject to these procurement requirements.

LADWP's Racial Equity Action Plan resulted in a \$5 million dollar partnership between LADWP and Advancing Minorities' Interest in Engineering, a non-profit that developments government partnerships⁷. Advancing Minorities' Interest in Engineering will coordinate research efforts among 15 historically black universities.

³ <https://laborcenter.berkeley.edu/pdf/2016/Training-for-the-Future-2.pdf>

⁴ <https://www.ibewlocal18.org/sign-our-books/>

⁵ <https://www.utilitydive.com/news/la-approves-100-clean-energy-by-2035-target-a-decade-ahead-of-prior-goal/605980/>

⁶ <https://www.ladwp.com/ladwp/faces/ladwp/commercial/c-doingbusiness/c-db-vendorsandbidders/p-vb-sbedvbe3>

⁷ <https://heysocal.com/2022/02/17/ladwp-hbcus-partner-to-increase-diversity-in-engineering-workforce/>

In addition, LADWP is also interested in promoting the creation of high-quality jobs throughout the City of Los Angeles to ensure that the communities served by LADWP continue to thrive. As such, LADWP has a multi-pronged approach to the creation and retention of high-quality jobs.

First, LADWP will work closely with labor and community organizers with a proven track record in job creation to define what constitutes a “high-quality job.” This includes jobs that are well paid, sustained over the years, with health and retirement benefits, and training and workforce development opportunities. In general, “high-quality jobs” promote prosperity and welfare, providing Angelenos with the opportunity for self-sufficiency, economic security, and a sense of control over their lives. The creation of high-quality jobs in the City of Los Angeles will allow communities to improve their quality of life. Therefore, a discussion with labor and community organizers on what such jobs look like is an essential first step in LADWP’s approach to job creation.

Second, understanding how to adapt workers to the changing economy would provide great insight into the types of jobs and training required to support transforming the economy and yielding the creation of quality jobs at the low, middle, and high end of the spectrum. As such, LADWP recognizes that there is a need for communities to elevate skilled people in order to create quality jobs throughout the City of Los Angeles. A successful job creation program facilitates greater alignment of economic and workforce development efforts to promote sustainable growth in the City of Los Angeles that will thrive in a skill-based local economy.

Third, the creation of “high-quality jobs” translates into the injection of economic vitality and investment in disadvantaged communities via job training, workforce development, local hiring, project labor agreements, and the promotion of apprenticeship, student worker, and internship programs.

Finally, LADWP will work with labor and community organizers as well as researchers on the type of services that can be provided to low-skill or hard-to-employ individuals as a means of poverty reduction. This includes:

- Soft skills training for people whose backgrounds have not equipped them for the opportunity to foster basic skills and good work habits;
- Hard skills training in sectors such as manufacturing, utility, and information technology;
- Providing services to help individuals find jobs or matching them with the right employers;
- Working with community organizers to provide social service interventions to help individuals address barriers to employment that are not related to the job itself, such as transportation, childcare, and housing; and
- Providing place-based strategies, such as neighborhood and community development, to support LADWP’s various initiatives that directly target specific neighborhoods or any other efforts from various City departments.

- Each of the solutions above offers a valuable method of helping Angelenos get and retain a job and making work worthwhile, which is the foundation of welfare expansion and workforce-centered approaches to quality jobs.

Diversity, Equity, Inclusion, and Accessibility (DEIA)

Los Angeles City and LADWP have an active commitment to DEIA issues. LADWP is committed to providing a workplace that promotes diversity, equity, and inclusion where every employee is respected, valued, and supported regardless of race, ethnicity, faith, gender identity or sexual orientation. Los Angeles City Mayor Eric Garcetti, during his term, issued multiple Executive Directives to address DEIA and workforce diversity. Executive Directive 11 addressed Gender Equity within the workplace. Executive Directive Number 15 directly addresses employment equity and calls for an equitable workforce. Executive Directive Number 27 called for a Racial Equity Task Force and Racial Equity Action Plans across all City departments. Also in 2021, Mayor Garcetti required that all Los Angeles City employees, which includes LADWP, take an anti-bias training. The training was developed by the Ohio State University based Kirwin Institute.

