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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:

UEI:

* Street1:

Street2:

* City: County:

* State:

Province:

* Country:

* ZIP / Postal Code: * Project/ Performance Site Congressional District:

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:

UEI:

* Street1:

Street2:

* City: County:

* State:

Province:

* Country:

* ZIP / Postal Code: * Project/ Performance Site Congressional District:

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): <input type="text"/> * Other (Specify): <input type="text"/>
--	--	--

* 3. Date Received: <input type="text" value="03/17/2023"/>	4. Applicant Identifier: <input type="text"/>
--	--

5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>
--	---

State Use Only:

6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>
---	---

8. APPLICANT INFORMATION:

* a. Legal Name: <input type="text" value="Liberty Utilities (CalPeco Electric) LLC"/>	
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="26-4694062"/>	* c. UEI: <input type="text" value="JG75E368HBR5"/>

d. Address:

* Street1: <input type="text" value="701 National Avenue"/>
Street2: <input type="text"/>
* City: <input type="text" value="Tahoe Vista"/>
County/Parish: <input type="text"/>
* State: <input type="text" value="CA: California"/>
Province: <input type="text"/>
* Country: <input type="text" value="USA: UNITED STATES"/>
* Zip / Postal Code: <input type="text" value="961489614"/>

e. Organizational Unit:

Department Name: <input type="text"/>	Division Name: <input type="text"/>
---------------------------------------	-------------------------------------

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

Prefix: <input type="text"/>	* First Name: <input type="text" value="Tami"/>
Middle Name: <input type="text"/>	
* Last Name: <input type="text" value="Fruhirth"/>	
Suffix: <input type="text"/>	

Title: <input type="text" value="Manager, Field Services and AMI Implementatio"/>

Organizational Affiliation: <input type="text"/>
--

* Telephone Number: <input type="text" value="775-762-3149"/>	Fax Number: <input type="text"/>
---	----------------------------------

* Email: <input type="text" value="tami.fruhirth@libertyutilities.com"/>
--

Application for Federal Assistance SF-424

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

Q: For-Profit Organization (Other than Small Business)

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 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:**

DE-FOA-0002740

* Title:

BIL Grid Resilience and Innovation Partnerships (GRIP)

13. Competition Identification Number:

Title:

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

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

Project Leapfrog: Foundational Advanced Metering Infrastructure (AMI) and Grid Edge Computing Technology Deployment in the Lake Tahoe Area

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.

Add Attachment

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View Attachment

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="13,071,300.00"/>
* b. Applicant	<input type="text" value="13,071,300.00"/>
* 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="26,142,600.00"/>

*** 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

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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: 4040-0006
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. FORM IS NOT APPLICABLE TO THIS CONSTRUCTION PROJECT	0	\$	\$	\$	\$	\$
2.						
3.						
4.						
5. Totals		\$	\$	\$	\$	\$

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	FORM IS NOT APPLICABLE TO THIS CONSTRUCTION PROJECT				
a. Personnel	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
b. Fringe Benefits	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Travel	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
d. Equipment	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
e. Supplies	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
f. Contractual	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
g. Construction	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
h. Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
i. Total Direct Charges (sum of 6a-6h)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
j. Indirect Charges	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>
k. TOTALS (sum of 6i and 6j)	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
7. Program Income	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>

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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.	FORM IS NOT APPLICABLE TO THIS CONSTRUCTION PROJECT	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
9.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
10.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
11.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
12. TOTAL (sum of lines 8-11)		\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
14. Non-Federal	\$ <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
15. TOTAL (sum of lines 13 and 14)	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>

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.	FORM IS NOT APPLICABLE TO THIS CONSTRUCTION PROJECT	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
17.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
18.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
19.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
20. TOTAL (sum of lines 16 - 19)		\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges: <input type="text"/>	22. Indirect Charges: <input type="text"/>
23. Remarks: <input type="text"/>	

DISCLOSURE OF LOBBYING ACTIVITIES

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

OMB Number: 4040-0013
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: Liberty Utilities (CalPeco Electric) LLC

* Street 1: 701 National Avenue Street 2: _____

* City: Tahoe Vista State: CA: California Zip: _____

Congressional District, if known: _____

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

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

8. Federal Action Number, if known: _____	9. Award Amount, if known: \$ _____
---	---

10. a. Name and Address of Lobbying Registrant:

Prefix _____ * First Name: Patrick Middle Name: _____

* Last Name: O'Neill Suffix: _____

* Street 1: 701 8th St. NW Street 2: _____

* City: Washington State: DC: District of Columbia Zip: _____

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

Prefix _____ * First Name: Patrick Middle Name: _____

* Last Name: O'Neill Suffix: _____

* Street 1: 701 8th St. NW Street 2: _____

* City: Washington State: DC: District of Columbia Zip: _____

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: Dmitry Balashov

* Name: Prefix _____ * First Name: Edward Middle Name: _____
* Last Name: Jackson Suffix: _____

Title: _____ Telephone No.: _____ Date: 03/17/2023

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Project Leapfrog:

Foundational AMI and Grid Edge Computing Technology Deployment

BIL Grid Resilience and Innovation Partnerships (GRIP) Program Application by Liberty Utilities
(CalPeco Electric) LLC

Topic Area 2: Smart Grid Grants

Category	Information
Applicant Organization	Liberty Utilities (CalPeco Electric) LLC
Project Locations	All separately metered residential and commercial customer premises within the company’s service territory, select overhead poles.
Business Point of Contact	Tami Fruhwirth, Manager, Field Services T: 775-762-3149 E: tami.fruhwirth@libertyutilities.com
Technical Point of Contact	Rick Dalton, Director, Engineering T: 310-710-1618 E: rick.dalton@libertyutilities.com
Organizations Employing Team Members	Liberty Utilities (CalPeco Electric) LLC. Itron Inc.
Confidentiality Notes	The financial forecasts contained in the sub-recipient’s Budget Justification Workbook and integrated into the Applicant’s Budget Justification Workbook are commercially sensitive and confidential.

Project Overview

Introduction

Project Leapfrog, proposed by Liberty Utilities (CalPeco Electric) LLC (“CalPeco” or “the Company”), is set to modernize and elevate CalPeco’s electrical network to a secure, automated, best-in-class smart grid. This project will deploy Advanced Metering Infrastructure (AMI) alongside a suite of enhanced operational systems, adding grid edge computing capabilities with Industrial Internet of Things (IIoT) applications. The next generation technology positions CalPeco to catch up to and surpass basic AMI functionalities in a single leap and launch into an advanced operating environment to manage rapidly changing system operation needs. The project’s total cost is estimated to be \$26,142,600, of which 50% or \$13,071,300 is requested from the DOE.

Background

CalPeco serves fewer than 50,000 electricity distribution customers in the Lake Tahoe basin and surrounding mountainous areas of California. CalPeco’s 2022 annual energy sales forecast is 587,000 MWh, which places it in the “Small Utilities” category as defined by the DOE. Project Leapfrog is vital to replace the aging metering assets for a utility that operates in unique climatological and topographical conditions. The sparsely populated, remote service area experiences extreme weather events in both winter and summer, including wildfires, heavy snowfall, landslides, and flooding. About 95% of CalPeco’s service territory falls within the top levels of high fire-threat districts, and as a result customers face a 20% rate increase owing in large part to mitigation efforts. Pockets of disadvantaged communities (DACs) across a mountainous territory can be left vulnerable and isolated during heavy snowfalls that can exceed 50 feet. The 2023 winter season had catastrophic consequences to the area, cutting off remote mountain towns and leaving residents without power for days.



Figure 1: Figure 1: Manual Meter Reading Attempt Following a Heavy Snowfall in the CalPeco Service Territory

CalPeco’s current metering fleet consists of about 33,000 manually read units and about 14,000 walk-by automated meter reading (AMR) meters, with the average age of the meter population exceeding 30 years. Due to the vast mountainous landscape, the company employs 10 full time meter readers and vehicles to collect manual meter reads with staff travelling across the service territory often in challenging weather conditions to manually collect the readings (see Figure 1). The current state of CalPeco’s metering equipment presents significant limitations to the company’s ability to respond quickly and plan efficiently, and Project Leapfrog strives to put the company’s customers on even footing with over 11 million other California retail electricity consumers and more than 111 million customers nationwide who rely on AMI metering.

Current Project Development Status

Recognizing the need to replace aged and obsolete manually read meters, CalPeco has taken early steps towards proceeding with this project, including securing the California Public Utilities Commission’s (CPUC) approval for what would be equivalent to the first phase of Project Leapfrog. However, given the opportunity to expand the scope and deliver the savings for its customers, the Company could not pass up on the opportunity to apply for the DOE grant. The Company has developed a business case to justify the investment and, in conjunction with its parent company’s other regulated operations, selected an AMI vendor, Itron, a leading AMI and grid modernization technology company with millions of endpoints deployed across the U.S. and a suite of distributed intelligence (DI) software. Itron Inc. is a sub-recipient under this application.

Project Goal

The goal of Project Leapfrog is to transform CalPeco’s electrical network into a technologically advanced smart grid through the deployment of AMI and a suite of advanced operational and grid edge computing capabilities to achieve the project goals in Table 1.

Project Goal	Targeted Improvements	Critical Success Factors to Achieve Goals
Improve grid operations with greater visibility, more resiliency, higher operational efficiency, and improved reliability	(a) Advanced load research. (b) Improved outage management. (c) Improved safety and efficiency for remote enablement. (d) Improved operational decision making by moving grid analysis, decision-making and control to the grid’s edge. (e) Upgrade of obsolete MV-90 C&I metering system.	(a) Stakeholder engagement and support. (b) Dedicated vendor SMEs (c) A pilot that proves the technical system functionality. (d) Successful system integration. (e) Updated business processes.
Advance energy conservation	(a) Reduced system peaks. (b) Reduced carbon footprint.	(f) Effective change management.
Improve public and employee safety	(a) Extreme wildfire and outage detection.	(g) In-dept ongoing community engagement. (h) Clear customer communications.
Enhance the customer experience	(a) AMI digitalization. (b) Granular data to support conservation programs.	
Advance community benefits	(a) An upskilled local workforce. (b) DAC community economic opportunities.	

DOE Impact

Since CalPeco submitted its GRIP Concept Paper for Project Leapfrog, the company has reached a settlement on the regulatory application in which the foundational AMI capabilities (equivalent to Phase 1 of this project) was proposed. While CalPeco plans to take early planning steps with core AMI capabilities, the DI grid edge analytics platform and large customer MV-90 metering upgrade, and advanced tools would not be feasible without DOE funding. Absent the DOE funding, the realization of significant benefits associated with these additional system enhancements would be delayed by five years or more. With DOE’s support, however, the amount for the fundamental capabilities only provisionally secured from the CPUC would suffice

to cover the entirety of the expanded project scope proposed herein within CalPeco’s 50% contribution and ensure that the entire AMI network and metering ecosystem and the associated processes are transformed in unison, leading to immediate efficiencies.

In addition, the GRIP Smart Grid grant provides the opportunity to attain essential rate relief for customers and to provide DACs with benefits which would otherwise not be possible. This includes improved wildfire prevention strategies, reduced outage duration, and local labor workforce upskilling with education and training required for new smart meters. Crucially, the DOE funding would substantially expand the scope of the benefits that CalPeco’s customers can attain for the same cost impact, converting the project from a lifecycle management exercise to a technical and community energy paradigm shift. Unlike most of its utility peers, CalPeco is not a member of any electricity market / ISO, as it is embedded in the electricity system of Nevada Energy and is not connected to the CAISO grid. This leaves the technological innovation and associated customer outcomes normally associated with competitive power system markets to be advanced by the distribution utility.

Given this status quo, the requested funding would position CalPeco to plan for and build critical real-time tools that would enable DER aggregation, demand response, managed charging, and other advanced market-based features. For example, CalPeco is also in the process of devising a battery storage-based Resilience Program wherein large customers would deploy utility-operated batteries to enhance their resilience but enable utility control to help reduce the system’s coincident peak for all customers. Absent the DOE’s contribution MV-90 upgrade proposed by Project Leapfrog, the Resilience Program’s scope or timing would likely be perceived as an entry barrier for many of its larger customers in the near term. By extension, this would delay the benefit accrual to all CalPeco residents and visitors to the area.

Community Benefits Plan

The project is set to transform how CalPeco performs core functions that directly affect its customers, positioning CalPeco to do more in less time with less manual effort. Some DACs in the service territory are already in the 90th percentile of household income to energy costs, and a 20% increase would have a crushing impact to an already struggling population. The community, and specifically DACs, will directly benefit in a many ways as outlined in Table 2.

Table 2: Summary of Community Benefits		
Project Element	Benefit to the Community	Flows to DACs?
Power Disruptions	Preventative measures can mitigate overloads and rating limit violations, minimize outages, and increase reliability.	Y
Power Outage Visibility	The availability of granular, accurate and timely outage information fuels web-accessible outage maps. Reduced needs to dispatch crews to accommodate out-of-town rental owners’ frequent false outage reports associated with failures of their home monitoring systems.	Y
Extreme Weather Event Mitigation	Meter-enabled temperature sensing and impedance detection processed through edge computing enable early warning to system operators of	Y

Project Element	Benefit to the Community	Flows to DACs?
	potential wildfires. The Gen5 Riva AMI mesh network is robust enough to operate in heavy snow conditions to help improve remote visibility for control room technicians prior to crew dispatches.	
Access and Functional Needs (AFN)	AMI contributes to improved safety for AFN customers (14% of CalPeco's DAC customers). CPUC's code 451 and 399.2(a) mandates that qualifying utilities disconnect services for wildfire prevention. An advanced AMI with DI can target customers for disconnection and prioritize reconnection.	Y
Shared AMI Network for Other Utilities	CalPeco' AMI network could become the backbone of AMI deployments by local water and gas utilities (with appropriate capital contributions). The company has engaged its local gas and water utility peers and has seen some interest in the concept that would provide customer savings across multiple commodities and further reduce GHG emissions and safety risks.	Y
Conservation Programs	AMI provides customers' consumption information, empowering them to manage their peak demands and control energy costs and enabling them to participate in energy programs.	Y
Decarbonization	Immediate reduction of carbon footprint by displacing the fleet used by meter readers and reducing truck rolls for power status checks and disconnections/reconnections. Ability to integrate more renewables.	Y
Rate Design Enhancements	Improved accuracy of cost-of-service models to ensure fair rate setting. Data analysis enhancements will provide insights to help negotiate more flexible and competitive wholesale energy purchases.	Y
Customer Bills	AMI significantly improves the accuracy and verifiability of customer bills and usage, especially where premises are vacant, such as vacation homes.	Y
Employment	An estimated 19 person-years of direct new jobs in planning, design, and installation of advanced technology in the area in the first year, and upwards of 5 new or upskilled long-term jobs for AMI network management.	Y
Education and Training	All line and metering personnel would receive paid AMI Fundamentals and Smart Grid device maintenance training. Education events and internship positions are also planned for local students (see Community Benefits Plan).	Y

The meter installation component of the project would create direct benefits for local labor resources. Itron retains local contractor firms who source and train the local labor force, creating an estimated 18 skilled trades jobs with significant training component. Workers would receive additional instruction in electrical safety, basics of mesh network telecommunications, and basic carpentry, masonry, and electrical wiring. While workers are typically non-unionized, Itron obtains a labor market prevailing wage opinion from the California Department of Labor before every project is contracted. Having obtained such a document, Itron and CalPeco would then work with the supplier to pay employees fair wages for the work they sign up to complete.

CalPeco has increasingly used diverse suppliers for capital and maintenance work since 2015, with more than \$17M going to these represented business entities in 2021 and accounting for over 27% of annual spend in that year. The company will work to maximize opportunities for local contractors and suppliers with added focus on 27% of customers living in DAC communities. Job opportunities are expected in functions like community project communications, warehousing,

make-ready pedestal and wiring upgrades (where needed), operating process redesign workshop facilitation, and others.

Potential Long-Term Constraints

CalPeco does not anticipate any long-term constraints to the community’s natural resources, water access or Tribal cultural resources. The project’s metering footprint will be limited to modifications of its meter base facilities on customer premises, while the mesh network installation entails additions of small telecom devices to the top quarter of a small portion of existing utility poles. The devices will not exceed the spatial dimensions of the poles and as such will not cause any incremental view obstruction.

Climate Resilience Strategy

CalPeco’s harsh climate with extreme temperatures reaching highs above 91 and lows below – 11 degrees, annual snowfalls of 50 feet, and a history of large-scale wildfires create a compelling setting for technology capable of assisting in early detection and reduction of staff’s interaction with poor weather. The Itron Gen5 advanced AMI system with DI edge technology incorporates an “Outage Detection System” (ODS) that correlates and aggregates the power outage detection and restoration notification capabilities from smart meters. This provides system network staff with situational awareness in real-time and mapping capability to enable efficient dispatching and minimizing outage duration via enhanced location detection. AMI also delivers preventative measures that can mitigate overloads and rating limit violations, minimizing outages by coupling the DI peer-to-peer meter capabilities with ODS analytics. As wires heat up under steady peak load conditions, they can sag and contact grounded plants, sparking wildfires. Peak load, overload, and impedance data can reduce these conditions with DR and DA analytical data and address potential risks. Field reliability tests validate that the meters function at both high and low temperature extremes. With over-the-air meter communications, CalPeco staff will be able to perform many duties remotely, reducing the need to travel during storms.

Technical Description, Innovation, and Impact

Relevance and Outcomes

The project aligns perfectly with the goals of the FOA as shown in Table 3.

Table 3: Alignment with the FOA Goals	
FOA Goal	Project Leapfrog
Transform community, regional, interregional, and national resilience, including in consideration of future shifts in generation and load	Early detection of suspected wildfires, improved outage response time through enhanced location accuracy, reduced crew and metering tech exposure to poor weather via remote communication for consumption reading and operational intelligence. A technological backbone for DER aggregation to reduce system peak load or pace substation degradation.
Catalyze and leverage private sector and non-federal public capital for impactful technology and infrastructure deployment	An opportunity to leverage CalPeco’s mesh network as an AMI foundation for local gas and water utility companies, reducing redundant meter reading expenses across upwards of 14 companies and creating impetus for further investment in required upgrades. Improved granularity of

Table 3: Alignment with the FOA Goals	
FOA Goal	Project Leapfrog
	consumption data creates opportunities for larger customers to invest in advanced energy-conserving technologies. An AMI network with remote reading simplifies meter-to-cash logistics of public EV charging stations.
Advance community benefits	As noted in Table 1, the community stands to benefit from a wide range of value drivers, including improved outage management, wildfire mitigation, reduced GHG emissions and upskilling and employment opportunities.

For this project, CalPeco has chosen Itron’s latest Gen5 Riva network platform (sometimes referred as GenX), which is increasingly viewed as market-leading due to its robustness, flexibility, and signal propagation in tough-to-reach areas through a combination of mesh and cellular network solutions. The project’s proposed scope entails deployment of hardware and software solutions outlined in Table 4.

Table 4: Technical Elements of the Proposed Solution	
Component	Key Functional Capabilities
Foundational Components and their Capabilities	
Gen5 Smart Electricity Meters	Itron’s Gen5 Riva electricity meters are built on the CENTRON platform that has been in operation for over a decade. The meters feature an onboard Linux-based platform with edge-computing cards which host, a growing suite of edge computing applications.
Mesh Network + Cellular Network Connectivity	AMI meters are supported by a radiofrequency (RF) mesh, enabled by pole-mounted Access Point (AP) devices and other signal boosting/data channel routing hardware. The Gen5 technology is robust in terms of performance, including in conditions not overly conducive to mesh signal penetration (mountainous terrain, coniferous vegetation, etc.) and provides the capability to read water and gas hourly data with leak detection.
Headend System (HES)	The Gen5 solution is supported by the UtilityIQ (UIQ) head end system - a suite of applications that support network management, meter data collection, meter configuration, over-the-air firmware upgrades, outage detection, and reporting.
Meter Data Management System (MDMS)	CalPeco will utilize the Itron IEE MDMS that has already been deployed at its affiliate Empire District Electric Company in Missouri to generate additional efficiencies for CalPeco customers. The MDMS component captures, aggregates, and validates consumption data before routing it to the appropriate systems (e.g. Billing, ADMS, etc.).
MV90 Upgrade	Upgrading the data collection and processing of CalPeco’s MV-90 system will enable best-in-class experience for CalPeco’s largest customers. The present legacy MV-90 capability relies on obsolete phone line technology that is increasingly difficult to obtain parts for and creates significant revenue risk for the company.
Advanced Edge Computing and Remote Operation Capabilities	
Back Office Platforms and Edge Computing Applications	Itron’s edge computing platform manages various applications that work as network sensors through real-time monitoring of metrology data to identify, report, and respond to specific grid conditions at the edge of the network. These apps respond to emergent conditions accurately, quickly, and at a lower cost.
Outage Detection System (ODS)	The ODS headend system module identifies outages and supports restoration activities by correlating outage and restoration events. Programmable exception policies enable filtering and aggregation by event type or duration. ODS provides a visual presentation of outage severity, location, and restoration, and offers integration with an Outage Management System (OMS).

Component	Key Functional Capabilities
Operations Optimizer (OO) –	The OO module is a high-performance back-office data analytics platform that unifies AMI data with other utility data sources like the Customer Information System (CIS). OO’s algorithms and machine-learning tools score, rank, and prioritize data to identify nuanced conditions that may require investigation and remediation.
GridScope	GridScope provides network management and configuration services for Distribution Automation (DA) devices. GridScope brings complete grid context to the operator, with geographic visualization and full awareness of the underlying telemetry and control devices it supports.
High-Impedance Detection –	This DI solution accurately detects and locates high-impedance “hot spots” (poor electrical connections) in the low-voltage (LV) secondary distribution. Examples include insulators, meter installations, and poor wiring conditions that can cause customer voltage flickers, interruptions, and fire risks.
DERO-EV Detect/Solar Awareness -	This application detects electrical vehicle/solar PV charging at residential premises and calculates a time series usage profile. Helps with the identification of EV owner locations for load forecasting purposes, targeted marketing of EV-specific rate offerings, and potential future vehicle-to-grid planning. Detection on solar PV installations is critical for locating potential unlawful installations that can pose employee safety risks.

Itron’s DI platform offers open-source architecture that enables the utility and/or private sector parties to develop additional apps. CalPeco’s approach is to plan for sufficient meter processing capacity, memory (modular with the newest meters), and network hardware topography to support advanced use cases.

Feasibility

CalPeco chose Itron after extensive marketplace research and vendor due diligence in 2018 and 2019. The successful partnership has grown with electric AMI deployment in four states served by CalPeco’s affiliate Empire District Electric Company. CalPeco can now rely on firsthand experience and a track record of collaboration tested through a successful deployment in the middle of the pandemic and several emergency situations during which Itron acted quickly and collaboratively to help CalPeco’s parent and affiliate achieve their objectives.

CalPeco also commissioned an abbreviated research exercise into the state of AMI-enabled edge computing technology, conducted by a third-party expert. providing confidence that the preferred technology path is supported by objective external review. For example, while edge computing is still a relatively new solution in the utility sector, Itron has issued over 6,900,000 DI apps to its customers, with over 4,600,000 of them in use across a fleet of 880,000 meters. An average endpoint equipped with DI apps is running over five applications. These numbers are indicative of Itron’s DI ecosystem being established as a trusted choice by early adopter utilities.

Project Leapfrog is conceptually sound, viable from an execution perspective, and practically needed. The project is also reasonably close to shovel readiness, with technical due diligence completed on the preferred vendor and the core AMI solution, and a draft propagation study completed (required to determine the number and locations of mesh signal supporting devices). Given the participation of Itron as a sub-recipient, the project is well positioned to secure the

requisite technical planning and execution expertise. Moreover, the company will work with Itron to ensure that its sourcing of the implementation staff prioritizes the use of local labor force and fair wages compliant with all local standards. Given that the total installation labor force is not expected to exceed 15 people, CalPeco is confident that resourcing should not present material constraints, and in fact enable more future opportunities in the area.

Innovation and Impacts

There are three distinct dimensions of innovation that Project Leapfrog can help unlock for CalPeco: *(a) Supply Contract Flexibility Opportunities, (b) Economies of Scope through Network Sharing, and (c) Edge Visibility for Safety and Operability.* Each is discussed below:

Supply and Contract Management: While it has been able to build 60 MW of ground mounted solar generation, the bulk of CalPeco's supply needs come from NV Energy to whose system it is embedded. Since neither CalPeco nor NV Energy have access to competitive electricity markets, the arrangements are governed by a multi-year supply contract. The current contract includes fixed minimum monthly demand levels which establish the floor for the lowest demand payment even if the actual demand lower. The situation is further complicated by the fact that CalPeco has no granular ongoing visibility into its loading levels across the NV Energy 28 supply points, making it reliant on requests for detailed load data to NV Energy for planning purposes, which sometimes takes weeks. To successfully lobby for more flexible supply contract terms, CalPeco needs access to more frequent and granular consumption information and a network platform to help contract and coordinate meaningful demand response activities. Only when it can prove conclusively to NV Energy that it can reduce the demand beyond a certain level, can the company advocate for better / more flexible terms. An AMI platform would give it both the data and the network platform with two-way communication capabilities to help manage future DR programs. While the Distribution System Operator (DSO) concept (where a distributor acts as a micro-level ISO) is increasingly gaining attention, CalPeco may be one of the utilities with the strongest incentives to implement this model given its lack of upstream market access. However, as it stands, the company is not even able to read a meter without truck roll. Project Leapfrog could change this.

Economies of Scope through Network Sharing: AMI deployment would also create opportunities for cross-commodity collaboration with other local utility providers. To this end, CalPeco has initiated discussions with local gas and water utilities on a possibility of their metering systems eventually transitioning to use CalPeco's AMI network (subject to capital contributions). Even if this concept were to materialize later in the AMI assets' lifecycle, it would nevertheless create significant value through scope economies and cost avoidance. Since electric, gas and water consumers are ultimately the same people and organizations, this possibility would amplify the value of the initial investment proposed in this project for customers and peer utilities. The company has taken steps to engage its 13 peer water and gas utilities in the area to develop this concept further and received early encouraging feedback from several entities.

Edge Visibility for Safety and Operability: Added to the benefits of the core AMI deployment, enhanced DI capabilities could fundamentally alter the way CalPeco monitors its system,

dispatches its crews, conducts system studies, maintains reliability, and/or identifies customer segments who could benefit from specific rate, DSM, or other nuanced solutions. For a utility that must make emergency real-time decisions in a rigid and remote mountainous terrain susceptible to extreme weather events, enhanced remote sensing and advanced detection capabilities could provide a transformative “head start” for power restoration and emergency response efforts.

Support for the State of California Resilience, Decarbonization and Energy Goals

CalPeco’s project supports a wide range of resilience, decarbonization and other energy goals in California as shown in Table 5.

Table 5: Supports for Resilience, Decarbonization and Energy Goals	
Goals and Sample Programs	Project Leapfrog
Reducing peak load (e.g., Emergency Load Reduction Program (ELRP))	(a) AMI-enabled DR programs aimed at peak reduction helps manage premature degradation and pace the upgrade timing of existing station transformer capacity. (b) Ami-assisted DR also helps shape CalPeco’s peak load to help negotiate greater future flexibility in the NV Energy Supply Agreement.
Encouraging EV adoption (e.g., California Electric Vehicle Infrastructure Project (CALeVIP))	(a) EV detection through a DI application helps identify customers using EVs to offer future targeted programming (e.g. DR aggregation) that benefits all customers. (b) Faster outage detection reduces response time, increasing consumer confidence in the ability to charge a vehicle.
Optimizing the value of existing distributed generation (e.g., CalAPP)	(a) Granular real-time data enables risk-based operations and system planning / dynamic load rating to create opportunities for additional capacity for distributed renewables.
Reducing carbon emissions (e.g., California Air Resources Board CARB and its programs)	(a) AMI removes utility vehicles from the road through automation and remote control and delivers CVR opportunities to reduce energy and peak demands. The calculated reduction of GHG from five vehicles is about 129 metric tons.
Addressing climate change and wildfires (e.g., The California Tahoe Conservancy; and South Lake Tahoe joining the United Nations 24/7 Carbon-Free Energy Compact)	(a) Advanced applications for high impedance detection and temperature alarms, and the Intellisource DR/Platform detect increasing meter temperature as a sign of a potential forest fire, detecting instances of high impedance hot spots.
Enabling greater resiliency (e.g., the California Energy Commission’s Community Energy Resilience Program)	(a) Eliminated exposure of line metering staff to weather events and reduced exposure of response crews through better remotely acquired intelligence. (b) Real-time consumption data enables advanced energy transaction management in support of microgrids or DR aggregation.

Potential Impacts

The project has very limited downside risk, replacing obsolete, less accurate meters with no features other than energy usage registration, with better metrologically equipped smart meters that can be read remotely and include powerful sensing and computing capabilities the output of which can reach system controllers in minutes. Itron’s mesh network and metering technology

is leading the industry in both the strength of communication signal, the edge computing power of metering devices and the diversity of DI apps already on the market.

Looking beyond hardware and software and their basic impact of eliminating manual meter reads, access to regular and granular consumption, demand, voltage, temperature, and other types of data could transform how CalPeco undertakes planning and interacts with its customers. AMI data can help the company further enhance the precision of its cost allocation modelling to benefit future rate cases by fostering more optimal alignment between costs and the customer classes that benefit from them the most. Moreover, and as discussed elsewhere in this volume, regular peak and consumption data will empower CalPeco to devise robust DER aggregation programs to help manage its contractual power purchase costs from NV energy.

Detailed load history data will also help the company’s asset managers develop more advanced Asset Health Index frameworks, ushering in condition- and-risk based project planning and prioritization. Critically, the DI edge computing capabilities associated with temperature and high impedance will help detect potential fires, while meter “last gasp” capabilities can help identify outages quickly and efficiently without relying on the conventional call-in option. Similarly, two-way communication option can enable remote meter shut-offs and turn-on, simplifying the account management and collections value chain. Finally, AMI technology is a fundamental employee safety and GHG emissions reduction enabler, as the company will be able to permanently take 5 vehicles off the road and drastically reduce the number of hours its staff spend behind the wheel – often in inclement weather.

Topic Area 2 (Smart Grid Grants) - Development of Smart Grid Functions Alignment

Table 6 aligns the DOE GRIP Smart Grid priority focus areas with Itron’s features, showing significant overlap between the planned scope of the project and the DOE’s categories for priority investment. Given the status of CalPeco’s metering landscape and overall grid instrumentation, a fundamental AMI solution is a critical building block to the deployment of advanced and transformative communications and analytical solutions.

Table 6: Alignment Between the DOE GRIP Smart Grid Grant Requirements and Project Elements	
GRIP Topic Area 2 Priority Focus Areas	Corresponding Elements of the Proposed Project
Improve the visibility of the electrical system to grid operators, to help quickly rebalance the electrical system with autonomous controls, through data analytics, software, and sensors .	(a) DI edge computing suite of solutions, including the Outage Detection System (ODS) and Operations Optimizer (OO) software modules.
Aggregation and integration of distributed energy resources and other “ grid edge ” devices to provide systems benefits, such as renewable energy resources, electric vehicle charging infrastructure, vehicle-to-grid technologies, and smart building technologies.	(a) Gen5 AMI software enables the DI local energy usage data from the meter to be integrated with feeder-level SCADA data, creating a suite of smart grid solutions. (b) Data can be used to identify EVs and PVs, battery storage, and incentives for peak-shaving DERs.
Enhance secure communication and data flow between distribution components, through investments in optical ground wire, dark fiber,	The fundamental Gen5 Mesh + cellular (as needed) AMI network and UtilityIQ Headend system, provides network management, meter data collection, meter

GRIP Topic Area 2 Priority Focus Areas	Corresponding Elements of the Proposed Project
operational fiber, and wireless broadband communications networks.	configuration, over-the-air firmware upgrades, outage detection, field service, and reporting.
Enhance interoperability and data architecture of systems that support two-way flow of both electric power and localized analytics to provide information between system operators and consumers.	The GridScape solution provides network management and configuration services for Distribution Automation (DA) devices. GridScape enables geographic visualization and full awareness of the underlying telemetry and control devices it supports.
Anticipate and mitigate the impacts of extreme weather or natural disaster on grid resiliency, including investments to increase the ability to redirect or shut off power to minimize blackouts, prevent wildfires.	High Impedance Detection and Temperature Alarms, detect increasing meter temperature as a sign of a potential wildfire.

Enhancing System Flexibility to Meet Program Objectives

The addition of AMI is a critical step towards ensuring upstream flexibility of CalPeco’s transmission-rated assets and the system owned by its supplier, NV Energy. Since CalPeco is effectively embedded into the NV Energy system and does not have access to any electricity market, the Company’s ability to ensure grid flexibility rests solely on its own efforts. To this end, Project Leapfrog would enable the Company to develop and implement increasingly sophisticated Demand Response (DR) programs reduce its billable demand in a manner that helps it unlock flexibility in its unique supply situation (as discussed above) but also to manage the pace of degradation of its equipment. Having greater visibility of station transformer and line loading over granular periods of the 24-hour and 365-day load cycle would help the company ensure that its station equipment’s economic value is optimized. While overloading can lead to premature transformer degradation, overly restrictive limitation rated to loaded capacity may result in assets being underutilized. The presence of frequently updated and detailed loading data (along with other data points like Dissolved Gas Analysis tests) could help the company embark on a hybrid risk- and condition-based asset management journey for its highest value assets. Having access to detail transformer unit load history can help the company manage the loading in a more data-driven way, which would in turn prolong the equipment’s useful lives and create additional capacity for downstream load and/or distributed generation.

Workplan

Summary Statement of Project Objectives

Through Project Leapfrog, CalPeco seeks to deploy:

- A “foundational” modern AMI solution (meter hardware, software, and network devices) capable of over-the-air two-way communication, narrow interval data capturing, and remote disconnect/isolation capabilities.
- A subsequent implementation of enhanced/advanced features, integrations, and distributed intelligence applications as native incremental modules to the core system.

If endorsed and implemented, the project would constitute a major step forward toward digitized grid operations in what is a geographically and climatically challenging service territory, transforming CalPeco’s aging grid infrastructure into a technologically advanced smart grid.

Buy America Requirements

CalPeco’s AMI project requires no greenfield work—installations consist of replacing existing metering assets affixed to customer premises and adding communication devices to certain utility-owned pole infrastructure. Although CalPeco is a for-profit entity to which the Buy America Requirements have limited applicability it places an emphasis on maximizing the local and national economic impact of its investments. To this end, the company seeks to maximize its use of domestic content across its value chain and is prepared for Buy America policy requirements to feature prominently in its Project Leapfrog procurements. The company notes that Itron’s metering equipment is currently manufactured in South Carolina.

Technical Scope Summary

Phase and Timeline	Scope and Approach	Expected End Result
Phase 1 Years 1, 2 and 3	Foundational AMI - Define, design, build, test, and pilot baseline AMI, including smart meters, network infrastructure, software, and system integrations. Deploy AMI to all 49,000 residential and commercial customers across the entire CalPeco service territory. Re-engineer affected business processes, establish a smart meter operations center with new roles and responsibilities, and train staff on new systems and processes. Decision points: <ul style="list-style-type: none"> • First Article Testing (Year 1) • Pilot (Year 2) • Mass Deployment (Year 3) 	(a) All meters and network infrastructure are deployed, secured, and properly functioning. (b) Business processes have been modified or developed and tested. (c) All software applications are fully functional. (d) All affected employees have been trained. (e) New roles have been filled and all knowledge has been transitioned from the vendor to CalPeco. (f) Systems and processes are operating in a stable manner. Key metrics are being met.
Phase 2 Years 2 and 3	Enhanced AMI – Deploy enhancements related to remote disconnect, OMS integration, web presentment, and event automation. Decision points: <ul style="list-style-type: none"> • Testing (one for each enhanced AMI function) (Year 3) • Disconnects/reconnects (Year 3) 	(a) All integrations and software applications are deployed, secured, and properly functioning. (b) Business processes have been modified or developed and tested. (c) All knowledge has been transitioned from the vendor to CalPeco. (d) All affected employees are trained.
Phase 3 Years 3 and 4	Advanced AMI - Conduct a cost-benefit analysis of use cases for DI apps and data analytics. Proceed with the use cases that deliver the greatest benefits to CalPeco and its customers. Decision points:	(a) All integrations and software apps are deployed, secured, and functioning. (b) Business processes have been modified or developed and tested. (c) All knowledge has been transitioned from the vendor to

	<ul style="list-style-type: none"> Testing (one for each DI app or advanced AMI function) (Year 4) 	CalPeco. (d) All affected employees have been trained.
Phase 4 Years 4 and 5	<p>MV-90 Conversion - Convert 20 large commercial and industrial accounts from MV-90 to AMI.</p> <p>Decision points:</p> <ul style="list-style-type: none"> Testing (Year 5) 	(a) All integrations and software applications are deployed, secured, and properly functioning. (b) Business processes have been modified or developed and tested. (c) All affected employees have been trained.

WBS and Task Description Summary

1. *Early Stages:* The project will kick off with a series of technical and functional business process sessions (separate workshops for Itron, the meter installation process, and the CIS (SAP)) to develop the requirements. CalPeco will finalize the meter configuration requirements early in the process as there is a significant lead time to receive meters. The first sample of meters is required for “first article testing” to confirm the meters conform to CalPeco’s specifications. If first article testing is successful, another set of meters will be ordered for a small-scale pilot.

2. *Design Workshops and Environments Deployment:* In parallel to the first article testing and pilot, CalPeco will proceed with the “Design” and “Build,” activities, as led by Itron. The Design phase consists of developing the functional specs and ensuring all requirements align across the various design documents. The Build phase includes establishing the environments (dev/test/prod), setting up a meter farm, and building and unit testing the solutions per the functional specs.

3. *Testing and Process Updates:* includes functional testing, system acceptance testing, regression testing, and user acceptance testing. As preparation for deployment, CalPeco will re-engineer affected business processes, establish a smart meter operations center with new roles and responsibilities, and train staff on new systems and processes. The remaining facets of project readiness involve laying out a plan for the inventory supply chain logistics order for unit production and contracting a third-party installation labor force. The AMI meter deployment includes the network installation and system integrations and the meter installations. The mass meter installation is expected to be complete in year 3 on a sector-by-sector rollout.

4. *Advanced Feature Deployments:* The next two years will be devoted to enhancements beyond the basic AMI benefits, starting with remote disconnect, web presentment and OMS integration in phase 2 and advanced AMI (DI apps and DA functionality) deployed by the end of year 4. Both phases will follow a similar methodology as the baseline AMI phase, with define, design, build, and test activities. In the final year, CalPeco will focus on converting MV-90 to AMI, upgrading the meters and communication technologies.

Milestones and Go/No-Go Decision Points

Each phase contains milestones that demonstrate success and go/no-go decision points with exit criteria before proceeding to the next step, as shown in Table 8.

Table 8: Milestones and Go/No-Go Decision Points	
Milestones that Demonstrate Success	Go/No-Go Decision Points
Phase 1: Foundational AMI	
<p>(a) Meter configuration defined; (b) AMI requirements defined; (c) Solution designed; (d) Environments established (dev/test/prod); (e) First article testing complete; (f) Pilot complete; (g) Testing complete; (h) Network installed; (i) Integration complete (SAP, CIS, MDM and legacy subsystems) (j) Staff trained; (k) Business processes deployed; (l) SMOC established; (m) Meters installed; (n) Customers billed on AMI</p> <p>SMART Milestones: Pilot (year 1): The pilot achieves a minimum daily data collection performance of 95% (via meter to meter to repeater to router to data collection to MDM to CIS). Mass Deployment (years 2 and 3): AMI communications meet all SLAs. For example: daily register read and interval success rates for each sector - at a minimum, the AMI solution acquires and makes available to downstream systems 98% of all configured register reads and interval reads last 24-hours. Mass Deployment (year 3): A minimum of 95% of residential and commercial meters are deployed.</p>	<p>FAT: The FAT test results validate that the meters conform to the specifications.</p> <p>Pilot: The pilot validates meter to billing connectivity with a minimum daily data collection performance of 95% (via meter to meter to repeater to router to data collection to MDM to CIS).</p> <p>Deployment: A minimum of 95% of residential and commercial meters are deployed.</p>
Phase 2: Enhanced AMI	
<p>(a) Remote disconnect/reconnect functionality deployed; (b) AMI integrated with the ODS; (c) Web presentment deployed (d) Automated event management deployed (e) Staff trained; (f) Business processes deployed</p> <p>SMART Milestones (year 3): DI app is deployed across the entire residential and commercial meter population.</p>	<p>Testing (one for each enhanced AMI deployment): Test results validate that the functionality matches the specifications. For example: Disconnects/Reconnects: Test results validate remote disconnect and AFN identification. Web Presentment: Test results validate that web presentment consumption data matches billing data.</p>
Phase 3: Advanced AMI	
<p>(a) Cost-benefit analysis complete; (b) Testing complete; (c) Staff trained; (d) Business processes deployed; (e) DI apps and/or advanced analytics solutions deployed</p> <p>SMART Milestones (year 4): DI apps return the same results as results from field meters.</p>	<p>Testing (one for each advanced AMI deployment): Test results validate that DI apps return the same results as CalPeco receives from the field per the specifications. For example: High Impedance: App accurately detects poor electrical connections. Outage Management: App accurately identifies restored power. High Temperature: App accurately reports high temperature when threshold is exceeded.</p>
Phase 4: MV-90 Conversion	
<p>(a) Communications upgraded; (b) MV-90 integrated to AMI; (c) Testing complete; (d) Staff trained; (e) Business processes deployed; SMART Milestones (year 5): 100%</p>	<p>Testing: Test results validate that meter data is collected by the AMI head end and processed for billing.</p>

of CalPeco's large commercial and industrial customer accounts are integrated with AMI.

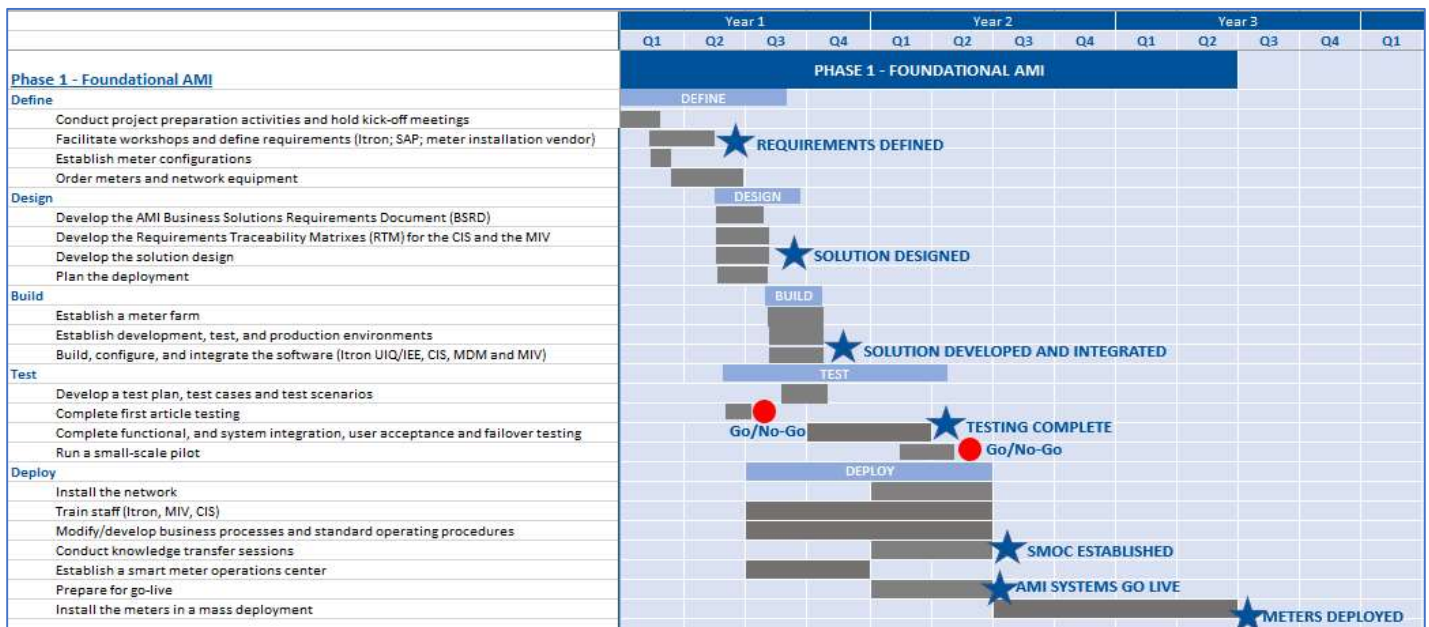
End of Project Goals

By the end of the five-year project, CalPeco will have achieved the following goals:

- An AMI network with smart meters is deployed across 100% of service territory.
- Effective elimination of regular on-cycle manual meter reads and associated costs.
- The AMI collects 99% of 15-minute interval reads from active meters on a daily basis.
- 100% of interested customers can access their consumption data (e.g., via Green Button).
- Fleet of metering-related vehicles is reduced by 50%.
- CalPeco achieves 99% accuracy for remote meter disconnects and reconnects.
- CalPeco is using AMI data to better direct and coordinate outage response.
- AMI data is used to update cost of service studies in the first-rate case post-deployment.
- AMI data is used in load research and transformer Health Index framework development.