In 2021, LADWP established an Office of Diversity, Equity and Inclusion and hired its first Chief Diversity, Equity and Inclusion Officer reporting directly to the General Manager and Chief Engineer. LADWP is a strong proponent of an impactful outreach program aimed at assisting workers facing system barriers to accessing quality jobs, including the advancement of DEIA through community participation and partnership with local businesses and training organizations. LADWP's approach to promoting DEIA is centered around facilitating access to good quality jobs. This approach includes, but is not limited to:

- Easing Angelenos access to good quality jobs
 - Working with transportation agencies to develop new forms of transportation
 - Working with City agencies to provide physical access for workers with disabilities
 - Providing communication access for non-English speakers
- Understanding fundamental barriers that prevent Angelenos from accessing good quality jobs
 - Working with County and City agencies to provide childcare assistance
 - Working with the community and City to create support services and training for those trying to change unhealthy work practice behavior
 - Working with training organizations to provide training apprenticeship programs to adapt Angelenos to new skillsets
- Identifying opportunities that can be provided to Angelenos to take advantage of such access
 - Working with the City to consolidate employment resource centers to match Angelenos with the right employers
 - Identifying sponsorship programs that support and guarantee jobs after training

- Working with technology developers on platforms or apps that showcase job opportunities
- Partnering with local business and training organizations with track records of serving disadvantaged communities
 - Developing a comprehensive strategy with local businesses, training organizations, and community that provide the opportunity to access good quality jobs
 - Developing a multi-location approach to accessibility
 - Designing metrics for tracking jobs delivered through access
- Using outreach to increase access awareness
 - Developing an outreach plan to increase awareness and reduce barriers

Los Angeles City and LADWP have an active commitment to DEIA issues. For example, in 2021 Los Angeles City Mayor Eric Garcetti required that all Los Angeles City employees, which includes LADWP, take an anti-bias training.⁸ The training was developed by the Ohio State University based Kirwin Institute.

LADWP was ranked by Forbes in 2021 as one of the best places for women in work.⁹ This is due to many reasons, but at least in part due to LADWP's free lactation consulting through community partners, and zero tolerance policies for sexual harassment¹⁰ and workplace hazing¹¹.

LADWP offers all it's employees multiple options for transportation. These include carpooling, public transit rebates, and personal parking.

Justice40 Initiative

The California state level law passed under proposition 26 in 2010¹² as a constitutional amendment limits LADWPs ability to target DACs or any other community type when prioritizing projects. If LADWP is awarded this funding opportunity, then most of the construction and equipment budget will be used for providing additional benefits to customers and projects located in DACs.

LADWP prefers to use California Senate Bill 535¹³ to identify DACs. California Senate Bill 535 uses the CalEnviroScreen 4.0 scores developed by the California Environmental Protection Agency to identify DACs. If the Federal Project Officer would prefer that LADWP use the Climate and Environmental Justice Screening Tool, then that can be arranged.

⁸ <https://www.nbclosangeles.com/news/local/garcetti-announces-mandatory-anti-implicit-bias-training-for-all-city-employees/2510552/>

⁹ <https://www.forbes.com/companies/los-angeles-department-of-water-and-power-ladwp/?list=best-employers-for-women&sh=54a48fa73505>

¹⁰ https://lacity.gov/sites/g/files/wph1706/files/2021-04/hahn_pe01.pdf

¹¹ https://lacity.gov/sites/g/files/wph1706/files/2021-04/villaraigosa_ed08.pdf

¹² <https://www.westerncity.com/article/proposition-26-executive-summary-layperson>

¹³ [SB 535 Disadvantaged Communities | OEHA \(ca.gov\)](#)