Project Schedule

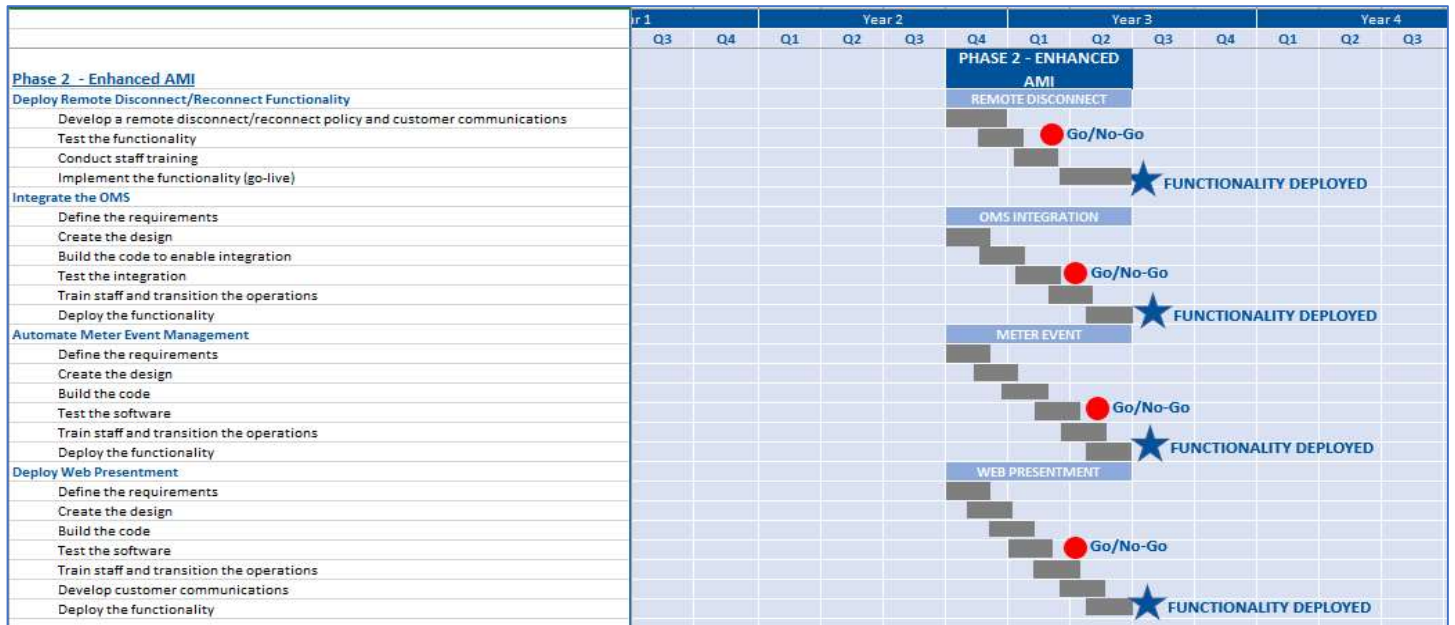
Phase 1: Foundational AMI



Phase 2: Enhanced AMI



Phases 3 and 4: Advanced AMI and MV-90 Conversion



Project Management Plan

The Overall Approach to and Organization for Managing the Work

CalPeco plans to roll out the AMI project in four phases over five years. **Phase 1** sets the foundation by defining, designing, building, testing, and deploying baseline AMI, including smart meters, network infrastructure, software, and system integrations. A series of workshops on device configuration, systems integration requirements, and solution design will inform key decisions to support functionality in future phases. **Phase 2** delivers enhanced functionality to the base AMI deployment. **Phase 3** transforms operations and the customer experience by

deploying distributed intelligence apps, data analytics, and distribution automation. **Phase 4** upgrades the data collection system and communication protocol for the utility’s largest industrial and commercial accounts.

In planning and deploying foundational AMI technology and advanced capabilities like edge computing in a single project, CalPeco expects to derive economies of scope, scale, and sequencing through synergies in the device design and system integration workshops, along with network planning, deployment, and testing work.

The project will be overseen by an AMI steering committee which is the ultimate governing body for timely and critical decision making. The steering committee will consist of the executive sponsor, the project manager, and key business owners. CalPeco will develop a project charter that documents the project objectives, project governance scope, timelines and milestones, and roles and responsibilities of the project team. The charter provides staff, vendors, and stakeholders with a common understanding, helps manage expectations, and is a tool to identify and manage changes to and deviations from the scope, timelines, or processes.

Critical Handoffs/Interdependencies Among Project Team Members

To reap the benefits of an AMI implementation, the AMI system needs to be fully integrated with other critical utility systems, workflows need to be redesigned, and staff need to be trained. Key handoffs and interdependencies are listed in Table 9 below

Table 9: Critical Handoffs/Interdependencies	
Handoff/Interdependency	Approach
<i>Knowledge Transition: Vendor → Staff</i>	Require that Itron and equipment suppliers deliver training on their solutions employing a “train-the-trainer” model.
Operations Responsibility Transition: Vendor → Smart Meter Ops Center (SMOC)	Establish service level agreements for SMOC responsibilities.
Code Transition: “Build” → “Test”	Document and get agreement on a set of specifications that forms the basis for test cases and details the criteria for final acceptance.
Interdependencies across business process development	Hold discovery sessions with stakeholders from across the organization to redesign effective end-to-end business workflows.
Interdependencies across sub-projects	Develop and manage an integrated project workplan.
Interdependencies across vendors in systems integration	Hold foundational AMI workshops to specify the integration points with other IT and OT platforms.

Managerial Tools and Work Execution Aides

CalPeco’s planned project management and governance systems and tools listed below will help ensure proper management and the technical success of the project.

- *Project Governance Charter*: Provides a framework for managing and supporting the project. Defines scope, decision-making rules, reporting structures, and delivery approach.
- *Integrated Project Workplan*: A holistic project plan that incorporates all sub-projects and maps associated dependencies between all vendors involved in delivery across the phases.
- *RACI Chart*: Identifies responsibilities and accountabilities for each project team member.
- *SLAs*: Service level agreements with the vendor for performance metrics.
- *Solution Architecture*: Provides the project release plan for the overall solution architecture.
- *Acceptance Criteria*: Measures actual project outcomes vs. expected outcomes.
- *Change Control*: Supports appropriate governance and decision-making for project changes.
- *RAID Log*: Manages Risks, Assumptions, Issues, and Decisions for all deliverables tied directly or indirectly to the project
- *Deliverable Review Matrix*: Identifies key deliverables, their associated acceptance criteria, and reviewer/approver lists.
- *Process Modelling*: System for creating business process flows and documentation to re-engineer processes.

Project Risk Management

CalPeco has already started to capture known and potential risks and develop mitigation strategies. Key risks for the major activities are listed in Table 11.

Table 10: Risks and Mitigation Strategy		
Activity	Key Risk	Mitigation Strategy
Requirements Definition	Requirements do not consider future functionality over the lifespan of AMI.	Hold requirements workshops with key SMEs from all departments. Hold meter config workshops to flesh out technological capabilities and develop future-proof meter configurations.
	Scheduling issues with business resources could cause delays and increase budget	Ensure business units treat project as a priority over daily operations and have back-ups

Systems Integration	Integration issues with all existing subsystems and vendor platforms	Properly scope integration requirements and include SLAs and a KPI tracking matrix in contracts. Require a dedicated resource from each vendor.
Testing	Issues encountered within First Article Testing (FAT)	Dedicated vendor SME to address any issues identified.
	Pilot testing runs into critical defects that push the schedule out.	Run a pilot in a small geographical area that is representative of CalPeco's terrain for solution validation and to ensure that CalPeco's communications requirements can be met with the chosen meter.
	Cellular signal not available where needed or there are data communications issues.	Work with cellular service provider to determine if tools are available to check signal strength ahead of infrastructure installations, and work with vendor to identify the areas that require a signal booster/repeater/antenna,
Field Deployment	CalPeco/Itron need to secure a qualified workforce.	(a) Decide on action plan for resource hires and training program from the community.
	Customers may have safety and other concerns about the new technology.	(a) Develop a public outreach plan based on lessons learned at other utilities to explain the reasons for and benefits of the new system.
	CalPeco could encounter community or labor disputes.	(a) Create information packages explaining work and get workforce community buy-in.
	Project falls behind schedule due to unforeseen or unaccounted issues, such as a large weather event that halts deployment	Create buffer in the schedule to account for deployment issues. Have a weather mitigation plan (alternate location to pick up meters on standby).
	Meter deliveries are delayed, causing downstream effect and increase to budget (paying crews standby costs)	Create a logistics plan for potential issues to continue providing value added work in case meter supply is disrupted.
	Deploying meters ahead of network infrastructure could leave CalPeco blind to any meter or communication issues until network available.	Ensure the pilot and FAT cover a wide range of scenarios.

Handling Project Changes and Eliciting Organizational Change

Decisions affecting project scope, budget, schedule, or functionality will be approved via the Change Approval Board (CAB). All program team members will be responsible for identifying scope changes and bringing them to the attention of the project manager for presentation to the CAB. During the design stage, the project manager will be responsible for focusing the program team on the approved work scope and overseeing design and procurement activities to ensure work scope details do not deviate from the approved plan.

The project manager will initiate and escalate a change request for any changes to scope, schedule, budget, or functionality. A change request defines a change to the scope, schedule, or deliverables. The following guidelines will be used in assessing potential change requests:

- The changes should be required by the core solution.

- The changes should be supported by a business case.
- Impacts to schedules must be identified prior to approval of assessment work.
- Business risks of *not* making the change must be documented.
- Changes that are not core should not be considered once in the design/build stage.

Nadler and Tushman’s Congruence Model framework for change management is expected to be employed to structure and facilitate the broader organizational change management activities (the “Inputs → Task – Individual – Formal Organization – Informal Organization → Outputs” framework devised to effect comprehensive organizational change). The key advantage of this approach is the degree of attention it pays to the informal organization (i.e. attitudes, norms, commonly held beliefs that have impact on execution of tasks by individuals – sometimes in spite the presence of formal rules that may dictate the contrary).

Quality Assurance/Control

Working with Itron, CalPeco will develop a master testing plan for the AMI project that includes schedules, test criteria, test cases, data requirements, test scripts, dependencies, environment requirements, and test team resources. The AMI project will proceed through different phases of testing as outlined in the Table 12. QA activities related to each testing phase focus on test case traceability to requirements with gates based on defined test criteria as pass/fail measures.

Table 11: Test Phases		
Test Phase	Description	Responsibility
First Article Testing	Verifies endpoint and CGR functionality	CalPeco, supported by Itron
Unit Testing	During the build phase, individually validates each uniquely testable part	Itron
Functional Acceptance Testing	Confirms that all AMI system components meet specified functional and business requirements	Itron
System Integration Testing	End-to-end testing across all interfaced systems	CalPeco, supported by Itron
FAN and WAN Connectivity testing	Tests network coverage	Itron
User Acceptance Testing	Tests in “real world” situations	CalPeco, supported by Itron
Sector Acceptance Testing	Verifies meter communication in each sector	Itron
Final System Acceptance Testing	Validates that the entire production network meets the test criteria	Itron

Technical Qualifications and Resources

Qualifications and Expertise

The project team, currently consisting of CalPeco (Applicant) and Itron (Subrecipient) staff, is comprised of career utilities professionals with a long track record of successful deliverables and experience from field to boardroom. In addition to the CalPeco and Itron staff, the company

expects to engage the services of technical consultants to facilitate planning and testing, along with an IT systems integrator to establish interfaces between the AMI ecosystem and the necessary field, back office and cloud tools.

In planning the deployment, CalPeco also expects to be able to draw on recent experience of its corporate affiliates in the Empire District Electric Company who had recently completed an Itron AMI system deployment for a 177,000-customer system serving adjacent corners of Missouri, Kansas, Arkansas, and Oklahoma. Along with SME access, the team will be able to benefit from the process and interface design artefacts developed during Empire’s workshops. This synergy is expected to streamline the preparatory stages and enhance CalPeco-specific planning and design considerations with the recent real-world experience of their corporate peers. Table 12 below lists the key members of the company’s Project Team.

Name & Education	Project Accountabilities & (Company Title)	Years of Sector Experience	Unique Skills Relevant to Project Success
Tami Fruhwirth <i>B.S., Business Management</i>	Project Manager <i>(Project Manager, Process Improvement)</i>	30	Meter reading and meter shop operations management, collections process logistics oversight, software development and testing project management, Smart Grid technology implementation oversight.
Lindsay Maruncic <i>MBA, M.S., Finance, LL.M. Natural Resources</i>	Executive Sponsor <i>(Senior Director, Operations)</i>	12	Integrated capital planning and implementation. Strategic planning, cross-departmental leadership. Experience delivering large-scale construction projects in CalPeco’s service territory. Experience coordinating emergency response events in the local area.
Joseph Sparks <i>Highschool Diploma</i>	Integration and Field Deployment SME <i>(Manager of AMI Operations)</i>	7	Led AMI implementation, network stabilization and several upgrades to supporting systems at CalPeco’s corporate affiliate Empire District Electric. Leads AMI hardware and network operations team of 16 members.
Blaine Ladd <i>B.S. Electrical Engineering</i>	Field Operations SME, Labor Engagement Lead <i>(Manager, System Reliability)</i>	21	Emerging technologies implementation lead, including distribution automation, distribution fault anticipation, high impedance fault detection, and use of fast trips as a means of ignition prevention.
Jennifer Guenther <i>BA, General Studies</i>	Community Engagement and Economic Development Lead <i>(Manager, Engineering Business)</i>	10	Extensive knowledge of business and community organizations in the CalPeco service territory from leading the local Business and Community Development group for over a decade.
Joel Rivera <i>M.S. Electrical Engineering</i>	Operations Technology Integration SME <i>(Director, Control & Dispatch)</i>	21	Manages the company’s control room operations and the associated processes. Enforced Clearance & Control Rules and act as control authority as required to ensure safe and reliable operation of the distribution system.

Rick Dalton <i>B.S. Civil Engineering, P.E.</i>	Engineering SME <i>(Senior Director, Engineering)</i>	30	System planning, engineering, and design oversight of the majority of CalPeco’s capital plant renewal and expansion over the past decade. Wildfire mitigation program development lead.
Stephen Moore <i>B.A. General Studies</i>	Lead, Construction Management <i>(Manager, Operations)</i>	13	Daily T&D operations activities oversight. Experience in technical change management work, benchmarking, and organizational restructuring.

Equipment and Facilities

As an electric distribution utility, CalPeco possesses the fleet, facilities, and IT infrastructure required to support the planning, and construction execution phases. CalPeco operates two operating centers across its electric service territory, which can accommodate the project team’s requirements in terms of training, workshop and meeting space, minor equipment repair, materials and basic consumable implements, distribution etc. CalPeco information technology is also adequately set up to support the project systems integration.

As noted in the Community Benefits Plan, CalPeco’s permanent warehouse facilities are unlikely to be able to accommodate the spatial requirements of AMI meter and network equipment shipment. To this end, the company began exploring the possibility of collaborating with the local Washoe Indian Tribe regarding establishment of a warehouse on their territory. While discussions remain in the early stages, both sides have expressed interest in the concept.

As noted in the Technical Description, Innovation, and Impact section, CalPeco will be able to leverage the IEE Meter Data Management System that has been already developed at Empire. While CalPeco will have to pay its own licensing costs, the initial deployment, testing, and integration expenditures of the IEE project have already been incurred, creating a synergy and ensuring that a critical portion of the AMI IT stack has been well tested and understood by SMEs to whom CalPeco will have access during and after the implementation.

The company is also currently in the process of implementing a new SAP system for all of its critical enterprise functions. The addition of AMI and DI edge computing technology to the core SAP platform (potentially within a span of only two to three years) would serve as a dual catalyst for broader digitization of other parts of CalPeco’s value chain—to the extent allowable by funding availability—the points in the lifecycles of existing solutions, and the opportunity cost of other projects. While SAP tools renew the core centralized operations at the heart of the utility, the AMI / DI stack brings in digitization from “outside in,” thus creating scope and sequence economies that help maximize the use and help de-risk the adoption of both sets of solutions.

Previous Innovative Work Efforts

CalPeco is highly experienced in completing complex and multifaceted projects that are comparable to or exceed the complexity of the proposed project. Among these projects are two

utility-scale solar generation facilities with a total output of 60 MW that the company has developed and commissioned in recent years. Given CalPeco's terrain, the projects are physically located in Nevada and work to offset CalPeco's direct load on NV Energy's system, which entails an innovative solution both in design and collaboration with an upstream utility. Moreover, the solar projects were one of the first energy installations in the United States to make use of Tax Equity Financing partnership.

Another complex and innovative project recently delivered by CalPeco's California Team is the Sagehen Microgrid – the first such utility-owned facility anywhere in CalPeco's North American footprint. The Sagehen Microgrid comprised of solar panels, storage batteries and necessary system isolation and software infrastructure supplies power over the summer months to a remote UC Berkeley research facility that is served by an aged and deteriorated feeder several miles in length. Since there are no other customers on this feeder, CalPeco uses the solar and storage assets to power the research facility during the time of heightened forest fire risks. Along with mitigating the fire hazard, the installation allows the company to defer renewal of the service line, or potentially completely phase it out without replacing it.

Finally, CalPeco's California team is uniquely equipped with the managerial tools required to act quickly and decisively in high-risk situations. Given the incidence and scale of recent forest fires that affected the company's service territory. CalPeco's ability to identify and manage risks and make complex tradeoff decisions that prioritize the welfare of their customers has been tested and refined in multiple emergencies. Having accomplished these major and risky projects, and while possessing experience and expertise at delivering a variety of other initiatives, the project team is optimally positioned to make the proposed AMI project a success.

CalPeco also notes that Itron is a leading AMI technology manufacturer and support services provider. Being the largest and most established company in the AMI marketplace, the subrecipient is capable of quickly assembling robust teams of diverse technical specialists on all subjects involved in the AMI value chain. Having witnessed its corporate affiliate collaborate with Itron on what ended up being a project completed on time and on budget in the middle of the COVID-19 pandemic, CalPeco has the confidence in Itron's ability to deliver the same capacity and rigor in the proposed Project Leapfrog deployment.

Time Commitment

Overseeing the entire project, Ms. Fruhwirth will be committed to the project at 60% capacity. The rest of the CalPeco team members retain some core utility projects and will be allocated to the project at various intervals, as needed. Itron's key resources, including a program manager and project manager on the back-office deployment side and an implementation manager on the field deployment side, will be devoted full-time to the project during those deployments. Other team members; commitments will vary depending on their roles and the stage of the initiate. While Ms. Guenther's involvement is expected to peak in the first year and remain consistent for the rest of the five-year period, Mr. Moore and Mr. Rivera are expected to be involved in the

reverse order given their involvement with operations areas that interact with and immediately benefit from the proposed grid edge computing DI capabilities.

Additional Comments Pertaining to Application Requirements

Additional Technical Services

CalPeco does not require any technical services to be provided by DOE/NNSA FFRDCs.

Duplicative Funding

CalPeco confirms that it is not a recipient of any active awards of other federal funds that would be duplicative or overlapping of the funds requested from the DOE in this application

The ODIN Reliability Reporting Initiative

Having learned of the ODIN program through the review of the GRIP Program FOA, CalPeco has carefully reviewed the information available on the initiative and has reached out to the organizers to learn more. Moreover, the company currently finds itself amidst an Outage Management System (OMS) upgrade project that will deploy a platform that supports the ODIN initiative. Considering this fact, the company has also reached out to its vendor to learn more about the logistical steps associated with this initiative, and its congruence with the current and future states of the company's outage data collection and reporting processes. CalPeco expects to evaluate the net benefit of participation in the ODIN program after the ongoing upgrades to the OMS baseline AMI functionalities are fully integrated.



March 06, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

RE: Letter of Commitment / Liberty Utilities (CalPeco Electric) LLC's Proposal to the BIL- Grid Resilience and Innovation Partnerships (GRIP) Program

To Whom It May Concern,

Itron, Inc. ("Itron") is pleased to support Liberty Utilities (CalPeco Electric) LLC ("Liberty") in its application to the Department of Energy's DE-FOA-0002740 announcement. Liberty and Itron will collaborate to deploy a state-of-the-art Advanced Metering Infrastructure (AMI) framework and additional edge computing and sensory elements that will provide a highly robust and scalable foundation for modernizing Liberty's electricity grid in its California service territory.

Project Leapfrog's goal is to enable the zero-carbon grid of the future by deploying technologies and processes that improve service reliability, support core community benefits, and provide equitable energy access to all. The Project includes core elements to provide an ecosystem of intelligence that can operate the grid more effectively than the traditional top-down methodology of visibility and control.

At Itron, we help our partners bring innovative solutions to the market that help drive efficiencies, improve the quality of service, and create more resourceful communities. Itron is proud to have been partnering with Liberty for over four years to implement AMI and related solutions. Itron will support the project by providing next-generation metering devices equipped with edge computing sensors and advanced measurement and communication capabilities (Gen5 Riva meters), associated software, and services to support the project.

Itron encourages the DOE to fund the project and commits to act as the company's partner in the procurement, installation, and integration of the technology in scope over the project term. Should you have any questions regarding this support, please do not hesitate to contact Hussain Rizvi at 647-678-3448 or Hussain.Rizvi@itron.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Joel Vach", is positioned above the typed name.

Joel Vach
Vice President – Tax and Corporate Treasurer
Itron, Inc.



U.S. Department of Energy
1000 Independence Ave., SW
Washington D.C. 20585

March 10, 2023

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "**Project Leapfrog**" IIJA GRIP Application.

On behalf of the Washoe Tribe's Emergency Operations Center, I am offering my support of Liberty Utility's Project Leapfrog and their recent application for Federal Government funding through the DOE Grid Innovation Program. Our Hung A Lel Ti community that is supported by Liberty Utility is a very remote and vulnerable community. We have a large concentration of tribal Elders and medically vulnerable, and many who are on extremely fixed low incomes, who live in Hung A Lel Ti. The potential ability to identify outages in more real time, as well as the rate relief, and the cooperative partnership opportunities that this project would bring to the Hung A Lel Ti Community, would be extremely valuable to the improving their quality of life as well as enhancing our emergency management efforts to obtain greater community resiliency.

This isolated tribal community located in Alpine County, CA and the rugged foothills of the Sierra Mountain Range, has historically experienced more natural disasters than any of our other communities. Within the past two years they have been impacted by the Tamarack wildfire of 2021, as well as a small earthquake. Shortly after, they were challenged by the ensuing mudslides of 2022 and the intense snowstorms of 2022 and 2023. The need to expedite outage identification has become increasingly more important to our humble rural community. The opportunity to provide rate relief to our elderly, and impoverished residents is also of great importance.

Furthermore, The Washoe Tribe's Emergency Operations Center would be very interested in exploring opportunities to partner with Liberty Utility to help coordinate the identification of possible staging and warehousing sites for this project within the community. Likewise, we are looking forward to exploring potential job skills training opportunities for community members. Employment opportunities for this remote and rural community are very limited, and families have faced reoccurring economic impacts, not only from the frequent natural disasters described above, but from the extended lock down, isolation, and loss that was caused by the COVID-19 pandemic. We are always eager to explore possible economic development opportunities that would benefit the community's residents.

Thank you for this opportunity to offer my support.

Ken Quiner

KEN QUINER
EMERGENCY MANAGER





COUNTY OF ALPINE
Administration
Nichole Williamson, CAO

U.S. Department of Energy
1000 Independence Ave., SW
Washington D.C. 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "**Project Leapfrog**" IJJA GRIP Application

To Whom It May Concern,

Thank you for bringing to our attention your recent application for Federal Government funding through the DOE Grid Innovation Program. Alpine County would like to offer our support for Project Leapfrog. The County is interested in the advanced metering technology, the rate relief and the partnership opportunities that this project would bring to the County and our constituents. Liberty Energy is more than a utility provider in Alpine County. They are members of our community. Alpine County has recently experienced multiple natural disasters, from the Tamarack fire of 2021 to the ensuing mudslides of 2022 to the intense snowstorms of 2022. The County was in declared states of emergency from July 2021 through December 2022.

We are very interested in the potential for early detection of temperature or circuit fluctuations that could lead to forest fires. The need to expedite outage identification has become increasingly important to our rural community. Early detection is critical to our ability to mobilize emergency services and notify residents of potential outages and evacuations caused by extreme weather events. The opportunity to provide rate relief to our small businesses and residents is also of interest. The economy of Alpine County is primarily small businesses. These businesses experience significant impacts from natural disasters and interruption is in operations. Unlike larger businesses, if our core small business community experiences these interruptions, it threatens the livelihood of their business. Due to our small population, any loss of sales tax revenue has an effect on the County's ability to generate revenue for services.

Furthermore, Alpine County would be interested in exploring opportunities to partner with Liberty and the Washoe Tribe to provide staging and warehousing for this project. Our remote and rural community has seen an economic hit not only from the natural disasters described above but from the lock down of the pandemic. We are eager to explore any economic development opportunities that would benefit our small local businesses or residents. Should funding be awarded to Liberty, we would also be interested in supporting permit approval process and any other logistics.

Thank you for your consideration.

Sincerely,

Nichole S. Williamson

Nichole Williamson
County Administrative Officer

Cc:
Senator Diane Feinstein
Senator Alex Padilla
Congressman Kevin Kiley

SIERRA COUNTY

Department of Public Works and Transportation

P.O. Box 98
Downieville, California 95936
(916) 289-3201
Fax (916) 289-3620



Tim H. Beals
Director

March 10, 2023

U.S. Department of Energy
1000 Independence Avenue, SW
Washington D.C. 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "Project Leapfrog" IJA GRIP Application.

Sierra County would like to offer its strong support for "Project Leapfrog" and the application for grant funding being filed by Liberty Utilities under the "Grid Resilience and Innovation Partnership (GRIP)" program. The County is critically interested in the reduction of outage response time, rate relief for low and fixed-income constituents, and the anticipation and preparation for extreme weather events and wildfire.

The Liberty Utility territory within Sierra County is very rural and populated with many fixed income and low income residents and the region experiences extreme weather events every year and sometime multiple events are not uncommon. These events may originate as wildfires, extreme snow events, wind events, and flooding and often time will occur at the worst possible time for the infrastructure of the County, its residents, and its emergency services. The capital support of this project would be of great benefit to the community and the ability to expedite outage response time alone is of paramount value to the residents, businesses, and emergency response agencies within the County. The County would also be willing to consider exploring ways that the County and Liberty Utilities could partner to assist in program logistics, sharing of existing data bases and GIS resources, and any required permitting.

Sierra County is remote, very rural, and dependent upon reliable power sources to operate emergency response, 9-1-1 communication, and provide security for business interests and quality of life for County residents and visitors. This remote condition and the limited access to broadband/internet makes a project like this a very high priority.

Thank you and we would sincerely appreciate your support of this worthwhile project.

Sincerely,

Tim H. Beals
Director of Public Works and Planning
Director of Emergency Services



March 9, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington D.C. 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "**Project Leapfrog**" IIJA GRIP Application.

To Whom It May Concern,

I am happy to write this letter in support of the above referenced grant application. Our organization provides adult education and workforce training to the communities in California and Nevada along the southern shore of Lake Tahoe as well as Alpine County, CA to our south. These are all within the service area of Liberty Utilities.

Advance has a strong partnership with our community college, the local workforce board, local industry, and a history of rapid deployment of training programs. This means that our support for this project could take a variety of forms but the most obvious ones at this time are listed below.

- Designing and delivering project specific training for new and existing jobs.
- Providing wrap-around services to support individuals as they enter training/education, including specialized support for English language learners, under-employed, and those current working in low-wage/low-advancement jobs.
- Supporting outreach not only about new job/career opportunities but using our existing client network to provide outreach/education for the general public on how the new technology may impact their lives.

I am looking forward to working with the amazing team at Liberty Utilities in building better systems and better opportunities for our community. Thank you for considering this letter as you review their application.

Please let me know if you have any questions or require additional information from me.

Sincerely,

A handwritten signature in black ink that reads "Frank Gerdeman".

Frank Gerdeman
Director
fgerdeman@ltcc.edu



March 9, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington D.C. 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "**Project Leapfrog**" IJA GRIP Application.

To whom it may concern,

My name is Heidi Hill Drum and I am writing in support of Liberty Utilities application for funding through "Project Leapfrog". As Tahoe Prosperity Center's CEO, I understand the importance of our community's need to provide residents and businesses with the latest technologies and technological infrastructure to bolster growth and diversity within the region.

Due to the unique nature of the Tahoe Basin's regulatory and governance structure it can be very challenging to accomplish new initiatives and projects. We believe Liberty Utilities has the resources and support to facilitate deployment of Advanced Metering Infrastructure (AMI) technology as well as implement the suite of additional operational communications and grid edge computing capabilities that the newest generation of AMI meters offers.

In addition, the following project goals align with and will benefit current Tahoe Prosperity Center goals and projects:

- Real time carbon-intensity monitoring
- Advanced management of consumption needs and load research enablement
- Rate relief for AMI implementation (especially in light of our housing initiatives)
- Greater insight into customer owned batteries and EVs in our system

I have confidence that funding from "Project Leapfrog" will enable Liberty Utilities to provide efficient service and delivery of AMI to manage and improve the changing needs of our community.

Heidi Hill Drum

CEO, Tahoe Prosperity Center

Project Leapfrog

Community Benefits Plan (CBP): Job Quality and Equity

1. Plan Overview

1.1 Progress Overview Since the Last Application Juncture

CalPeco has been actively engaging with our community since the concept paper submission in December of 2022, to spread awareness of the potential project and identify opportunities where this project could create local jobs and support diversity & inclusion by working with diverse suppliers. Staff from technical planning, community development, and human resources have conducted at least 20 in-person engagements with local labor unions, government organizations, non-profit groups, and the Indian Tribe of The Washoe People to seek out opportunities where this project could stimulate economic development in disadvantaged communities (DACs).

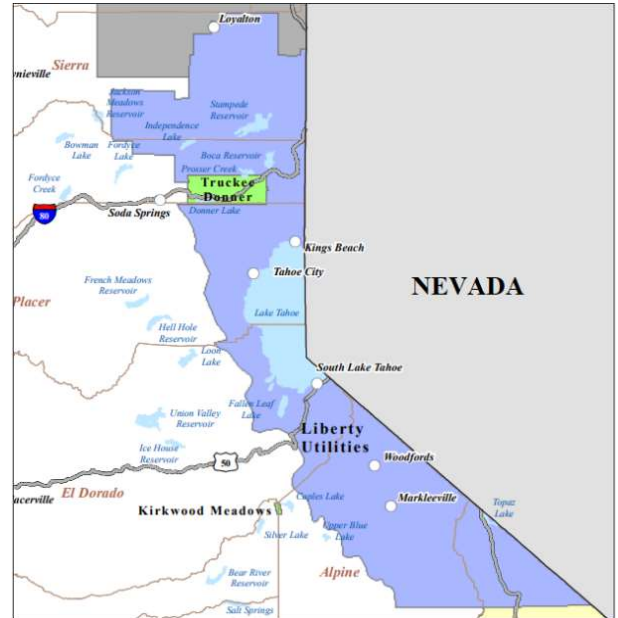


Figure 1: CalPeco Service Territory

As this document indicates, these early engagements have yielded multiple promising avenues along which the company can explore collaboration in the event of successful DOE award of the proposed funding. Beyond exploring community and labor partnership opportunities, CalPeco has significantly firmed up its expectations of the direct economic impact associated with the project and conducted further research into the population of the DAC residents in its service territory. Overall, the company is proud to present the progress underlying this second reporting juncture to the DOE and looks forward to continuing the progress on this important initiative.

1.2 Project Background

Liberty Utilities (CalPeco Electric) LLC (“CalPeco”) provides essential electricity service to over 50,000 customers in and around the Lake Tahoe Basin region in California. The terrain is mountainous, heavily forested, and faces the unique extreme risk of wildfires from June to November every year. This project seeks DOE support to enable baseline AMI capabilities along advanced distributed intelligence (DI) grid edge computing analysis streamline operations, reduce the company’s carbon footprint and provide enabling pathways for management of CalPeco’s unique supply arrangement with NV Energy.

The region has little manufacturing or heavy industry, which typically provides communities with higher-paying jobs and comprehensive benefits plans as well as incentivizes the presence of educational institutions to ensure steady workforce pipelines. Instead, the economic activity is dominated by tourism with the majority of jobs being supplied by lower-paying service industries

such as hotels, casinos, and ski resorts¹. A complicating factor on the regional economic dynamics is the fact that upward of 60% of the company's residential customers are out-of-town second homeowners that use their Tahoe residences for weekend recreation and/or vacation rentals. While this dynamic helps bring additional purchasing power into the region from the more prosperous parts of the State, it also distorts the picture of the Tahoe Basin's economic reality. While only 23% of the company's customers live in what the US Government's Climate and Economic Justice Screening Tool ("CEJST") classifies as Disadvantaged Communities ("DACs") when adjusting for the percentage of out-of-town owners, the number of DAC residents occupies a much more prominent share of CalPeco's customer population.

This region is also extremely susceptible to wildfires which have previously resulted in catastrophic damage and pose a significant threat to the health and safety of our customers. Approval of Project Leapfrog would result in meaningful economic development for the region, particularly for the creation of up to four permanent new high-quality jobs at CalPeco, in addition to nearly 20 at the peak of deployment work. With pay rates above the prevailing levels and including comprehensive health and retirement benefits, CalPeco is one of the preferred employers in the region. The new jobs will be at the forefront of the energy industry and tie together multiple related disciplines, including telecom network management, field hardware and software operations, and data analytics (among others). These new employment opportunities are of added importance to CalPeco and the community as they will present an opportunity for upskilling and retraining of some of the works whose current day-to-day activities the project would make redundant. As the company moves towards AMI implementation, it will invariably face the issue of the current manual meter reading position becoming redundant. The new, higher technology-intensive Smart Metering Operations Center (SMOC) jobs would create opportunities for the interested incumbents to attain new skills and transition to more technologically advanced, higher-paid work.

2. Community & Labor Engagement

CalPeco recognizes that community partners are great enablers to ensure that Project Leapfrog is delivered within the committed timeframe and at the cost estimated. By proactively engaging with the community, we are:

- Hearing feedback directly from those in DACs about their specific energy needs
- Preventing potential project delays due to lack of engagement
- Building the eligibility of the local workforce to take part in the project

Targeted Community and Labor Engagement Outcomes over the Project Duration:

- Zero project delay days due to preventable stakeholder engagement oversights.
- Establish a Community Partnership Agreement with the Washoe Tribe
- Attain consensus with Local IBEW 1245 on the transition planning for meter readers
- Conduct formal discussions with all gas / water utilities in the area on AMI network sharing

¹ https://tahoeprosperty.org/wp-content/uploads/Indicators-Report-2020_FINAL.pdf

2.1 Overall Approach to Engagement

CalPeco has a Business and Community Development (BCD) team of five employees dedicated to community outreach and key accounts management, which helps ensure customers are aware of support programs available to them and also communicates upcoming major projects in advance of planning to garner feedback and identify opportunities for improvement and support. This team provides a direct link to the community and actively ensures that unique customer needs are identified and addressed. This includes opportunities for business development and partnering which have positive impact on the economic conditions of the Tahoe region.

After receiving engagement to continue with its concept paper, our team developed a three-pronged plan to engage with communities and labor groups on Project Leapfrog, comprised of:

- A – Digital Engagement & Media Outreach
- B – In-person Engagement with Community Enablers the following.
- C – In-person Engagement with Potential Delivery Partners

The plan also includes a Supporters, Neutral, Resisters, and Detractors (“SNRD”) stakeholder map to identify the most appropriate groups for engagement and how to maximize participation given feedback received.

Stakeholder Group	Key Groups or Organizations	Key Engagement Priorities
Supporters	Commerce chambers, municipal governments, large customers sensitive to outage costs, contractors, medical and emergency management organizations.	<i>Capitalize on their enthusiasm</i> – identify meaningful opportunities to reflect the facilitation or resources of these organizations in formal Agreements.
Neutral	Local labor unions, customers in system areas with multiple redundancies (or own backup power), Indian Tribes, local government officials.	<i>Emphasize their points of value</i> – identify what matters to neutral stakeholders who could be pivotal and focus on these issues to convert them into supporters.
Resisters	Vulnerable consumers sensitive to rate increases and organizations advocating on their behalf.	<i>Listen, learn, incorporate, re-engage</i> – capture concerns in a way that does not assume “knowing the answer.” Incorporate concerns into plans & regularly re-engage.
Detractors	<u>None identified</u> – but could include landowners, or local conservation groups who may have reasons to actively interfere in access / work on specific sites.	<i>Focus on integrative rather than distributive outcomes.</i> Work to proactively identify through site-level project planning work (once DOE funding approval is granted).

Table 1: Stakeholder Map of SNRD Framework

2.2 Engagement Activities and Outcomes to Date

(A) Digital Engagement & Media Outreach

Since most of CalPeco’s employees are also community members, they began to spread awareness of the project internally through its “Good News Fridays” digital newsletter and dedicated posts on Yammer (employee communications hub) to leverage the high degree of community involvement by its employees. A webpage² dedicated to Project Leapfrog was also created on the company’s website that shares key project details and educational information

² <https://california.libertyutilities.com/south-lake-tahoe/residential/project-leapfrog.html>

for customers to better understand what system investments would be provided and how those would benefit them. The website also promotes the option of community partnership development opportunities and provides a simple and effective avenue for groups to reach out to us with questions and proposals for collaboration.

(B) In-Person Engagement with Community Enablers & Beneficiaries

This prong of the engagement plan largely focuses on “Supporters” and “Neutral” stakeholders as per the above stakeholder map and focuses on creating awareness and “latent advocacy” – to assist the project when required (e.g. local permits facilitation, identification of volunteers and/or local professionals that may be required by the project, etc.). To date, the following stakeholders have been engaged in in-person discussions, many of whom have submitted letters of support and/or intent to form partnerships.

Community Enablers & Beneficiaries Engaged and Expressing Support to Date	(1) South Tahoe Public Utility District (2) City of South Lake Tahoe (3) City of Loyalton (4) Barton Memorial Hospital (5) Tahoe Prosperity Center (6) Advance (7) Town of Truckee (8) El Dorado County (9) Placer County (10) Alpine County Supervisor (11) Alpine County Admin. Office (12) Sierra County (13) Washoe Tribe (14) Lake Tahoe USD (15) Tahoe Chamber (16) Tahoe Regional Planning Association (17) NTCA- North Tahoe Community Alliance (18) Lukins Water (19) Vail Ski Corp
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Table 2: In-Person Community Engagement

(C) In-Person Engagement with Potential Delivery Partners

For this prong of the engagement plan, the team concentrated on the local union, local government agencies, and non-profit groups which support economic development in the area by providing underserved communities with new career opportunities, improved education and job training, and enhanced energy services that enable further economic development. Notably, the team engaged the Local IBEW Chapter 1245 and the Washoe Indian Tribe, both intended partners to supply some of the labor and/or logistics support (warehousing) required for the project. Additionally, key non-profit organizations that focus on improving the economic conditions for individuals who are English language learners, under-employed, and those working in low-wage/low-advancement jobs were engaged including the Tahoe Prosperity Center and Advance. The initial feedback from these organizations has been decidedly positive and much of it has been reflected in the letters of support appended to CalPeco’s application.

To maximize the value impact of the project, the Leapfrog team thought beyond the assets in their immediate control and identified an important area of potential cross-commodity collaboration with other local utilities. Since the AMI technology deployment involves establishing a robust Gen5 Riva radio mesh communication network, it lays a foundation that could enable remote meter readings not just for electricity meters but for any utility meters in the area. To this end, the project team are in the process of engaging representatives of 13 local water and gas utilities in the area to explore partnerships to maximize the value of the AMI investment. A partnership of this nature could lead to a reduction of customer bills for other commodities, avoidance of further vehicular GHG emissions and upskilling of more employees that currently read meters manually or via Advanced Meter Reading (AMR) drive-by networks.

While this process is in the early stages and it could years for other utilities to come aboard depending on the type and vintage of their metering technologies, the opportunity for resulting scope economies is an important value-added benefit of the project. To date, several utilities have expressed interest in further discussions in this area. In most cases, water and gas utilities are constrained in their ability to deploy AMI unless their company also owns the electric grid in the same service territory (given the need to establish a mesh network using pole-mounted devices). CalPeco felt that it was important to show leadership in this area and proactively approach its peer utilities early in its planning efforts. Since electric, water and gas commodity bills are ultimately paid by the same group of customers, the initiative offers significant value amplification potential.

2.3 Future Labor and Community Engagement Activities

CalPeco continues to explore opportunities for partnerships and feels that the current letters of support which have been given despite not having any funding certainty demonstrate the high capacity for beneficial partnerships with all communities (including DACs in our region). Our current estimates are that Project Leapfrog could result in the creation of over 25 new temporary jobs for meter & system installation and upwards of five new or converted full-time roles to sustain the AMI operations into the future. As such, we look to further engage groups which provide related educational and/or employment services for those types of roles. While the team was not able to obtain a letter of support from the local IBEW union given the successive emergency weather events in the service area, the company feels that the initial discussions with their union partners have been productive.

The project team will continue with the same three-pronged approach both post-submission (prior to DOE award decision) and after the decisions have been communicated to Applicants. The following table summarizes the planned activities and how they further support application development. A key step that the company intends to take in the interim before the DOE funding decisions are made is the development of short Collaboration Hypothesis Papers, that will serve as a more detailed template for identification of specific value elements that can be obtained from partnerships with various organizations. As appropriate, the development of these hypothesis papers will also include outreach to validate the company’s assumptions and further refine the plans. CalPeco deems this work to be of value even if the DOE funding is not awarded, as the AMI project (in a much more scoped down form) would go ahead in any case.

Engagement Strategy Prongs	To Do Prior to DOE Award Decision	To Do After DOE Award Decision
Digital: Website & Social Media	<ul style="list-style-type: none"> • Update to confirm submission • 3 social media blitzes before July 	<ul style="list-style-type: none"> • Communicate the DOE Decision • Convey relevant next steps to be taken even if the project is not selected for an award.
In-Person: Enablers & Beneficiaries	<ul style="list-style-type: none"> • Develop “Collaboration Hypotheses Map” for key stakeholders (do not share). • Present to MO Commission on April 21st on the projects applied for. • Engage KS, OK, AR Regulator Staff. 	<ul style="list-style-type: none"> • If awarded, use Collaboration Hypothesis Document content to approach Enablers for partnerships. • If not awarded – identify & convey elements that can still proceed via regular investment program to continue fostering collaboration.

<p>In-Person: Key Delivery Partners</p>	<ul style="list-style-type: none"> • Conduct 1 collaborative engagement with both the Local 1245 and Washoe Tribe to jointly identify collaboration avenues. 	<ul style="list-style-type: none"> • If awarded, commence the Community and/or Labor agreement negotiations with Union and Tribe. • If not awarded – reach out to all to explore incremental opportunities that may be feasible through regular work program.
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Table 3: Future Engagement Activity

Once funding certainty is attained, CalPeco plans to use the associated funding to amplify the direct engagement with potential partners and customers. This will provide an opportunity for potential hiring of local public communications groups to educate customers about the benefits of Project Leapfrog as well as how to maximize the use of available programs to help with energy usage & bills like California Alternate Rates for Energy (CARE), Family Electric Rate Assistance (FERA) offering energy bills discounts, Energy Savings Assistance (ESAP) Low Income Home Energy Assistance Program (LIHEAP), Utility Emergency Assistance Program (UEAP) and Energy Upgrade CA.

3. Investing in the American Workforce

CalPeco is keenly aware of the fact that it is one of the premium employers in its area and one of relatively few companies working in a high tech-adjacent industry, where new technologies continuously test the robustness and flexibility of its plans and creativity of its staff.

Our commitment to Diversity, Equity, and Inclusion (DEI) is also a fundamental component of our culture and demonstrated by our inclusion in Bloomberg’s Gender-Equality Index in 2023. Of particular note is that only a handful of utility companies are present in the list of 484 which spans 45 countries and CalPeco (through its parent Algonquin Power & Utilities) is the only utility company in California present on the list.

Over the planned duration of the project CalPeco expects to:

- Add over 40,000 hours of new crew employment for project construction
- Provide new training programs on AMI systems and meters
- Complete a series of process redesign workshops for field & billing staff

Targeted Workforce Investment Outcomes over the Project Duration:

- No less than 15 installation jobs created for at least one year in the project cycle
- 100% of line & metering staff receive paid AMI Fundamentals / Device Maintenance training
- Complete a Resourcing Requirements & Gap Analysis Workshop with Local Union Leadership

3.1 Overall Approach to Planning Workforce Growth Maximization

While the initial phase of Project Leapfrog will involve conventional type utility work in replacing service meters, significant training for sustainment of the new AMI system will be required. This new knowledge will provide employees with new skills in the realm of communication networks, data collection systems, and functional analytics to derive the grid-edge insight from the newly available data.

In addition to the technical training itself there will be a significant amount of change management required to give all employees a chance to identify potential downstream impacts as a result of the change in data collection. For example, employees working in customer care will now have access to data that wasn't previously available to them and will need additional training and time for process re-invention to make use of the new insight when helping customers with their bills. Ultimately this adds more in-demand skills to the local labor force, ensuring retention and new job creation.

3.2 Activities to Date

The Project Team started from the materials submitted as a part of the Concept Paper in December, and further refined the core skillsets and scope of preparatory activities that would be required beyond the specific project-related logistics. By way of this work, training design and delivery, workforce facilitation, and telecommunications professional services and tasks were added to the scope of required activities.

Project Phase/Major Activity Area	Core Skillsets	Planned Labor Sourcing
<i>Project Planning and Change Management</i>	Project management, asset procurement, budgeting, training design and delivery, standards redesign.	Internal CalPeco resources, specialized process design and technical education consultants, in collaboration with Local 1245 members and community delivery partners.
<i>Workshops</i>	Prioritization study, engineering and design work, telecom integration work, supply chain analysis and design, cybersecurity plan development.	Via RFPs to appropriately skilled and experienced energy sector IT and OT consulting firms.
<i>Meter Installation & Supply Chain</i>	Installation workers for meter and network installation and potential house electrical upgrades where needed.	Specialized contractors sourcing labor via local advertising campaigns and community partnership with Washoe Tribe
<i>AMI Network Development</i>	Installation of AMI system including communication components and performing radio studies	Proprietary knowledge required from system vendor necessitates their contracted labor
<i>Systems Integration</i>	Integration of AMI system with existing tools (billing, customer service) and knowledge transfer for system sustainment	Contracted labor from system vendor and new employees hired for AMI sustainment

Table 4: New Workforce Requirements

In addition to current CalPeco employees, the primary source of additional resources required for the initial phases of the project will come from the Local IBEW Chapter 1245 and a planned partnership with the Washoe Indian Tribe. Any resources required which are unable to be supplied by those means will come from the AMI system vendor.