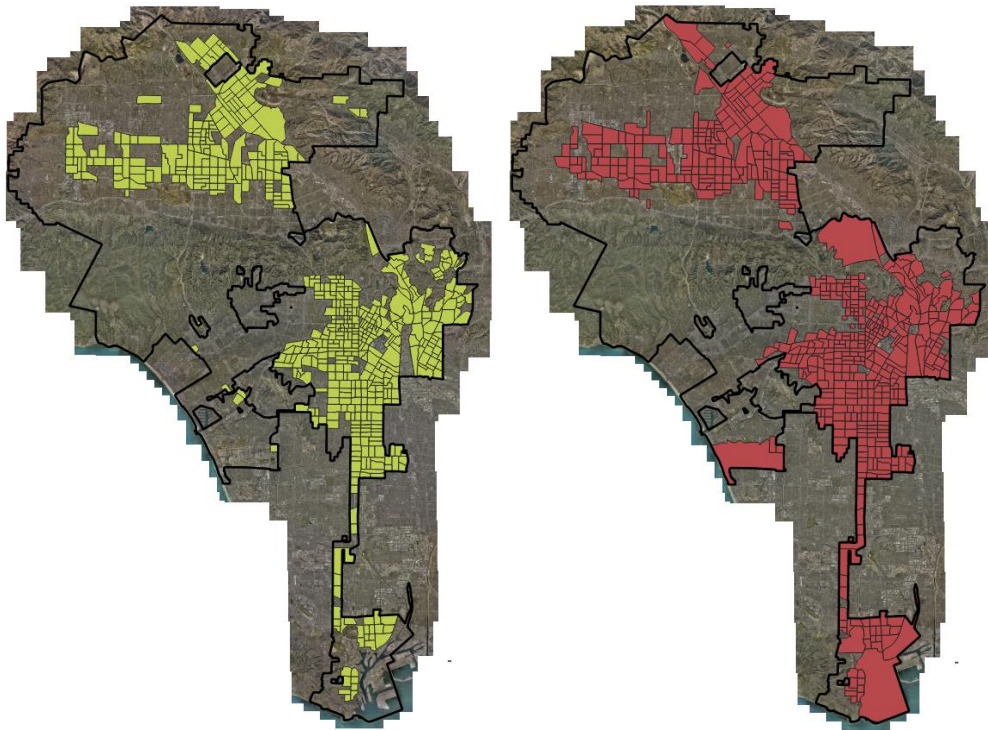


Figure A: DACs within the Los Angeles City boundary according to the CEJST

Figure A shows all the DACs, in yellow, within the Los Angeles City boundary, in black, according to the Climate and Environmental Justice Screening Tool (CEJST). The areas shown in red on the right are the DACs according to California’s Senate Bill 535, which is based primarily on CalEnviroScreen. This figure demonstrates that the City of Los Angeles has a significant DAC population regardless of which tool is used to evaluate DAC communities, and that the two tools largely overlap. One primary difference is that low population areas are classified as DACs in California, but these areas are not classified as DACs by CEJST. Communities within the Port of Los Angeles are a specific example of this discrepancy. LADWP provides electrical and water services within the city boundaries.

The list below is a summary from the Technical Volume which summarizes the anticipated benefits for DACs if this application proceeds to an award.

- **FiT/FiT+:** Interconnection costs of up to \$800,000 will be reimbursed for projects in DACs.
- **SRP:** Funds will go towards expanding the capacity of SRP up to 250 kW per year for a target deployment of 710 kW of solar PV and 1080 kWh of energy storage. Backup power from batteries will only be available in DACs. LADWP will partner with community organizations to deploy battery backup systems in areas most susceptible to power outages.
- **Demand Response:** LADWP will provide up to 7,000 smart thermostats to customers in DACs if they participate in the residential demand response program.

- **CES2G:** Up to 85% of interconnection costs, not to exceed \$800k, will be reimbursed if the project is located in a DAC.
- **Managed Charging:** DOE funds will allow LADWP to expand the residential Managed Charging Program to integrate 6,000 commercial customers with electric vehicles. Half of the 6,000 new enrollees will be selected from DACs and will receive a higher financial incentive than customers who live outside of DACs. The number of residential participants will be expanded from 3,000 to 6,000.