	Year 1	Year 2	Year 3	Year 4	Year 5
Construction (hours)	19,200		These years effectively become the beginning of sustained AMI operations. Firm estimates of new resources may be updated, but the current estimate is up to 4 new or retrained permanent		
<i>Estimated from community</i>	<i>50%</i>				
Supply Chain Support (hours)	5,120	2,080			
<i>Estimated from community</i>	<i>90%</i>	<i>100%</i>			
Network Development (hours)	14,560	6,240			

Systems Integration (hours)	5,200	5,200	Smart Metering Operations Center (SMOC) resources.
Net New Employment (person-years)	18.7	6.5	
Net New for Community Partners	6.8	1.0	

Table 5: Estimated Project Job Creation Potential

The table above shows the proposed breakdown of resources for the first two years of the project which covers the major phase of equipment installation and systems integration. Firm estimates of resources beyond the second year will be developed upon funding approval as they rely on the scope of technology proposed in this application (e.g. MV-90 and DI installation) that may result in incremental staffing needs.

3.3 Future Workforce Investment Planning Activities

Having developed a comprehensive budgetary estimate appended to this application and having established the scope of change management activities (including training and process redesign) that will create additional in-demand technical skills for the unionized construction crews in the area, the company will proceed with high-level scoping activities in terms of specific processes and standards. However, a revisit will be necessary after securing funding to more fully explore the need for net new permanent positions for sustainability of the new AMI systems into the future. A specific plan will need to be established for net-new positions and/or potentially upskilling and retraining opportunities for employees whose positions are not in the same degree of demand as previous to the AMI implementation, such as meter readers. The company is confident that additional permanent positions will be required in the event of acceptance. To this end, the company plans to engage the union leadership for a Resourcing Requirements & Gap Analysis Workshop to ensure all facets of the potential project are accounted for.

As described in more detail in the Technical Volume, another important facet of collaboration will entail a series of process redesign workshops that will integrate skills and experience of outside and inside operations staff, members of the IT and Customer Care teams and other functions involved in the Meter-to-Cash and Outage Response mega processes. These activities will not only help identify additional value in how CalPeco executes its work, but also create engagement opportunities for Local 1245 members to provide meaningful input into process design to ensure safety and efficiency of future working environments, along with other priorities that may be raised. The workshop environment is also expected to be a grounds for education opportunities, with formal network maintenance and operations paid courses offered to the impacted team members. All line personnel and metering employees will be provided with comprehensive training on AMI Network Fundamentals and Smart Grid device maintenance.

CalPeco understands that AMI installations are typically performed by private sector contractor companies. In order to pay workers a fair wage, Itron obtains a labor market prevailing wage opinion from the California Department of Labor before every project is contracted. Having obtained such a document, Itron and CalPeco would then work with the contractor supplier to ensure that as many staff as possible are retained from within the service area and specifically the DAC communities and pay employees fair wages for the work they sign up to complete. The

project budget includes the associated marketing expenditures to advertise the opportunities in the DAC communities and elsewhere in the area.

4. Diversity, Equity, Inclusion, and Accessibility (DEIA)

The company's Radiant Heart logo that it shares with other Liberty Utilities family affiliates, entails a visual representation of its commitment to creating safe, fulfilling, and empowering employment experiences for individuals from all backgrounds, while creating a meaningful cultural exchange and growth experience for all.

Targeted DEIA Outcomes over the Project Duration:

- All hiring professionals utilize the AIRs and Diversity Jobs Tools in project-related work
- 100% of eligible labor and non-Itron equipment / materials sourcing processes incorporate selection criteria advancing DEIA candidates or suppliers with a proven and verifiable DEIA policies, practices and outcomes track record, where all other criteria have been met.
- Create two DI application support (IT) internships for local college students or recent graduates from DAC communities and/or under-represented demographics with background or interest in application development or IT systems management.
- A local communications specialist is engaged to plan and undertake project communications within the community. Emphasis will be placed on selecting a provider from an underrepresented community with limited historical opportunities within the energy sector.

4.1 Existing Business Approach to DEIA and Fostering Allyship

Our commitment to diversity and inclusion extends far beyond branding and corporate lists, with multiple policies and concrete practices some of which the Project Team has confirmed will be incorporated in the project execution:

- *AIRS Certified Diversity and Inclusion Recruiter Learning Path* – all of the company's recruitment professionals are completing a comprehensive training process to help build and enhance their diversity and inclusion talent acquisition practices.
- *Diversity Jobs powered by Circa* – Empire is part of a large corporate family (Algonquin Power & Utilities Corp.) which utilizes this online service that ensures that job postings are posted on the widest possible variety of cultural group job boards, to increase reach into the widest talent pool practicable.

CalPeco also has a deep commitment to our Supplier Diversity Policy³ with a team of people dedicated to expanding and supporting diversity in our supply chain across all service territories. Our CalPeco operations in California are one of the most progressive territories due in part to the introduction of the California Public Utility Commission's (CPUCs) General Order 156⁴ (GO 156) in 1988 which specifies a framework for utilities to follow and ensure their supply chains support

³ <https://libertyutilities.com/supplier-information.html>

⁴ <https://www.cpuc.ca.gov/about-cpuc/divisions/news-and-public-information-office/business-and-community-outreach/supplier-diversity-program>

the utilization of Women, Minority, Service-Disabled Veteran, Lesbian, Gay, Bisexual, Transgender and Persons with Disabilities Business Enterprises (WMDVLGGBTDBE).

CalPeco has increasingly used diverse suppliers for capital and maintenance work since 2015, with more than \$17M going to these represented business entities in 2021 and accounting for over 27% of annual spend in that year. Our diverse suppliers are key business partners who enabled line replacement, system hardening and wildfire mitigation activities which increased system reliability and resiliency for all our customers, especially our AFN customers and those who live in DACs. A robust framework for tracking these metrics is already in place with CalPeco's annual reports publicly available on the CPUC website⁵.

4.2 Current and Future Activities Planned

As a result of our extensive community & labor engagement efforts we have already received significant interest in partnership opportunities with local organizations focused on improving economic conditions for under-represented individuals and indigenous peoples. Notable organizations include:

- *Tribal Nation of The Washoe People* – opportunity to partner for direct resources to perform meter installs and indirect resources for expanded warehousing capabilities
- *Tahoe Prosperity Center* – Local non-profit with the potential to increase DEI in our supply chain
- *Advance* – Local community of government and educational agencies offering low- or no-cost services to adults looking to enhance their educational or career opportunities

CalPeco is also deeply committed to ensuring that our entire workforce operates in an environment that fosters inclusion by ensuring everyone is free from any bias. We are at the forefront of organizations ensuring equitable and safe environments for all employees as demonstrated by our organization wide training⁶ specifically aimed at eliminating unconscious bias. This both helps existing employees maximize their potential and creates an environment more readily able to expand diversity in the supply chain and workforce. As evidence of this commitment, CalPeco's ultimate parent Algonquin Power and Utilities has recently been recognized in Bloomberg's Gender-Equality Index for 2023. This is the company's third consecutive year of receiving this important recognition.

5. Justice40 Initiative.

1 Overall Approach to Justice40

Over 23% of CalPeco's customers live in Disadvantaged Communities (DACs) as identified by the Climate and Economic Justice Screening Tool ("CEJST") including 1,701 Access and Functional Needs (AFN) customers, defined as persons with developmental or intellectual disabilities,

⁵ <https://www.cpuc.ca.gov/about-cpuc/divisions/news-and-public-information-office/business-and-community-outreach/supplier-diversity-program/go-156-procurement-reports-and-plans>

⁶ https://www.franklincovey.com/wp-content/uploads/2021/02/aap1931561_aap_ub_slipsheet_v1-0-4_hr.pdf

physical disabilities, chronic conditions, or low income. Based on recent data, a number of communities in CalPeco's service territory still have per-capita incomes below the California state average. Accommodation rental costs can be up to 40% of gross income and the increasing home prices, driven by non-residents, continually puts home ownership further out of reach for people who live and work in the community.

Specifically, in the North Tahoe region that is fed by the North Tahoe Transmission system, there are two communities census tracts around Kings Beach that meet the burden thresholds under the categories of Low Income, Energy Cost and Expected Population Loss Rate. All other communities in Placer County who are served by the company's transmission system, face an energy burden ranked between 73%-95% percentile (with 90% being a threshold). In addition, all communities meet an extreme burden threshold under the category of Expected Population Loss Rate (due to Fatalities and injuries resulting from natural hazards each year) being in the top percentile range of 98-99%.

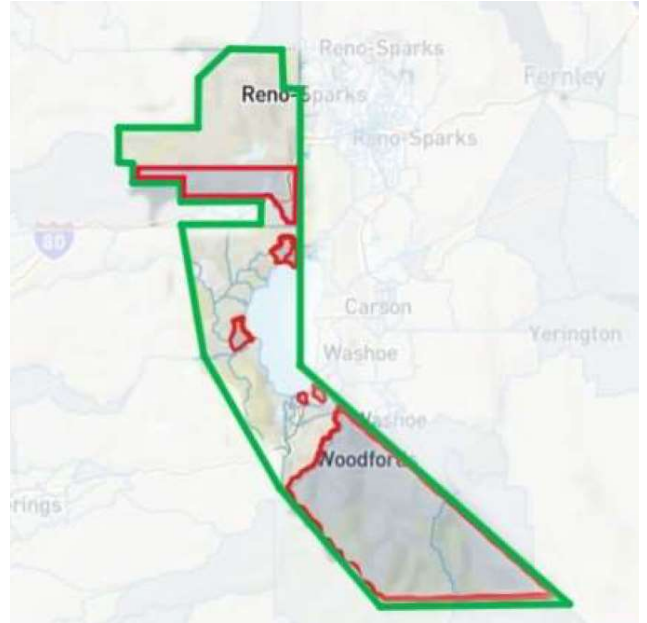


Figure 2: Justice40 Communities within Service Territory

The wildfire mitigation efforts place a significant financial burden on Liberty and its customers. In the 2022 Test Year General Rate Application Liberty requested a substantial increase in the residential rates of about 20% to cover the additional operational and capital expenses associated with the implementation of the wildfire mitigation plan. Further rate hikes may also make electricity unaffordable to residential and business customers. With the support of DOE funding, CPUC will be in a position to approve this Project and grant a permit to construct.

5.2 Decreasing Burden and Increasing Democracy

As described in more detail in the project's Technical Volume, Project Leapfrog is a customer equity and opportunity of access are at the core of the project's overall purpose. While the company has managed to pace the timing of this project (as evidenced by its 30-year-old average meter vintage), the transformative impact of this initiative (or its additional scope into the DI and DA capabilities) should not be a matter of tradeoffs decisions relative to core infrastructure renewal and fire mitigation. Considering that many of U.S. utilities have benefitted from federal grant funding to introduce AMI in their service areas in the aftermath of the 2008 financial crisis, the company believes that by allocating a portion of the 2022 GRIP program funding to Project Leapfrog, the DOE would be advancing the objectives equity and improved opportunity of access.

Overall, DoE funding will provide the following positive outcomes to the DAC:

1. A decrease in energy burden for the communities by providing capital support to the project that would offset the rates.

2. A reduction of probability and/or impact of forest fires, and the reduction of impact (i.e. duration of outages) through the DI temperature and impedance detection capabilities.
3. Introduction of new direct contract opportunities and introduction and/or sustainment of indirect employment vacancies associated with project staging, warehousing, accommodations, etc.

Specific Justice40 Investment Outcomes over the Project Duration

- Prioritize retaining at least 40% of installation staff from the DAC communities
- Conduct educational campaigns on Smart Grid and utility employment opportunities within the DAC community public school system, explore a utilities or Smart Grid-themed community-wide science fair competition with awards in the form of educational course eligibility gift certifications to winners and participants (collaborate with local colleges).
- Create two DI application support (IT) internships for local college students or recent graduates from DAC communities and/or under-represented demographics with background or interest in application development or IT systems management.

5.3 Increasing Clean Energy Jobs, Educational Opportunities & Enterprises

An immediate improvement in jobs as a result of Project Leapfrog will be from crews no longer needing to travel to each and every meter six times per year to record readings. As crews will be equipped with new skills regarding the AMI systems, these skills could also be applicable to other future technology developments where communication systems and big data are leveraged, such as for increasing the penetration of distributed energy resources (DERs).

To this end, and as noted above in the Investment Outcomes box, CalPeco will also aim to emphasize education and awareness building efforts among the region's future leaders. In collaboration with local educational institutions, the company will seek to develop a series of courses, seminars and science-fair like competitions focused on the utilities industry in general, and with special emphasis on distributed energy systems, utility telecommunications, cybersecurity, application development and Smart Grid devices. The initial AMI deployment would provide CalPeco with extensive datasets of consumption data that (once cleared by privacy and cybersecurity) that students and recent graduates could analyze to draw insights, develop proposals for customer-facing programs or undertake forecasting work. In addition, once the project reaches the stage of DI app implementation, the company will set up two

Leveraging this new technology ultimately brings the utility space into a new world more akin to data intensive industries, providing both upskilling opportunities for direct workers and a testbed of information to be randomized and shared with educational institutions to attract more people to a STEM field of data science. By tapping into the opportunity that AMI and adjacent technologies can bring to its service area, CalPeco and its partners will work to make sure that step increase in operating capabilities underlying Project Leapfrog also includes a step increase in meaningful economic opportunities for its most vulnerable residents.

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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

- Solicitation/Project Number: DE-FOA-0002740 Proposer: Liberty Utilities (CalPeco Electric) LLC.
- This Environmental Questionnaire pertains to a: Recipient or Prime Contractor Sub-recipient or Subcontractor
- Principal Investigator: Lindsay Maruncic Telephone Number: 530-536-6294
- Project Title: Project Leapfrog: Foundational AMI and Grid Edge Computing Technology Deployment
- Expected Project Duration: 01/01/2024 - 12/31/2028
- Location of Activities covered by this Environmental Questionnaire: (City/Township, County, State):
Multiple distribution circuits across 6 counties in the Lake Tahoe area of California: Alpine, El Dorado, Mono, Nevada, Placer and Plumas
- List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).
Across all sites, scope of work is expected to be consistent and will entail: (a) replacement of existing revenue meters of customer premises and (b) installation of poletop communications infrastructure to enable over-the-air communication between meters and utility control room and billing system. All work will entail modifications to existing (customer- or utility-owned infrastructure) and at no point is the expansion of existing facilities' footprint expected to occur. All removal of old meters will be handled in accordance with the company's environmental disposal policies and executed by a qualified waste management company.
- 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
No other locations beyond those areas noted above	

- 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.

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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.
Alternatives include doing nothing or replacing the existing population of meters with equivalent manually read units. Doing nothing is not feasible as the meter average ages are above 35 years and are at end of life. The like-for-like renewal was not chosen because it continues to rely on daily driving to read meters manually, creating more emissions and being generally less safe and economic than AMI as proposed.

C. PROJECT LOCATION

1. Provide a brief description of the project location (physical location, surrounding area, adjacent structures).
The project will impact every electrically metered customer premise in the CalPeco service territory, along with multiple elements of overhead line infrastructure where communication devices will be installed to set up a mesh network to enable meter reading. This amounts to nearly 50,000 customer locations across 6 counties in the Lake Tahoe area of California.
2. Attach a project site location map of the project work area.
Please see the Technical volume of this IJJA GRIP application for the area map included into that document.

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 checked="" type="checkbox"/> Agricultural
<input checked="" type="checkbox"/> Suburban	<input checked="" type="checkbox"/> Rural	<input checked="" type="checkbox"/> Residential	<input checked="" type="checkbox"/> Research Facilities
<input checked="" type="checkbox"/> Forest	<input checked="" type="checkbox"/> University Campus	<input type="checkbox"/> Other:	<u>All customer premises - no modifications to land or natural features</u>

- b. Identify the total size of the facility, structure, or system and what portion would be used for the proposed project.

Metering facilities on customer premises typically occupy less than a square foot and usually slot into the same spatial area occupied by the existing meter subject to removal. Network set up will involve installing small devices (size of a regular backpack) at the top quarter of distribution poles (about one every square mile).

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.
Poletop installation of communication devices, removal, disposal and replacement with a new equivalent of the old revenue meters. No new roads or utility lines or rights of way will be required to be added. All pole infrastructure modifications are done to the top 1/4 of the pole - with no ground-level footprint changes.
- d. Describe how land use would be affected by operational activities associated with the proposed project.
 No land areas would be affected.
No effect to land use as all installations are either done to a small area of existing customer buildings or the existing distribution infrastructure.
- 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)
To the extent that customer premises are in the vicinity of the landmarks and facilities identified in this question, project work will take place in those areas. However, there will be no impact to these landmarks as project construction will result in no expansions of the environmental footprint of the existing premises and distribution facilities.
- 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
No new lines to be constructed - only minor additions to the existing ones.
- 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)

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- 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

Since the project's scope only includes replacement of existing metering assets and installation of a minimal-footprint poletop infrastructure on a small subset of poles, this project will not affect any threatened species.

- 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)

No negative socio-economic changes but positive changes in the way of rate relief, reduction of vehicular emissions via elimination of meter reading daily truck rolls, and enhanced ability to detect outages and forest fires in early stages.

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

Aside from very temporary instances of utility light duty vehicles parking in neighborhoods or roadside to install the meters or bucket trucks to install poletop network assets where needed, there will be no changes to traffic.

- 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)

It would actually help promote energy conservation and demand management.

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

Historical, archaeological, and cultural sites do exist in the service territory, but none are expected to be affected by the project. Some are included in the National Register of Historic Places, and some are not. Liberty works with subcontractors that specialize in the verification of cultural assets and the avoidance and mitigation of assets based on legislation dictated by the California State Historic Preservation Office (SHPO) to ensure that NEPA, CEQA, and SHPO compliance is achieved through due diligence.

- 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)

The type of construction contemplated (see above) will not negatively affect any cultural sites.

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

The company has had no valid reason to contact the Historic Preservation Office in relation to this project.

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

The poletop infrastructure in scope does not exceed the circumference of the poles themselves and as such will not result in any reduced sightlines.

- 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.

To the extent that there are customer facilities on or adjacent to tribal lands - work as described above would occur with no permanent impact.

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 checked="" type="checkbox"/>	<input type="checkbox"/>
O ₃ - 8 Hour	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SO _x	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PM - 2.5	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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)

- 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	n/a	
<input type="checkbox"/> NO _x	n/a	
<input type="checkbox"/> PM - 2.5	n/a	
<input type="checkbox"/> PM - 10	n/a	
<input type="checkbox"/> CO	n/a	
<input type="checkbox"/> CO ₂	n/a	
<input type="checkbox"/> Lead	n/a	
<input type="checkbox"/> H ₂ S	n/a	
<input type="checkbox"/> Organic solvent vapors or other volatile organic compounds--List: n/a		
<input type="checkbox"/> Hazardous air pollutants -- List: n/a		
<input type="checkbox"/> Other -- List: n/a		
<input type="checkbox"/> None		

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

- g. How would emissions be vented?
 n/a

7. Hydrologic Conditions/Water Quality

- a. What nearby water bodies may be affected by the proposed project? Provide distance(s) from the project site.
 No water bodies will be affected by the installation of meters and poletop telecom hardware.

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

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)

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.)	n/a
<input type="checkbox"/> Coal or coal by-products	n/a
<input type="checkbox"/> Other -- Identify:	n/a
<input type="checkbox"/> Hazardous waste – Identify:	n/a
<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)

Materials to be disposed of will be sent to the local waste management company and disposed of in an appropriate manner.

d. How would wastes for disposal be transported?

Appropriate transportation containers operated by waste management company and as appropriate for the type of waste.

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

Electronic waste (old electromechanical meters removed from service) - the company will conduct requisite analysis as to whether and to what extent any elements represent hazardous waste and will dispose of them accordingly.

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

All waste related work will be outsourced to appropriately qualified waste management firm(s), while local environmental compliance staff will oversee the process to ensure full compliance.

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)

The company has on-call vendors for this service.

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)

All employees are provided with safety training upon onboarding. A safety plan is required for subcontracted employees as well. Daily tailgate meetings discuss safety before crews go out on locations. PPE is provided to all employees and subcontractors. All employees have the ability to use the Stop Work Authority policy, wherein any employee can stop performing tasks they deem unsafe.

- e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?
- No Yes (describe)

AMI meters are a new asset class, so both internal and external labor involved in the project will be required to complete requisite technical and safety training designed by Liberty and vendor.

- f. Describe any increases in ambient noise levels to the public from construction and operational activities.
- None Increase in ambient noise level (describe)

Temporary and de minimis increase associated with use of regular power tools and vehicles to install devices.

- 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)

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)

No significant negative impacts, while multiple significant positive ones from the environmental perspective, including reduction of truck rolls and associated emissions through introduction of over the air AMI metering, improvement of public and employee safety by reducing the number of miles driven by company's personnel, and an increased opportunity for energy conservation, by giving the customer a powerful consumption management tool with quick feedback cycle. Up to additional 20 temporary and 5 permanent jobs for the region.

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.

Future meter device decommission at the end of the meters' expected lifecycle will feature the same process (i.e. infrastructure replacement as the current project).

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: L Maruncic

Date (mm/dd/yyyy): 03/11/2023

Typed Name: Lindsay Maruncic

Title: Senior Director, Operations

Organization: Liberty Utilities (CalPeco Electric) LLC.

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:



County of Alpine
District 5 Supervisor David Griffith

305 Carson View
Markleeville, CA 96120
dGriffith.9@gmail.com
tel.: 530-694-2168

March 10, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington D.C. 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "Project Leapfrog" IIJA GRIP Application.

To Whom It May Concern,

I am writing to support Liberty's application for funding for their Leapfrog project. Alpine County is a sparsely populated rural county on the eastern side of the Sierra Nevada mountain range.

Currently the meters that measure our electricity consumption need to be read manually, which due to the distance between homes etc. is an inefficient process that shows up in the rates that we pay. Project Leapfrog would upgrade the meters to ones that could be read remotely at a much lower cost.

Alpine County suffers from significant natural hazards such as wildfire and extreme weather events. Some of the more advanced technologies that come with these new meters include monitoring of system health and quicker identification of the location and size of service outages. That should result in a reduction in outage response time. Quicker restoration of service, especially during the winter, is important to those that live here.

Should Liberty or the granting agency require any clarification or further information please don't hesitate to contact me.

Respectfully submitted


Digitally signed by David
Griffith
Date: 2023.03.10 16:27:33
-08'00'

David Griffith

Cc Nichole Williamson, Alpine County CAO
Jennifer Guenther, Liberty Utilities



2170 South Avenue
South Lake Tahoe
CA 96150

530-541-3420 TEL
www.bartonhealth.org

U.S. Department of Energy
1000 Independence Ave., SW
Washington D.C. 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "**Project Leapfrog**" IJJA GRIP Application.

I would like to offer my support of Liberty's Leapfrog application through the GRIP program. Barton Memorial Hospital operates in an isolated mountainous community that has been plagued by various natural disasters including and not limited to the Angora Fire, Caldor Fire and severe winter weather events. As a result, I believe the advanced capabilities this project would offer would be of great benefit to our Healthcare System.

As mentioned, Barton operates in an isolated, mountainous community. We have had an increase in major weather events the last couple of years that have led to several outages. Though we do have emergency backup diesel generators, the loss of electrical power still impacts our operations. Having advanced warning of potential weather events would help in our emergency response preparations. Although we have memorandums of understanding (MOU) in place for procuring diesel fuel, it does not help when roads are closed. As a result, any additional information and/or advanced notifications would be extremely useful.

The benefits related to reducing outage response times is critical. We have multiple off-site facilities that have patient care medications which require fast action in transporting them to the hospital and the ability to quickly isolate an outage would help maintain operations, patient services and loss of medications.

We have worked with Liberty in the past to troubleshoot service fluctuations and are hopeful the Leapfrog technology would expedite that process. As you are aware hospital have numerous life safety support systems in place to care for our patients, staff and visitors, and advanced notice of emergencies is paramount in the healthcare industry. In addition, having insight into usage patterns could be of great use for billing and conservation purposes.

Sincerely

Richard Belli

Richard Belli
Administrative Director of Facilities
BARTON HEALTH

Taking your health to **new heights**



CITY OF LOYALTON

03/08/2023

To whom it may concern:

The City of Loyalton whole heartedly supports Liberty Energy's application for the Grid Resilience and Innovation Partnership (GRIP) Grant.

Liberty Energy has been an incredibly active and supportive community partner to the City of Loyalton recognizing the challenges our community faces being so geographically remote. The nearest significant sized township or neighboring city is located at least 45 minutes travel during favorable weather conditions. With adverse weather or road conditions, responses during outages can be significantly delayed. With the implementation of a grid edge technology there would be a reduction in outage response time, and increased troubleshooting and connection functionality.

The City of Loyalton is an economically disadvantaged community with a medium household income approximately \$45,000. This income level is prohibitive for households to plan ahead for back up sources of electricity such as home generators. This grant will aid Liberty's ability to maintain their reliability and affordability for the City of Loyalton.

Warmest Regards,

Sarah M Jackson

Mayor

City of Loyalton



Office of the City Manager
City of South Lake Tahoe

Joseph Irvin
City Manager of the City of South Lake Tahoe
1901 Lisa Maloff Way
South Lake Tahoe, CA 96150

March 8, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

RE: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "**Project Leapfrog**" IIJA GRIP Application.

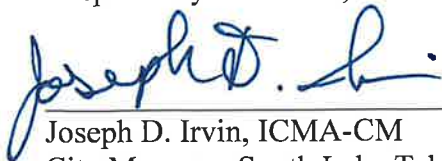
Dear GRIP Program:

We are writing to express support for Liberty Utilities' GRIP grant application advancing their Project Leapfrog which seeks to implement Advanced Metering Infrastructure technology.

The project as currently proposed brings a number of benefits to Liberty customers. It will help bring Liberty's metering technology up to present day customer expectations. It will lead to reduced vehicle miles traveled on our congested roads while reducing greenhouse gas emissions. It will allow for real time carbon intensity monitoring as well as remote operation capabilities that can contribute to grid resilience in the face of extreme weather events.

Our city has serious climate goals and we see this project as helping to enable greater insight and transparency into energy management which will help provide a foundation toward achieving the greenhouse gas reductions that we seek. For example, this can help us scale EV charging and electrification programs. At the same time, keeping rates reasonable is a significant concern in this low-income community. Climate change, grid resilience, wildfire risk, and rates all compete for attention. This project helps address these competing concerns. For these reasons we support the project and this application.

Respectfully submitted,

 3/8/2023

Joseph D. Irvin, ICMA-CM
City Manager, South Lake Tahoe, CA
jjirvin@cityofslt.us

County of Placer Board of Supervisors

175 Fulweiler Avenue
Auburn, California 95603
(530) 889-4010
bos@placer.ca.gov

BONNIE GORE
District 1

SHANTI LANDON
District 2

JIM HOLMES
District 3

SUZANNE JONES
District 4

CINDY GUSTAFSON
District 5



March 9, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "Project Leapfrog" IIJA GRIP Application.

To Whom It May Concern:

On behalf of the Placer County Board of Supervisors, I am pleased to support the Liberty Utilities Grid Resilience and Innovation Partnership (GRIP) grant that seeks to implement Advanced Metering Infrastructure (AMI) technology in eastern Placer County and surrounding communities in and along the Sierra Nevada's.

Placer County supports this project for a multitude of reasons including public health and safety benefits, advancement of the Placer County Sustainability Plan and bringing energy resiliency to three disadvantaged communities located within the service territory. Specifically, Project Leapfrog will

- Reduction of greenhouse gas (GHG) emissions due to reduction in vehicle miles traveled due to smart technology which will allow many issues to be solved remotely.
- Reduced rate increases for our residents and businesses. Through the possibility of time-of-day rate structure, customers would be able to time their energy use to possibly reduce their costs.
- Reduction in outage response time. As eastern Placer County is home to public safety power shutoffs due to extreme weather events, this project will allow residential and business customers to have their power restored in a more-timely manner without impacting the safety of Liberty Utilities staff. Additionally, this project would allow Liberty Utilities to monitor individual connection conditions in real-time which will reduce risks to vulnerable residents.

Furthermore, this project would contribute to the progress of the Placer County Sustainability Plan (PCSP). The PCSP is the County's commitment to reduce GHG emissions and enhance community resiliency to long-term changes associated with climate-related hazards. The PCSP is a comprehensive road map that outlines various programs and policies to achieve the most significant GHG emission reductions in the unincorporated county. In addition to reducing emissions, implementation of the PCSP will help achieve multiple community-wide benefits, such as lowering energy costs, reducing air and water pollution, supporting local economic development, and improving public health, safety, and quality of life.

I urge you to support this request to help improve the lives of those that live and work in this unique area. Should you have any questions regarding our position, please contact Joel Joyce, Legislative and Governmental Affairs Coordinator at (530) 889-4026.

Sincerely,

COUNTY OF PLACER

A handwritten signature in blue ink, appearing to read "Jim Holmes", is written over a horizontal line.

Jim Holmes, Chair
Placer County Board of Supervisors

Cc: Placer County Board of Supervisors

COUNTY OF EL DORADO

330 Fair Lane
Placerville, CA 95667
(530) 621-5390
(530) 622-3645 Fax

KIM DAWSON
Clerk of the Board



BOARD OF SUPERVISORS

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District V

March 10, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington D.C. 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "**Project Leapfrog**" IIJA GRIP Application

To Whom It May Concern:

On behalf of El Dorado County, we offer strong support for Liberty Utilities' (CalPeco Electric) proposed "Project Leapfrog" IIJA GRIP Application. If awarded, Liberty Utilities would be able implement grid technology that would not only bring the utility and their customers up to par with so many of California utilities and consumers, but also to provide new benefits to the utility, their customers, and the County as a whole.

Some of the benefits of interest to the County would be:

- Identification of potential threats to fire – El Dorado County has experienced the devastating nature of massive wildfires year after year. It is extremely important to the County that our local partners, such as Liberty Utilities, leverage new technology to help mitigate the potential of fire.
- Anticipation of extreme weather events – El Dorado County, and specifically in the Tahoe Basin, has seen unprecedented weather events on a more regular occurrence. Newer grid technology that would help anticipate and prepare for extreme weather would not only benefit Liberty Utilities but also El Dorado County residents, businesses, and tourists.
- Reduction in outage response time – With more extreme weather and wildfire threats, El Dorado County has experienced an increase in outages due to damages to equipment or preemptive power shut offs to protect residents, visitors, property, and infrastructure. For the health and well-being of our residents, businesses, and visitors, it is of utmost importance that outages are restored safely and quickly.

According to the U.S. Government's Climate and Economic Justice Screening Tool, El Dorado County constituents within Liberty Utilities' territory include Disadvantaged Communities facing significant burdens. Parts of the Tahoe Basin are made up of

Latino and low-income communities which face the burdens of high costs of housing and increased threats from wildfire and extreme weather. Liberty Utilities' grant proposal would help alleviate some of these burdens by reducing utility rates and allowing for conservation opportunities.

Given that this application is well aligned with El Dorado County's strategic goals, the El Dorado County Board of Supervisors supports Liberty Utilities as they seek funding to further this effort.

Sincerely,

A handwritten signature in blue ink that reads "Wendy Thomas" followed by a horizontal line.

Wendy Thomas
Chair, Board of Supervisors



March 10, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "**Project Leapfrog**" IIJA GRIP Application

To Whom It May Concern:

On behalf of Vail Resorts' Tahoe Region, it is a pleasure to write a letter in support of the proposal Project Leapfrog being submitted to the IIJA GRIP Program by Liberty Utilities.

Liberty Utilities is an important community partner for Heavenly and Northstar, and our partnership goes back many years. Advanced Metering Infrastructure (AMI) expansion will be key in contributing to improving energy efficiency and lower energy costs for our communities in the long-run. Furthermore, AMI can reduce outage response time by identifying outages without a manual inspection which will benefit the resorts' daily operations.

Currently, all meters measured by Liberty are manually read, making it hard to reach some locations due to snow levels and weather. Project Leapfrog will allow Liberty to expand AMI implementation and collect, process and report on detailed data without the need to be on-site. The expansion of AMI will have an impact on our resorts' energy costs, efficiency and Greenhouse Gas emissions, without impacting current energy rates to the resorts or their communities. These benefits align with our overall mountain spirit and ethos, as well as Vail Resorts' business and [Commitment to Zero](#) goals.

Liberty Utilities has been a strong partner over the years, and this grant will allow them to expand our partnership even more and have a bigger impact beyond just our operations. We provide our full support to Liberty Utilities in their pursuit of the IIJA GRIP grant.

Sincerely,

Tom Fortune
VP & COO, Heavenly & Tahoe Region
Vail Resorts
tfortune@vailresorts.com



LUKINS BROTHERS WATER COMPANY, INC.

SINCE 1947

March 10, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington D.C. 20585

RE: Letter of Support for Liberty Utilities Application for Grid Resilience and Innovation Partnership (GRIP) grant that seeks to implement Advanced Metering Infrastructure (AMI) technology.

Lukins Brothers Water Company, Inc. is in full support of Liberty Utilities requesting a competitive Grid Resilience and Innovation Partnership (GRIP) grant that seeks to implement Advanced Metering Infrastructure (AMI) technology. With Implementing the AMI technology, it will help reduce the response times to outages, advance the management of consumption needs and load research enablement and help provide remote detection of system disturbances.

Lukins Brothers Water Company, Inc. provides domestic water service to over 994 customers through 58,000 feet of water mains, in the South Lake Tahoe Area. By written agreement, LBWC also provides fire protection through fire hydrants in its service area. Our service area is totally within the city limits of South Lake Tahoe, CA.

In the Summer of 2022, California delt with rolling blackouts and extreme wildfires across the state. Where local utilities once produced, transmitted, and delivered utilities to their customers, a cast of players now orchestrates the service in most areas of the country. California's grid is connected by transmission lines to other Western states and Canadian provinces, allowing it to import and export power. Like any big marketplace, the system has advantages of scale, allowing resources to be redirected to where they are needed. Wildfires can impact water utilities through several channels, including changes in water availability, source water quality from ash build-up (both surface and groundwater sources), soil erosion, and fire debris. California's experience has revealed several vulnerabilities in the system's design and in the region's generating capacity that create the potential for failure.

In the Winter of 2022-2023 the city of South Lake Tahoe has experience extreme weather breaking the record of snow since the 1970's. In the beginning of the 2022 winter, the town of South Lake Tahoe experienced many power outages due to power lines falling from the weight of snow on top of them and the major winds. As of March 6, the Snow Lab has measured 580 inches, or just over 48 feet, of snow since Oct. 1. During this winter Lukins Brothers Water Company has been struggling with the endless amounts of snow removal from buried water meters, fire hydrants, and pipes. With these extreme weather conditions, it has been a never-ending effort to keep our customers with safe, reliable and clean drinking water and prepared for any emergency.

Lukins Brother Water Company is in support of Liberty Utilities receiving the GRIP grant to implement AMI technology as we share many of the same customers and challenges. We hope that by them receiving this grant, it will help our mutual customers, lessen the response time from rolling black outs, and help our community progress in the right direction. Additionally, this project will utilize mesh telecom infrastructure that could support the conversion of AMI technology for the Lukins Brothers Water Company and surrounding utilities through access to our pole top infrastructure.

Please do not hesitate to reach out for additional comments or support of this project application.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jennifer Lukins", with a stylized flourish at the end.

Jennifer Lukins

President, Lukins Brothers Water Company, Inc.

U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

March 10, 2023

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "Project Leapfrog" IJJA GRIP Application.

Greetings,

The North Tahoe Community Alliance (NTCA) would like to voice support for Liberty Utilities' proposed Project Leapfrog application.

We believe the Advanced Metering Infrastructure (AMI) technology would specifically benefit our members in four ways.

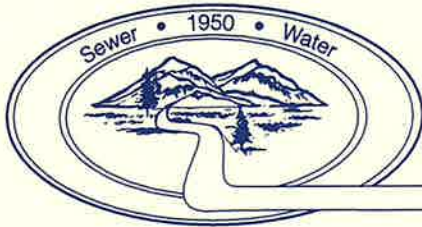
- It would create a reduction in outage response time, which in the rural mountain environment can be critical during a storm event.
- It would also provide remote detection of system disturbances – again, in our rural mountain community, this is critical because of how spread out and sometimes inaccessible meters can be.
- It would also provide advanced management of our community's consumption needs, as well as real-time carbon-intensity monitoring.

As the NTCA moves forward with its new mission to further destination stewardship among residents (including second-homeowners) and the business community, we believe projects like this one will help move us into the future, preserving the beauty of Lake Tahoe for generations to come.

Sincerely,



Tony Karwowski
CEO



South Tahoe Public Utility District

General Manager
John A. Thiel

Directors
Nick Haven
Shane Romsos
David Peterson
Kelly Sheehan
Nick Exline

1275 Meadow Crest Drive • South Lake Tahoe • CA 96150-7401
Phone 530 544-6474 • Fax 530 541-0614 • www.stpud.us

March 8, 2023

Department of Energy
Grid Resilience and Innovation Partnership Grant

Re: Liberty Utilities (CalPeco Electric) Grid Resilience and Innovation Partnership Grant Application

Dear Department of Energy,

I am writing to express my support for Liberty Utilities Grid Resilience and Innovation Partnership Grant to replace its obsolete population of manual customer consumption meters with a modern Advanced Metering Infrastructure system.

South Tahoe Public Utility District supplies drinking water and provides sewage collection, treatment and export to protect Lake Tahoe's delicate ecosystem. Moving water requires a large amount of energy and we are Liberty Utilities largest customers.

Some of the benefits of this grant proposal include:

- Reduction in outage response time
- Advanced management of consumption needs and load research enablement
- Real time carbon-intensity monitoring
- Remote detection of system disturbances

This project is critical to modernize our community's power grid. It helps to integrate more clean sources of generation and makes it more resilient in the face of climate. South Tahoe Public Utility District expresses our support for the project and the grant application.

Sincerely,

John Thiel
General Manager
South Tahoe Public Utility District



March 10, 2023

U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Re: Letter of Support and Commitment to Explore Partnership Opportunities
in relation to Liberty Utilities (CalPeco Electric) proposed “Project Leapfrog”
Bipartisan Infrastructure Law Grid Resilience and Innovation Partnerships (GRIP)
Program

To Whom it May Concern at the US DOE:

On behalf our members, many of who are customers of Liberty Utilities, we at Tahoe Chamber appreciate this opportunity to express enthusiastic support for Liberty’s application for a USDOE Smart Grid Grant - **Liberty’s Project Leapfrog**.

We have reviewed the materials assembled by Liberty management for their application and understand that if approved, the grant will facilitate Liberty’s deployment of Advanced Metering Infrastructure (AMI) technology, along with an array of additional operational communications and grid edge computing capabilities that the newest generation of AMI meters offers.

Currently, the average age of Liberty meters is 30 years. They have no AMI metering and the majority of existing meters are still read manually. The company seeks to “leapfrog” their technology forward to more effectively and efficiently serve their customers and our community. Specific benefits will allow Liberty to:

- Achieve a simultaneous implementation of grid technology.
- Improve their management of rapidly changing consumption needs.
- Improve their ability to anticipate and manage extreme weather events.
- Achieve real time monitoring of carbon intensity and remote detection of system disturbances.
- Establish temperature alarms as early warnings of potential forest fires or circuit overloads.
- Enable advanced grid load research.

We further understand there will be additional customer and community benefits with the support of the US DOE requested grant, including but not limited to:

- Reduction in outage response time.
- New contract and employment opportunities associated with the project.

Mission

*Tahoe Chamber is a proactive membership organization dedicated to developing,
promoting and representing the South Shore Business Community.*



- Automated meter reading, troubleshooting, and connection functions leading to a reduction in GHG emissions as Liberty vehicles will not need to drive as many miles to achieve these functions.
- Expansion of Distribution Automation to improve system reliability and improved access to improved consumption information.

Thank you in advance for your consideration of our Tahoe Chamber support for the **Liberty Utilities Project Leapfrog** expressed in this letter and your approval of the Liberty Utilities US DOE grant application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Mike Glover".

Mike Glover
Chief Executive Officer

A handwritten signature in black ink, appearing to read "Steve Teshara".

Steve Teshara
Director, Government Relations

Mission

Tahoe Chamber is a proactive membership organization dedicated to developing, promoting and representing the South Shore Business Community.

March 10, 2023

U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

Re: Letter of Project Support and Commitment to Explore Partnership Opportunities in relation to Liberty Utilities' (CalPeco Electric) proposed "Project Leapfrog" IJA GRIP Application

To Whom It May Concern:

The purpose of this letter is to express the Tahoe Regional Planning Agency's (TRPA) support for Liberty Utilities' (CalPeco Electric) proposed "Project Leapfrog" IJA GRIP Application.

Lake Tahoe is one of the world's largest, deepest, clearest, and most spectacular mountain lakes. Beloved by all, Lake Tahoe is a natural resource meant to be enjoyed for centuries. The Tahoe Regional Planning Agency was established through a bi-state compact in 1969 to serve as the nation's first bi-state regional environmental planning agency. Our mission is to lead the cooperative effort to preserve, restore, and enhance the Lake Tahoe Region's unique natural and human environment while improving local communities and people's interactions with our irreplaceable environment.

Project Leapfrog would help Liberty Utilities to support the achievement of environmental goals at Lake Tahoe. The project would support electric vehicle charging infrastructure that is critical to reducing gas usage in the region that contributes to water and air pollution. The project would also provide early alert technology for wildfire. This is critical given Tahoe's recent wildfire experience with the Caldor Fire in 2021.

Lake Tahoe benefits from the successful collaboration of the federal, state, regional, and local governments along with environmental non-profits and the private sector. This critical project for managing pollution from entering Lake Tahoe. We strongly encourage your office to recommend this project for funding.

Sincerely,



Julie W. Regan
Executive Director
Tahoe Regional Planning Agency

Town Council

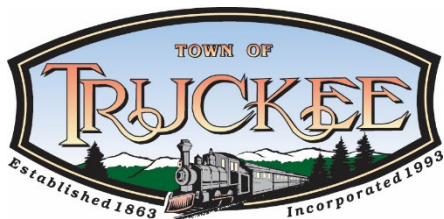
Lindsay Romack, Mayor

David Polivy, Vice Mayor

Anna Klovstad, Council Member

Jan Zabriskie, Council Member

Courtney Henderson, Council Member



Department Heads

Jen Callaway, Town Manager

Andy Morris, Town Attorney

Danny Renfrow, Chief of Police

Daniel Wilkins, Public Works Director/Town Engineer

Denyelle Nishimori, Community Development Director

Nicole Casey, Administrative Services Director

Judy Price, Communications Director/Town Clerk

Hilary Hobbs, Assistant to the Town Manager

March 10, 2023

Grid Deployment Office
Department of Energy
1000 Independence Ave. SW
Washington DC 20585

RE: Support for Liberty Utility's application to the Department of Energy for the Grid Resilience and Innovation Partnership (GRIP) grant

To: Grid Deployment Office

As the Town Manager at the Town of Truckee, I am writing to voice our support for Liberty Utility's application for the Grid Resilience and Innovation Partnership (GRIP) grant, which proposes to implement Advanced Metering Infrastructure (AMI) technology and a suite of additional operational communications and grid edge computing capabilities.

The proposed project is aligned with Town of Truckee's climate mitigation and resilience goals (outlined in the Town's Climate Action Plan and Climate Vulnerability Assessment). Truckee is at severe risk of climate change impacts like wildfire and severe winter storms; the proposed project will help to reduce greenhouse gas (GHG) emissions, improve data collection to inform electrical infrastructure improvement, and improve resident resilience to climate risks.

The Town of Truckee anticipates the following benefits of the proposed project:

- **Reduction of GHG emissions:** replacing manual meter readings with AMI technology will reduce Liberty's operational emissions and mitigate employee travel risks.
- **Real time carbon-intensity monitoring:** enable Liberty to implement carbon intensity monitoring of real-time supply mix, which will improve energy use and emissions reporting to support the Town's climate goals.
- **Advanced load research:** improve advanced load forecasting and system load flow modelling in order to maximize the use of utility-owned and customer-side renewable energy.
- **Enhance customer resilience:** better anticipate extreme weather events like wildfires and snowstorms and reduce outage response time.

As such, the Town of Truckee endorses this project and believes it will benefit Truckee and the Utility's larger service area.

Sincerely,

A handwritten signature in blue ink that reads "Jen Callaway".

Jen Callaway
Town Manger



Lake Tahoe Unified School District

1021 Al Tahoe Boulevard
South Lake Tahoe, CA 96150

Phone: (530) 541-2850

Fax: (530) 541-5930

Email: info@ltusd.org * Web: www.ltusd.org

Superintendent: Todd Cutler, Ed.D.

Board of Education: Valerie Mansfield, Lauri Kemper, Bonnie Turnbull, Larry Reilly, Jon Hetherton

03/10/2023

To Whom It May Concern:

As a community partner of Liberty Utilities Lake Tahoe Unified School District strongly supports the application for the Grid Resilience and Innovation Partnership Grant submitted.

Liberty Utilities is currently looking at implementing Smart Readers as a means of increasing efficiency and obtaining more timely and succinct data. The cost of the units and associated expenses would increase the rates currently paid by LTUSD. As a District with declining enrollment resulting in decreased funding, this potential increased cost of services is a concern. Thus, the possibility of Liberty Utilities obtaining and implementing these units through the means of a grant provides a potential rate relief to be experienced by the District which would allow funds to be utilized in other student-based areas.

In addition, living in a rural mountainous community, weather related challenges are inevitable and can result in power outages. These outages can result in the need to delay or even cancel school. With the possible funding of simultaneous implementation of grid edge technology, the ability to anticipate extreme weather events and reduce the outage response time would be a most welcomed benefit to assist the District in managing these emergency situations and minimize school delays and closures.

Please feel free to contact me should you have any questions.