LADWP anticipates that the actual percentage of benefits to DACs will be much higher than 40% as desired by the Justice40 initiative because DOE funding will only be used to fund incentives to DACs and overhead costs that will be shared amongst all program participants. Overhead costs include program administration, engineering, and software costs, among others. Customers outside of DACs will be funded by LADWP.

SMART Milestones

As stated at the beginning of this Community Benefits brief, LADWP is prohibited from using general revenue funds from providing programs or opportunities exclusive to any customer class. of the funding from this grant award will go to providing equipment and development in DACs, and this is a core feature of this application. Most of the SMART Milestones below are based on the overall project SMART milestones in the Technical Overview.

The resources needed to ensure these goals are achievable are already included in the staffing requirements for the program administration and execution.

1. Year 1
 - a. Develop a human resources plan in collaboration with union representatives to ensure adequate construction personnel support for deploying SRP DERS. The human resource plan will either be clearly reflected in the LADWP Board approved program expansion or come in the form of a written letter of support and commitment from both the International Brotherhood of Electrical Works and LADWP's own construction teams.
 - b. Compile a list of at least twenty small and local engineering and energy related companies. Email, call, and write letters to these companies to make them aware of LADWP's programs.
 - c. Partner with LAUSD, LACCD, and CSULA to host at least one community outreach event to identify priorities when deploying building energy management systems.
 - d. Host two community outreach and education meetings to hear from impacted community members, describe the DOE grant, the planned scope of work, and solicit feedback on community preferences and methods of engagement.

- e. Present the LA Equity Strategies findings to the FPO and propose how they can be incorporated into the existing scope.
2. Year 2
- a. Publish a public web dashboard to inform customers and stakeholders on the progress of the programs and the remaining DAC specific funding. This dashboard will be updated monthly.
 - b. Contact the list of twenty or more companies again to see if they need assistance in applying for the programs.
 - c. FiT/FiT+: Receive at least 10 MW of applications for projects in DACs.
 - d. SRP: Sign an agreement with at least one community organization to host energy storage, solar PV, and EV chargers under the expanded SRP.
 - e. DR: Provide at least 1,000 smart thermostats to Demand Response program participants in DACs.
 - f. CES2G: Receive applications on at least 1MW of capacity in DACs.
 - g. Managed Charging: Receive applications for at least 500 customers in DACs.
3. Year 3
- a. FiT/FiT+: Receive at least 10 MW of applications for projects in DACs.
 - b. SRP: Install at least 20 solar PV and 20 energy storage systems in DACs.
 - c. DR: Provide at least 500 smart thermostats to Demand Response program participants in DACs. Integrate at least two building energy management system located in DACs.
 - d. CES2G: Receive applications on at least 2 MW of capacity in DACs. Interconnect 9 installations in DACs
 - e. Managed Charging: Receive applications for at least 500 customers in DACs.
 - f. Host two community feedback meetings on how the programs could be improved, and how the deployment is proceeding from the public's perspective.
4. Year 4
- a. FiT/FiT+: Receive at least 1 MW of applications for projects in DACs.
 - b. SRP: Install at least 15 solar PV and 15 energy storage systems in DACs.
 - c. DR: Provide at least 500 smart thermostats to Demand Response program participants in DACs. Integrate at least 5 building energy management system located in DACs.
 - d. CES2G: Receive applications on at least 1 MW of capacity in DACs. Interconnect 6 installations in DACs
 - e. Managed Charging: Receive applications for at least 100 customers in DACs.
 - f. DERMS: Dispatch at least 500 kW of DERS on circuits in DACs to minimize a peak load.
5. Year 5
- a. DERMS: Dispatch at least 2 MW of DERS on circuits in DACs to minimize a peak load.

- b. Host two community feedback meetings to solicit feedback on whether the programs should proceed, and to gather comments to provide for LADWP's final report to the DOE.

City of Los Angeles Congressional Districts (LADWP Service Area)

- CA-028 - Rep. Adam Schiff
- CA-030 - Rep. Brad Sherman
- CA-033 - Rep. Ted Lieu
- CA-034 - Rep. Jimmy Gomez
- CA-037 - Rep. Karen Bass
- CA-043 - Rep. Maxine Waters