Sincerely,

Andrea Salazar
Associate Superintendent, Business and Operations

Locations of Work (DE-FOA-0002740)				
Prime or Sub	Name	City	State	Zip Code + 4
CalPeco & Itron	Residential and commercial premises	California	AGATE BAY	96140
CalPeco & Itron	Residential and commercial premises	California	AGATE BAY	96148
CalPeco & Itron	Residential and commercial premises	California	AGATE BAY	96143
CalPeco & Itron	Residential and commercial premises	California	AGATE BAY PINES	96140
CalPeco & Itron	Residential and commercial premises	California	ALPINE MEADOWS	96145
CalPeco & Itron	Residential and commercial premises	California	ALPINE MEADOWS	96146
CalPeco & Itron	Residential and commercial premises	California	ALPINE PEAKS	96145
CalPeco & Itron	Residential and commercial premises	California	ANGORA HIGHLANDS	96158
CalPeco & Itron	Residential and commercial premises	California	AUBURN	95603
CalPeco & Itron	Residential and commercial premises	California	BORDERTOWN	96111
CalPeco & Itron	Residential and commercial premises	California	BROCKWAY	96143
CalPeco & Itron	Residential and commercial premises	California	BROCKWAY VISTA	96143
CalPeco & Itron	Residential and commercial premises	California	CARNELIAN BAY	96145
CalPeco & Itron	Residential and commercial premises	California	CARNELIAN BAY	96143
CalPeco & Itron	Residential and commercial premises	California	CARNELIAN BAY	95140
CalPeco & Itron	Residential and commercial premises	California	CARNELIAN BAY	96146
CalPeco & Itron	Residential and commercial premises	California	CARNELIAN HEIGHTS	96140
CalPeco & Itron	Residential and commercial premises	California	CEDAR FLAT	96140
CalPeco & Itron	Residential and commercial premises	California	CHILCOOT	96111
CalPeco & Itron	Residential and commercial premises	California	COLEVILLE	96107
CalPeco & Itron	Residential and commercial premises	California	COLEVILLE	93517
CalPeco & Itron	Residential and commercial premises	California	COLEVILLE	96120
CalPeco & Itron	Residential and commercial premises	California	COLEVILLE	96133
CalPeco & Itron	Residential and commercial premises	California	COLEVILLE	93546
CalPeco & Itron	Residential and commercial premises	California	COYOTE RUN TRUCKEE	96160
CalPeco & Itron	Residential and commercial premises	California	DEVONSHIRE	96161
CalPeco & Itron	Residential and commercial premises	California	DOLLAR HILL	96145
CalPeco & Itron	Residential and commercial premises	California	DOLLAR POINT	96145
CalPeco & Itron	Residential and commercial premises	California	EMERALD BAY	96158
CalPeco & Itron	Residential and commercial premises	California	EMERALD BAY	96142
CalPeco & Itron	Residential and commercial premises	California	FALLEN LEAF LAKE	96151
CalPeco & Itron	Residential and commercial premises	California	FLORISTON	96111
CalPeco & Itron	Residential and commercial premises	California	FLORISTON	96161
CalPeco & Itron	Residential and commercial premises	California	FOLSOM	95630
CalPeco & Itron	Residential and commercial premises	California	FOUNTAIN VALLEY	92708
CalPeco & Itron	Residential and commercial premises	California	FULTON ACRES	96140
CalPeco & Itron	Residential and commercial premises	California	FULTON ACRES	96143
CalPeco & Itron	Residential and commercial premises	California	GLENHSIRE	96161
CalPeco & Itron	Residential and commercial premises	California	GRANLIBAKKEN	96145
CalPeco & Itron	Residential and commercial premises	California	HIGHLANDS	96145
CalPeco & Itron	Residential and commercial premises	California	HIRSCHDALE	96160
CalPeco & Itron	Residential and commercial premises	California	HIRSCHDALE	96111
CalPeco & Itron	Residential and commercial premises	California	HOMEWOOD	96141
CalPeco & Itron	Residential and commercial premises	California	HOMEWOOD	96145
CalPeco & Itron	Residential and commercial premises	California	HOMEWOOD	96142
CalPeco & Itron	Residential and commercial premises	California	HOMEWOOD	96161
CalPeco & Itron	Residential and commercial premises	California	HOMEWOOD	95782
CalPeco & Itron	Residential and commercial premises	California	HOMEWOOD	96148
CalPeco & Itron	Residential and commercial premises	California	HOPE VALLEY	96120
CalPeco & Itron	Residential and commercial premises	California	KINGS BEACH	96145
CalPeco & Itron	Residential and commercial premises	California	KINGS BEACH	96148
CalPeco & Itron	Residential and commercial premises	California	KINGS BEACH	96413
CalPeco & Itron	Residential and commercial premises	California	KINGS BEACH	96140
CalPeco & Itron	Residential and commercial premises	California	KINGS BEACH	96146
CalPeco & Itron	Residential and commercial premises	California	KINGSWOOD	96143
CalPeco & Itron	Residential and commercial premises	California	LAHONTAN	96161
CalPeco & Itron	Residential and commercial premises	California	LAKE FOREST	96145
CalPeco & Itron	Residential and commercial premises	California	LAKE FOREST	96148
CalPeco & Itron	Residential and commercial premises	California	LAKE FOREST	96143
CalPeco & Itron	Residential and commercial premises	California	LAKE FOREST	96140
CalPeco & Itron	Residential and commercial premises	California	LOYALTON	96118
CalPeco & Itron	Residential and commercial premises	California	MARKLEEVILLE	96120
CalPeco & Itron	Residential and commercial premises	California	MARKLEEVILLE	96150
CalPeco & Itron	Residential and commercial premises	California	MEEKS BAY	96142
CalPeco & Itron	Residential and commercial premises	California	MEEKS BAY	96150
CalPeco & Itron	Residential and commercial premises	California	MEEKS BAY	96141
CalPeco & Itron	Residential and commercial premises	California	MEEKS BAY	96145
CalPeco & Itron	Residential and commercial premises	California	MEYERS	96150
CalPeco & Itron	Residential and commercial premises	California	MILLBRAE	94030
CalPeco & Itron	Residential and commercial premises	California	NEWPORT BEACH	92658
CalPeco & Itron	Residential and commercial premises	California	NO TAHOE	96161
CalPeco & Itron	Residential and commercial premises	California	NORTHSTAR	96160
CalPeco & Itron	Residential and commercial premises	California	OAK VIEW	93022
CalPeco & Itron	Residential and commercial premises	California	OLYMPIC VALLEY	96146
CalPeco & Itron	Residential and commercial premises	California	OLYMPIC VALLEY	96160
CalPeco & Itron	Residential and commercial premises	California	OLYMPIC VALLEY	96145
CalPeco & Itron	Residential and commercial premises	California	OLYMPIC VALLEY	96148
CalPeco & Itron	Residential and commercial premises	California	OLYMPIC VALLEY	95730
CalPeco & Itron	Residential and commercial premises	California	OLYMPIC VILLAGE	96146
CalPeco & Itron	Residential and commercial premises	California	PINE MEADOWS	96146
CalPeco & Itron	Residential and commercial premises	California	PINELAND	96145
CalPeco & Itron	Residential and commercial premises	California	PLACER	96146
CalPeco & Itron	Residential and commercial premises	California	PONDEROSA PALISAD	96160
CalPeco & Itron	Residential and commercial premises	California	PORTOLA	96122
CalPeco & Itron	Residential and commercial premises	California	PORTOLA	92122
CalPeco & Itron	Residential and commercial premises	California	RIDGEWOOD	96148
CalPeco & Itron	Residential and commercial premises	California	RIDGEWOOD ESTATES	96145
CalPeco & Itron	Residential and commercial premises	California	RIDGEWOOD HIGHLANDS	96140
CalPeco & Itron	Residential and commercial premises	California	RIDGEWOOD HIGHLANDS	96145
CalPeco & Itron	Residential and commercial premises	California	RUBICON	96142
CalPeco & Itron	Residential and commercial premises	California	ROSEVILLE	95678
CalPeco & Itron	Residential and commercial premises	California	RUBICON BAY	96142

PROJECT DESCRIPTION AND ASSURANCES DOCUMENT (PDAD)

Project Title: “Project Leapfrog: Foundational AMI and Grid Edge Computing Technology Deployment”

Applicant Name: Liberty Utilities (CalPeco Electric) LLC

Applicant Address: 701 National Avenue, Tahoe Vista, CA 96148

Names of all team member organizations (if applicable): Itron

Principal Investigator:

Tami Fruhwirth

775-762-3149

Tami.Fruhwirth@libertyutilities.com

Business Point of Contact:

Dmitry Balashov

365-292-3419

Dmitry.balashov@libertyutilities.com

Include any statements regarding confidentiality. The project cost estimates entail a confidential exchange of commercially sensitive information between the Applicant and the Vendor (the sub-recipient), and as such are confidential.

Federal Share: \$13,071,300

Cost Share: \$13,071,300

Total Estimated Project Cost: \$26,142,600

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))

___X___ 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)

TOPIC AREA 1 Specific Items:

NOT APPLICABLE

Item 2: Specify (mark with "X") the entity type of the applicant organization:

- electric grid operator
- electricity storage operator
- electricity generator
- transmission owner or operator
- distribution provider
- fuel supplier

If further description is needed for the specified entity type, please provide below:

Item 3: Please provide the total amount (USD) of qualifying resilience investments (as outlined in DE-FOA-00002740) that has been spent for the previous 3 years. Please also provide the time period utilized for calculation of this amount.

NOT APPLICABLE

Total Amount:

Time Period for Resilience Investments:

Note: Topic Area 1 applicants must submit as part of their application, a report detailing past, current, and future efforts by the eligible entity to reduce the likelihood and consequences of disruptive events. This report should include efforts over at least the previous 3 years and at least the next 3 years and any broader resilience strategy used by the applicant.

Item 4: Is the eligible entity a Small Utility as defined in DE-FOA-0002740 (sells no more than 4,000,000 MWh of electricity per year)? If NO is selected, skip to Item 7.

NOT APPLICABLE

- Yes
- No

Note: If YES, applicant must provide their Form 861 for the last reporting year submitted to the Energy Information Administration (EIA).

Item 5: Per BIL section 40101(e)(2) (C) APPLICATION LIMITATIONS.—An eligible entity may not submit an application for a grant provided by the Secretary under subsection (c) and a grant provided by a State or Indian Tribe pursuant to subsection (d) during the same application cycle. Therefore, is the eligible entity a Subaward/Subcontract recipient for an application submitted under IJJA Section 40101(d), ALRD 2736? If "YES", please describe the

differences between the GRIP FOA 2740 application [40101(c)] and the ALRD 2736 [40101(d)] applications in the box below:

NOT APPLICABLE

_____ Yes
_____ No

TOPIC AREA 2 Specific

No items

TOPIC AREA 3 Specific

Item 6: Specify (mark with "X") the entity type of the applicant organization:

Empire Response: NOT APPLICABLE

_____ a State
_____ a combination of 2 or more States
_____ an Indian Tribe
_____ a unit of local government
_____ a public utility commission

If further description is needed for the specified entity type, please provide below:

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: Dmitry Balashov

Address: 602 South Joplin Avenue, Joplin, MO 64801

Phone: 365-292-3419

E-mail: Dmitry.balashov@libertyutilities.com

Item 8: Signature of Authorized Organizational Representative (AOR)

Tami Fruhwirth

PROFESSIONAL SUMMARY

With over 30 years of professional experience within the utility industry, Tami has held progressive roles in field services, customer service management, human resources, project management, and leadership. Having led diverse teams to the successful completion of multiple complex projects, Tami has managed multimillion dollar project and program budgets while executing critical roles in business processes such as revenue collections and customer service. Tami has demonstrable capabilities in driving technological change across organizations, with strongly developed skills in analytics, communications, and compromise.

PROFESSIONAL EXPERIENCE

Project Manager, Process Improvement, Liberty Utilities (CalPeco) 2021 – Present

- Leading diverse teams on projects related to Smart Grid Meter Infrastructure
- Managing field Service team-move in move out, credit field team, meter reading team
- Managing Meter Operations, meter sets, removals, testing, ordering, inventory

Owner/Principal Consultant, Tried & True Patriotic Project Management 2016 – 2022

- Contracted with State of Nevada Wildlife to assist with RFP for customer-driven database.
- Contracted with NV Energy, finalizing work order process for capital budget spend.
- Contracted with Truckee Meadows Water Authority as Ombudsman (2017 – 2019).

Customer Service Manager, Liberty Utilities (CalPeco) 2013-2016

- Delivered user software upgrades requirement document, providing testing services and documented results.
- Delivered performance management tools for leadership and metric development.
- Provided documentation for compliance testing and controls.
- Developed and delivered training programs.
- Provided on-site leadership for Customer Experience team.
- Managed front line Call Center, Billing, Field Services and Data Analysts.

Various Positions, NV Energy 1992 - 2012

Team Leader: Telecommunications, IT

2010 – 2012

- Directing teams for testing and documentation of system protection in system control/telecom for NERC/FERC requirements.
- Project Management for Telecommunication systems for wind generation- Spring Valley Project.
- Team Lead for Tower Gateway Radio System for Smart Grid.
- Project Lead for Substation to grid interconnection projects.
- Team Lead for Security Systems Upgrades.
- Team Lead for Networking Infrastructure Improvements.
- Assisting with System Protection Relaying

Tami Fruhwirth

Various Positions, NV Energy (Continued)

1992 - 2012

HR Workforce Strategist, Organizational Development

2008 – 2010

- Developing and facilitating “break through” training sessions for all leadership levels; Trained teams on various leadership models, teambuilding and mentoring models for teams.
- Coordinating/Managing from the HR side- the Joint Apprentice Training programs including program development and State approvals; Liaison to the State Labor Commission.
- Committee member for Safety Incident Prevention Board; served on the team to revise the corporate safety rules and handbook-engaged Behavior Based model.
- Delivering workforce diversity training and recruiting

Team Leader: Meter Reading/Field Service/Meter Ops

1999-2008

- Implementation of system rerouting all accounts (365,000 meters)
- Implementation Battery maintenance Project ERT meters
- Hiring/Firing/training staff for team
- Audit Projects regarding Metering, Employee record and Training audits, Billing audits, OSHA
- Implementation of Banner CIS system

Program Coordinator, Water Conservation, Demand Side Projects & Meter Project

1992 - 1999

- Water Meter Retrofit Project-working with multiple contractors
- Water Conservation Watcher Program-working with local jurisdictions
- Water Heater Wrap Project
- Water education Programs with Cooperative Local entities

EDUCATION

University of Phoenix, 2008

Bachelor of Science, Business Management

Society for Human Resource Management, 2006

Professional in Human Resources, PHR Certificate

University of Nevada, Reno, 2006

Professional Certificate in Human Resource Management

Lindsay Maruncic

PROFESSIONAL SUMMARY

Lindsay possesses extensive expertise in renewable energy and field services operations, backed by years of professional experience. Lindsay has a proven track record of managing intricate commercial issues related to renewable energy, exhibiting a deep understanding of the utility business, including substation, distribution, and transmission assets. Lindsay has successfully overseen various renewable energy projects, including the Luning Expansion Project - a \$168M initiative featuring a 60MW solar system and 259MWhr battery storage. Lindsay has managed teams, negotiated Energy Services Agreements, established resiliency programs, and implemented advanced metering, microgrids, and storage for advanced demand management.

PROFESSIONAL EXPERIENCE

Senior Director, Operations, Liberty Utilities (CalPeco) 2022 – Present

- Manage the day-to-day electric operations in North and South Lake Tahoe, including substation, distribution, and transmission assets.
- Execute the annual capital budget over \$50M for system improvement and wildfire mitigation.
- Responsible for the management and submission of the Wildfire Mitigation plan.
- Implementation of AMI smart meters in the Service Territory CAPEX approximately \$20M, ensuring expedited delivery and minimal disruption to customers.

Director, Renewable Energy Operations & Development, Liberty Utilities (CalPeco) 2021 – 2022

- Managed a team of 10 Field Services employees, ensure fast and effective meter reading for the utility responsibilities include staffing and scheduling, coordinating, and working with other departments in the utility.
- Program Director for 100% renewables, zero-carbon initiative for the Tahoe utility includes, IRP planning and strategy, the origination of new projects that fit long term strategic goals.
- Successfully originated the Luning Expansion Project, a 60MW solar, 259MWhr battery storage project CAPEX value of \$168M.
- Development and implementation of the Tahoe Resiliency Program 50MWh of BTM BESS systems owned and operated by the utility to ensure resiliency during emergency outages.

Senior Manager, Renewable Energy & Field Services Operations, Liberty Utilities (CalPeco) 2019 – 2021

- Managed development and strategy initiatives to achieve goals of 100% renewable, zero carbon utility.
- Responsible for the management and operations of 60 MW of solar assets and in-service area microgrid including managing tax equity relationships and performance.
- Managed strategy and negotiations of Energy Services Agreement for a 50,000 customer utility ensuring lowest rates for customers.
- Developed and implement Resiliency Program for Resiliency Corridors, Medical Baseline customers and Essential Services
- Local representative on Utility 2.0 Grid Modernization plan, including advanced metering, microgrids and storage for advanced demand management.

Lindsay Maruncic

Project Manager, 'Stretch Opportunity', Liberty Utilities (CalPeco)

2018 – 2019

- Managed the development of a 10MW Solar Farm in Reno, NV, accountable for the deployment of resources against approved budget while ensuring commercial success through management of the Purchase and Sale Agreement, and ensuring the Developer provides a project within scope and on budget, including managing potential disputes with the use of internal and external legal resources.
- Secured Tax Equity financing for project to benefit from ITCs and reduce utility capital contribution to project, work through the due diligence process and communication of complicated Project structure.
- Managed relationships with project partners, including off-taker, transmission utility, the California Public Utility Commission and multiple internal stakeholders within the organization.
- Timely preparation of reports and correspondence related to project development to provide clear and concise communication on project updates, including Risk Management, Cost Reports, and monthly Director Reports presented to the CDO and President of the utility.

Asset Manager, Liberty Utilities (CalPeco)

2018 – 2019

- Risk Advisor for Liberty Power since 2017, responsible for identifying, assessing, mitigating and communicating risks.
- Managed the portfolio of 17 assets in Liberty Power Solar Canada and Hydro, focusing on maximizing profits and implementing business strategies.
- Good understanding of utility business through management of Liberty Utilities CalPeco asset and Luning 50MW Solar Facility, supporting C100 planning efforts and resource planning for 100% renewables.
- Managed negotiations and modelling for revenue offtake and renewable energy credits with major utilities such as Hydro Quebec and Manitoba Hydro.
- Deep understanding of complex commercial issues specific to renewable energy business, optimizing long term value of assets and relationships.
- Managed Tax Equity relationships and reporting with WellsFargo, USBank, and Bank of America.

EDUCATION

John Hopkins University, Present

Master in Science of Finance (M.Sc.)

University of Dundee, Scotland, 2013

L.L.M. Natural Resources Law and Policy,

Dissertation: Regulating Hydraulic Fracturing: A Comparison of Emerging Regulation

Certificate in Monitoring and Regulation of the Upstream Petroleum Sector

Certificate in International Commercial Arbitration

University of Dundee, Scotland, 2011

International Oil and Gas Management (MBA)

Joseph R. Sparks

PROFESSIONAL SUMMARY

An experienced manager with a proven track record of successfully managing AMI operations and an electric meter shop. Joseph is skilled in budget management, financial analysis, and team leadership. He has demonstrated the ability to identify and correct operational deficiencies, resulting in improved efficiency and productivity. Joseph successfully implemented a structured training program for meter testers, improving the quality and accuracy of meter readings.

PROFESSIONAL EXPERIENCE

Manager of AMI Operations, Liberty Utilities

2020 – Present

Responsibilities for Managing Central Region electric meter shop and Liberty Utilities AMI Operations:

- Maintain the budget for the meter shop.
- Approve invoices, POs for meter supplies, etc.
- Provide management and resolve any issues for Central Region's 16 union meter testers\readers.
- Correct deficiencies inside the meter shop department
- Work in the field with the testers during this time
- Establish a structured training program for meter testers.

Accomplishments as Manager of AMI Operations:

- Oversaw deployment of 187K electric & water meters by Itron's Contractors
- Installed 150 Connected Grid Routers (CGR) by LU line crews.
- Completed work on over 2600 customers' homes by local contractors through RTU team.
- Mitigated any issues with customers or contractors that arose during the project.

Other projects:

- Oversaw deployment of 187K electric & water meters by Itron's Contractors
- AEP/KYPCo Integration team
- Integration of AMI into new customer information system
- Development/support of an AMI analyst department
- Testimony on metering for regulatory cases
- Working with advanced metering team to deliver executive leadership strategy for water, electric, and gas metering across the enterprise.

Associate Construction Planner, Liberty Utilities

2019 – 2020

- Managed new construction projects for Oklahoma & Kansas customers.
- Answered questions and concerns from customers.
- Installed & replaced orders for old- or damaged-line equipment.
- Processed payments for new equipment or construction cost.
- Built work orders and drawings for the line crews.
- Led the RTU team for the AMI project.
- Tracked and presented financial info for RTU budgeting.

Joseph R. Sparks

PROFESSIONAL EXPERIENCE (Continued)

Associate Construction Planner, Liberty Utilities

- Tracked and validated BEI invoices for the RTU project.
- Coordinated BEI work with the new RTUs and followed through daily to make sure all customers had service restored.

Senior Telecommunications Coordinator/Under the Infrastructure-Network Team, CFI / TES 2019 – 2019

- Cisco phone system engineer - architect, Telecom budgeting & billing for 3 companies under TES (1 million dollar plus).
- Produced Microsoft Visio and PowerPoints for upper management for infrastructure info/design and call flow for TES companies.
- Managed incoming fiber and copper connections for ISP's, T-1's, Point to Points, DS1's, POTS for TES.
- Maintained and negotiated contracts and pricing for Telecom and ISP connections for TES. AV and Audio design, installation, and support.
- Assisted with design and installation of all location's physical security (gates, cameras, intercoms, door locks and panic buttons.
- Designed, planned, budgeted, built parts list, purchased, and installed IT equipment for new projects, and new or decommission sites.
- Level one networking and cabling. TES companies included CFI, LSM Logistics, and Transport America.

EDUCATION

Miami High School, 1999

Kansas Law Enforcement Training Center, 2005

Blaine A. Ladd, P.E.

PROFESSIONAL SUMMARY

Blaine is a seasoned director of operations with over 21 years of experience in power utility electrical engineering and management. With expertise in substation, line operations, and substation engineering, Blaine honed his skills managing daily operation crews, including line operations, substation, and relay maintenance. He has over 7 years of substation design experience and has spent over 12 years on duty supervisor rotation at NV Energy and Liberty. Blaine is a licensed professional engineer in Electrical, State of Nevada and State of California, and an IEEE member.

PROFESSIONAL EXPERIENCE

Director, Operations, Liberty Utilities (CalPeco)

2020 – Present

- Direct all line operations, substation operations, and substation engineering personnel for Liberty's Tahoe area.
- Ensure all departments are operating safely and meeting corporate safety goals and metrics.
- Manage both capital and maintenance project's budget and scheduling for the region.
- Key contributor to the Wildfire Mitigation Plan development and implementation for the region.
- Direct Liberty's WMP emerging technologies implementation, including distribution automation, distribution fault anticipation, high impedance fault detection, and use of fast trips as a means of ignition prevention.

Substation Manager, Liberty Utilities (CalPeco)

2019 – 2020

- Directed all substation field personnel and engineers for the Liberty territory.
- Managed department projects and budget, always striving for on-time, under budget.
- Project Manager for major substation projects, including the \$17.5M Kings Beach project.
- Key contributor to the Wildfire Mitigation Plan development and implementation.
- Project Manager for many emerging, cutting-edge substation technologies for wildfire mitigation, distribution automation, and enhanced line protection schemes.
- Ensured operations and engineering personnel are trained and adhere to all company safety rules.

Business Manager, Liberty Utilities (CalPeco)

2014 – 2015

- Directed crews, inspectors and trouble men for the North Lake Tahoe region.
- Managed distribution planners, ensuring customer and maintenance projects were done on time and within budget.
- Supervised region fleet and warehouse operations.

Regional Engineer, Liberty Utilities (CalPeco)

2012 – 2014

- Performed various Distribution Engineering duties including fuse coordination, relay settings, budget submittal and reallocations, budget estimates, project justifications, power quality studies, switching recommendations, capacitor bank placement and setting, and regulator setting changes and recommendations.
- Directed all substation maintenance for the region.
- Performed Duty Supervisor responsibilities for the region.
- Standards Committee and Claims Committee Chair. Budget Committee member.

Blaine A. Ladd, P.E.

Senior Regional Distribution Engineer, NV Energy

2007 – 2012, 2015 – 2019

- Performed various Distribution Engineering duties including fuse coordination, relay settings, budget submittal and reallocations, budget estimates, project justifications, power quality studies, switching recommendations, recloser and capacitor bank placement and settings, and regulator settings changes and recommendations.
- Performed Duty Supervisor responsibilities for the region, directing crews during off-hours and weekends.
- Conducted training sessions at a training facility covering reclosers, regulators, and capacitor banks for the operations crews.
- Received multiple awards for 'Above and Beyond' performance (Carson and Reno).
- Facilitated completion of major capital maintenance projects in the Reno area, including submersible switch replacements, automated capacitor control, and a Cooper fuse remediation project.
- Directed and instructed junior level and student engineers.
- Planned various maintenance jobs as warranted due to system conditions, including both overhead and underground distribution construction.

Transmission Planning Engineer, NV Energy

2006 – 2007

- Performed various system studies to determine the feasibility and upgrades for various transmission system additions.
- WECC Area Coordinator for NV Energy. Member of WECC System Review Work Group (SRWG).
- Responsible for all departmental software purchases and updates.
- Continued to manage the PI Historian system, providing training and support whenever necessary.

EDUCATION

University of Nevada, Reno, 2000

Bachelor of Science Degree in Electrical Engineering

United States Navy, Pensacola, Fl., 1990

Basic Electronics School

United States Navy, Pensacola, Fl., 1990.

Basic Electronics School

Jennifer Guenther

PROFESSIONAL SUMMARY

Jennifer offers over 10 years of experience in the utility industry. As the Senior Manager of Customer Solutions, she leads a team that manages and develops various customer programs, including energy efficiency, water use efficiency, electric vehicle, solar, and low-income offerings. Jennifer is responsible for developing and maintaining relations with local governments, community, and business leaders while working directly with the company's highest revenue commercial customers to ensure satisfaction and find innovative solutions for their electric energy needs. She actively seeks economic development prospects and opportunities to support communities through charitable contributions and volunteerism.

PROFESSIONAL EXPERIENCE

Senior Manager, Customer Solutions, Liberty Utilities (CalPeco) 2019 – Present

- Lead team that manages and develops various customer programs including energy efficiency, water use efficiency, electric vehicle, solar and low-income offerings.
- Responsible for developing and maintaining relations with local governments, community, and business leaders.
- Work directly with our highest revenue commercial customers to ensure satisfaction and find innovative solutions for their electric energy needs.
- Actively seek economic development prospects as well as opportunities to support communities through charitable contributions and volunteerism.

Manager, Customer Care, Liberty Utilities (CalPeco) 2015 – 2019

- Lead department of 20 to 30 union employees responsible for customer service, billing, and field services operations.
- Developed and implemented several initiatives including new hire criteria, as well as attendance, cash handling and separation of duties policies.
- Developed and implemented outage communication plan and procedures requiring collaboration with multiple departments.

CIS Analyst, CIS Administrator, Customer Service Representative

Billing And Frontline, Liberty Utilities (CalPeco) 2011 – 2015

- Responsible for all system processes from meter to cash.
- Developed and maintained various key audit controls.
- Entered and updated CIS for all rate changes.
- Created new rates including medium commercial TOU.
- Developed meter exception review process.
- Accurately and efficiently billed all major TOU accounts.
- Performed all essential CSR Frontline duties in English as well as Spanish.

EDUCATION

University Of California Santa Cruz, 1992 – 1997

B.A. Latin American and Latino Studies, Minor Sociology

Joel A. Rivera

PROFESSIONAL SUMMARY

Joel offers extensive knowledge in smart electrical grids, power systems, system planning, and utilities. He has a strong understanding of local and state regulatory compliance. Joel has a demonstrated ability to innovate, develop and implement strategies to modernize the electrical grid.

PROFESSIONAL EXPERIENCE

Director, Electric Control and Dispatch, Liberty Utilities (CalPeco)

2021 – Present

- Managed expense, labor and capital budgets and coordinate workflow and staffing for the two critical work areas Dispatch and Electric Control.
- Oversaw and direct the day-to-day activities for the Londonderry NH Control Center Operations responsible in the dispatch and electric control functions of the Company's New Hampshire and California territories.
- Assisted in the development of policies, procedures and plans for operating, maintaining, and improving the electric, water and gas infrastructure.
- Developed and effectively managed various distribution performance and efficiency metrics.
- Ensured response to regular and off-hour emergency outages for electric, gas and water infrastructure and to take appropriate steps to restore equipment and service in a timely manner.
- Enforced Clearance & Control Rules and act as control authority as required to ensure safe and reliable operation of the distribution system.

Manager of GIS and Electric System Planning, Liberty Utilities (CalPeco)

2013 – 2021

- Managed the Company's electric system capacity, reliability, resiliency, integrity, interconnections, protection systems, equipment, grid modernization and system upgrades, prioritization, and associated budgets.
- Developed the Company's Least Cost Integrated Resource Plan (LCIRP) and Smart Grid Initiatives which includes Advanced Metering, Distribution Automation, Energy Conservation, Load Forecasting, Asset Management, Micro-Grids and Distributed Energy Resources.
- Developed the Company's Reliability Enhancement Plan. In the past five years this plan has contributed to the Company meeting all annual regulatory targets and has reduced the Company's SAIFI and SAIDI metrics by 47% and 38% respectively.
- Participated as a subject matter expert and witness at the NH Public Utilities Commission for the following proceedings: Grid Modernization, Locational Value of Distributed Generation, Rate Case, Reliability Enhancement Plan and Least Cost Integrated Resource Plan.
- Developed \$35 million strategy to resolve aging equipment conditions and capacity deficiencies for the town of Salem NH.
- Regulated program relays and controls for reclosers, sectionalizers and trip savers to implement new techniques with single phase tripping and achieve automated restoration schemes. Upgraded communication on existing reclosers and integrated remote sensing and control from the NH Electric Dispatch and Control Room.
- Implemented the use of automated pad mounted switchgears to improve customer service and reliability metrics. Integrated remote sensing and control from the NH Electric Dispatch and Control Room.

Joel A. Rivera

Senior Engineer – T&D Planning Lead, System Studies and Interconnections, National Grid

2006 – 2012

- Performed detailed analysis of the electric system to develop strategies and prepare reports for defining system deficiencies and identify locations where they may be implemented to best meet company strategic objectives in growth, smart grid, power quality, safety and reliability.
- Developed \$8 million strategy for the installation of a new underground 13.2kV distribution system for the Syracuse University Campus in Syracuse NY to address load growth and aging equipment.
- Developed strategy for the refurbishment of 22 - indoor substations located in the city of Buffalo NY to address aging equipment and safety conditions with costs that ranged between \$6 and \$10 million per substation.
- Developed \$25 million strategy to address all safety and asset condition issues in the southern portion of the City of Niagara Falls.
- Implemented various distribution automation schemes to improve the reliability of the Company.
- Conducted system impact studies for large distributed generation interconnection requests.
- Featured on the February/March 2010 issue of the magazine Careers/Diversity in Engineering & Information Technology for engineers who do work on rigorous technical assignments.

EDUCATION

University of Buffalo, 2006 - 2017

Masters of Engineering, Electrical Engineering - Power Systems

The Inter American University of Puerto Rico, 1998 - 2003

Bachelor of Science, Electrical Engineering – Communication Systems

Rick Dalton

PROFESSIONAL SUMMARY

Rick has over three decades of experience in the water and utility industry. His work includes managing capital work, covering conductor and system hardening projects for wildfire mitigation, and substation rebuild projects. He also serves as the Risk Advisor for the Liberty Utilities West Region. He has extensive knowledge and experience in water facility design, project management, and water system operations and maintenance. As the California Sr. Director of Engineering, Rick is responsible for providing direction and control over the statewide capital improvements and providing engineering consultation and services for Liberty's California operations.

PROFESSIONAL EXPERIENCE

Senior Director, Engineering, Liberty Utilities (CalPeco)

2016 – Present

Responsible for providing direction and control of the statewide capital improvements and providing engineering consultation and services for Liberty's California operations. Those operations consist of electric systems in the Lake Tahoe area and water systems in Los Angeles County and San Bernardino County. His work includes:

- Managing the capital work for both the electric utility (Liberty CalPeco) on the California side of Lake Tahoe and the Liberty water utilities in Southern California. Drafted Liberty's portion of the Kentucky PSC transaction approval application and testified in an oral hearing on the topics of transaction economics, system planning, and grid resilience.
- Covered conductor and system hardening projects for wildfire mitigation and substation rebuild projects.
- Electric system projects also include undergrounding, microgrids and EV charging.
- Serving as the Risk Advisor for the Liberty Utilities West Region.

Chief Engineer, Park Water Company

1988 – 2016

Hired as Company Engineer to provide engineering services for all aspects of managing water utilities. Gained knowledge and experience in the water utility industry and eventually progressed to the position of Chief Engineer. His work included:

- Extensive experience with water facility design, master planning, project management, and water system operations and maintenance.
- Areas of technical expertise include pipeline, tank and pump station design, hydraulic analysis, control systems, SCADA systems, and wellhead treatment.

EDUCATION

University of Southern California, 1977 – 1981

B.S. Civil Engineering

Professional Civil Engineer, California (C 50799), 1993 – Present

Stephen E. Moore

PROFESSIONAL SUMMARY

Stephen is an experienced manager of operations with a strong background in managing daily activities of Transmission and Distribution systems, including line construction and maintenance, safety, compliance, and emergency response. He has successfully managed multiple budget units exceeding \$60 million and supervised over 22 FTE positions and 23 contracted employees. Stephen is skilled in leading change initiatives, implementing system improvement projects, developing, and implementing policies to improve system performance, and leading matrixed teams to accomplish company-wide operations goals. He has a proven track record of success in managing operations in the electric utility industry.

PROFESSIONAL EXPERIENCE

Manager, Operations, Liberty Utilities (CalPeco)

2022 – Present

- Under general direction of the Electric Utility Director, direct and manager the daily activities of the Transmission and Distribution system, including line construction and maintenance; safety and compliance.
- Assist in the development and management of multiple budget units for OMOP and Capital expenditures, exceeding \$60 million.
- Manage 22 FTE positions and 23 contracted employees performing T&D work on the Electrical System.
- Lead change initiatives, including organization realignment; and performance benchmarking.
- Emergency Response Manager/On Call Duty Supervisor.
- Prepare and respond to regulatory audits, complaints, and public requests for information.
- Recommend and direct the implementation of system improvement projects.
- Develop and implement operations policies to improve system performance.
- Lead matrixed teams to accomplish company-wide operations goals for system rehabilitation and reliability.
- Secondary support manager for Operational Inspection, Trouble and Response teams.
- Manage CALPECO's JATC program and staff development.
- Oversee CALPECO's daily SAIDI/SAIFI benchmarking ratings and report on changes as needed.
- EOC Dispatch Manager

Electric Operations Manager, Truckee Donner Public Utility District

2018 – 2022

- Under general direction of the Assistant General Manager/Electric Utility Director, direct and manager the daily activities of the Transmission and Distribution system, including line construction and maintenance; energy control; metering; substation maintenance and operations; SCADA; AMI Deployment (Itron/Tantalus); building maintenance/grounds; fleet; troubleshooting; vegetation management; safety and compliance.
- Perform duties of chief system operator.
- Assist in the development and management of multiple budget units for O&M and capital expenditures, exceeding \$40 million.
- Manage 25 FTE equivalent positions.
- Train, mentor and develop staff.
- Recommend and direct the implementation of system improvement projects.

Stephen E. Moore

Electric Operations Manager, Truckee Donner Public Utility District (cont.)

2018 – 2022

- Develop and implement operations policies to improve system performance.
- Lead matrixed teams to accomplish company-wide operations goals for system rehabilitation and reliability.

Electric Operations Manager, Truckee Donner Public Utility District

2015 – 2017

- Emergency response manager.
- Prepare and respond to regulatory audits and public requests for information.
- Management of contracted vegetation crews.
- Manage the District's Wildfire Mitigation Plan, Vegetation Management Plan, JATC program and staff development.

Utility Supervisor, Pittsburg Power Company/DBA Island Energy

2010 – 2018

- Under general direction of the General Manager, with broad authority, direct, supervise and perform daily activities on the Gas and Electric distribution systems, including line construction and maintenance; substation construction; AMI Deployment (Landis+Gyr); metering; vegetation management; troubleshooting; safety; and compliance.
- Define, implement, and manage effective safety policies and work procedures.
- Lead change initiatives, including organization realignment; job specification modernization, and benchmarking.
- Development and administration of short/long-term construction projects and contracts.
- Personnel development and performance management.
- Respond to regulatory agencies, US Government, and public request.
- Develops schedules and methods for performing assigned duties and maintains appropriate records.

EDUCATION

Sierra College, Truckee, CA, 2019 – 2022

General Studies

Diablo Valley College, Pleasant Hill, CA, 1998 – 2001

Certificate – Construction and Building Inspection

SAM GLUCK

PROJECT MANAGER

Sam.Gluck@itron.com

Years of Experience: 21
Itron Years: 5

Education:

B.B.A. Finance, Touro University,
New York, NY Cum Laude

Certificate:

Metasys System Extended
Architecture for Building
Operators - Johnson Control

Professional Experience:

Itron, Inc.
Jun 2017 – Present

Program Manager
Comverge
Jun 2016 – Jun 2017

Telemetry Project Manager
Johnson Controls
May 2015 – May 2016

Senior Director
Utility Advantage
Feb 2013 – Apr 2015

Program Manager – Demand
Response & Energy Curtailment
PSE&G
Aug 2009 – Dec 2012

Sam Gluck has 21 years of professional experience, including 16 years in the energy industry. He has successfully led numerous Demand Response programs throughout the United States, providing much-needed capacity to targeted load zones.

Prior to joining Itron to lead the firm's New York-based projects, Sam was at Johnson Controls where he oversaw all aspects of electric meter data for thousands of data points for a large global company, ensuring compliance with all installed JCI meters as part of its DR program. At PSE&G, Sam managed all aspects of the utility's DR program: "Cool Customer Program." He developed DR reduction calculation methodologies, strategies to incorporate DR and performance monitoring approaches into program designs and bid capacity into PJM markets—strategizing with detailed forecasting for the anticipated load. At Utility Advantage, Sam was a senior director of business development of government energy aggregation services and energy consulting services including energy efficiency, energy procurement, and renewable energy projects. For Energy Spectrum, he managed and grew key DR, energy efficiency, distributed generation, and other energy management programs in the U.S.

Sam has worked on the following similar projects:

- Central Hudson – Residential & Commercial Demand Response (NWA)
- Central Hudson – CSRP Commercial Demand Response – NY
- Eversource – Small Commercial Demand Response
- SMECO – Residential & Commercial Demand Response – Maryland
- Pepco Holding – Residential Demand Response - Maryland and DC
- Delmarva Power – Residential Demand Response - Maryland and Delaware
- San Diego Gas and Electric - AC Saver & BYOT – San Diego

MICHAEL TING

EV PRODUCT MANAGER

Michael.Ting@itron.com

Years of Experience: 27
Itron Years: 18

Education:

M.S. Energy and Resources,
University of California, Berkeley,
CA

B.A. Environmental Science,
University of California, Berkeley,
CA

Professional Experience:

Itron, Inc.
2005 – Present

Energy Policy Analyst
International Energy Agency
2001 - 2003

Senior Research Fellow
*Lawrence Berkeley National
Laboratory*
1994 - 2001

Mike Ting is a Senior Product Manager with Itron's Distributed Energy Management group. He oversees Itron's strategies and product roadmaps related to DER management solutions that leverage Itron's networks and distributed intelligence technologies.

Prior to his product management role, Mike spent over 20 years in public and private sector research and consulting with utilities, government agencies, and other stakeholders related to energy efficiency, demand response, and energy policy, including tenures at the International Energy Agency and Lawrence Berkeley National Laboratory.

Mike has worked on the following similar EV projects:

- Duke Energy Florida Off-Peak Charging Credit Program
- Duke Energy Indiana Off-Peak Charging Credit Program
- Fort Collins Managed EV Charging Pilot Program

Prior to his product management role, Mike managed the following Itron customer projects:

- Efficiency Vermont Residential Baseline Study
- PNM Residential Baseline Study
- Black Hills Energy Residential Baseline Study
- New Hampshire Statewide Residential Baseline Study
- Commonwealth Edison Residential Baseline Study
- Sacramento Municipal Utility District (SMUD) RD&D Strategic Planning Study
- CPUC LED Lab Test Study
- CPUC Energy Efficiency Measure Cost Study
- Florida Power & Light Energy Efficiency Potential Study
- PNM Energy Efficiency Potential Study

EDWIN GONZALEZ

CALL CENTER MANAGER

Edwin.Gonzalez@itron.com

Years of Experience: 20
Itron Years: 5

Education:

Computer Electronics &
Networking Technician; Dover
Business College

Memberships:

PMI.ORG

Certifications:

ITIL Foundations
ITIL Service Operations
ITIL Service Transition

Professional Experience:

Itron, Inc.
Jun 2017 – Present

Senior Manager / Customer
Relationship Consultant
Comverge
Apr 2007 – Jun 2017

Technical Support Lead
CompuCom
2004 – 2007

Lead Senior Associate
PSE&G
1999 – 2004

Edwin has 20 years of experience in the electric utility industry managing call centers and IT help desks for utility customers. He leads Itron's Distributed Energy Management (DEM) Call Center team which is responsible for the support of utility-based programs for enrollment, scheduling appointments, general questions, and promotion of the program's features and benefits. In addition, Edwin provides technical support and resolution management of customer support issues. He manages and leads the DEM call center through performance metrics, driving policy, and procedures to achieve customer support objectives by contributing information and analysis to strategic plans for customer service.

Prior to Itron, Edwin worked with Public Service Electric and Gas and CompuCom, an IT service provider delivering managed IT workplace services.

Some similar projects that Edwin has worked on include:

- LG&E KU Demand Conservation – Louisville
- PNM Power Saver – New Mexico
- SMECO CoolSentry – Maryland
- Duke EnergyWise Business – North Carolina and South Carolina
- Duke Off-Peak Credit – Florida
- Duke Power Manager for Business – Indiana
- Pepco Holding – Maryland and DC
- Delmarva Power – Maryland and Delaware
- Peak Partners Program – Fort Collins Utilities
- San Diego Gas and Electric AC Saver – San Diego

JAMES MANTHEY

SENIOR MANAGER, MANAGED SERVICES

James.Manthey@itron.com

Years of Experience: 20
Itron Years: 10

Education:

Bachelors in Electrical
Engineering, Digital Systems,
University of Tennessee,
Knoxville, TN

Professional Experience:

Itron, Inc.
Sep 2012 – Present

Utilities Technology Specialist &
Manager
Black & Veatch
Apr 2005 – Sep 2012

IT Consultant
Accenture
Jun 2000 – Apr 2005

James has more than 20 years of hands-on consulting experience in the utility industry to architect and monitoring solutions that solve business problems. He has extensive experience in architecting new technology, deploying and monitoring the Itron application, and supporting solutions in a production environment. James oversees the team that deploys our DERMS/DRMS solutions. He also oversees the team that monitors and triages solution incidents.

Some of the successful utility DR, smart metering, and energy efficiency programs he has supported include:

- Duke Florida – Residential Demand Response
- Duke Carolinas and Midwest – Residential & Small Commercial Demand Response and Electric Vehicle Off-Peak Program
- Fort Collins Utilities – Residential & Commercial Demand Response and Electric Vehicle Control
- SDG&E - Residential & Commercial Demand Response
- TECO - Demand Response/Time-of-Use Automation
- AEP – Smart Grid including Demand Response
- Pepco Holdings – Residential Demand Response
- Georgia Power – Residential Demand Response
- Central Hudson – Residential Demand Response
- PECO – Demand Response
- Gulf Power – Demand Response/Time-of-Use Automation
- Colorado Springs – Demand Response
- Eversource – Small Commercial Demand Response
- TXU – Demand Response
- PSO – Smart Grid
- First Energy – AMI

HOWARD NG

SENIOR PRODUCT MANAGER

Howard.Ng@itron.com

Years of Experience: 45

Itron Years: 5

Certifications:

- PLMA Thought Leadership Award – “*Evolution of Communications for Demand Response*” eBook
- Holder of 5 demand response patents

Education:

- Rensselaer Polytechnic Institute, Master of Science in Computer Engineering
- Cooper Union, Bachelor of Science in Electrical Engineering
- Carnegie Mellon, Executive Education Program (mini-MBA)

Professional Experience:

Itron, Inc.

Jun 2017 – Present

Vice President – Technical Sales,
Senior Product Manager

Comverge
2004 - 2017

Director, PM & Business Systems
JDS Uniphase
2001 – 2003

Engineering Director
Advanced American Telephone
2000 – 2001

Development Director
Lucent Technologies Consumer Products
1996 - 2000

Howard Ng is a Senior Product Manager with Itron’s Distributed Energy Management group. A leader with business, technical, and market knowledge in demand response to drive and deliver business results and success. Able to operate at strategic and tactical levels to bridge business and technologies and to collaborate across teams at all levels. An innovative and logical/analytical thinker, solution architect, and problem solver combined with deep knowledge in demand response to provide thought and strategic leadership to grow the business.

Qualifications include:

- Turnkey deployment for thermostats, load control switches, and software solutions.
- More than 18 years of progressive experience in supervision and solution development in the utility demand response space.
- He also is the architect and leader in the development of Itron’s AMI load control switch.
- Familiar with a variety of Itron products including networks, distributed automation, distributed intelligence, meter data management, systems, and supporting software.
- Familiar with the distribution and operation of gas, water, and electric meters and Itron 900MHz ERT technology.
- Qualified in the management and oversight of installation contractors - Familiar with industry standards, license/bonding, and OSHA requirements in the delivery of gas, water, and electric utilities.
- Proficient with MS products, in support of drafting agreements, and complex analytics in support of delivery-led programs – Including Word, Excel, PowerPoint, Team, Visio, etc.

Early in Howard’s career, he worked in product development and product marketing of telecom consumer solutions.

Howard combines years of experience with providing business and thought leadership for Itron’s end-to-end demand response solution including software and hardware products. He is a key contributor to market segmentations, product roadmap definition (architecture/planning/prioritization), business cases, pricing, and competition analysis.

BRYAN SEABOLDT

DELIVERY DIRECTOR

Bryan.Seaboldt@itron.com

Years of Experience: 22
Itron Years: 22

Education:

Masters, Business
Washington State University
B.A. – Philosophy
Washington State University

Certifications:

- Project Management Professional (PMP), *Project Management Institute (PMI)*
- Stanford Certified Project Manager (SCPM), *Stanford University. Dec 2021*
- Completed Planning and Managing Projects and Managing Integrated Projects (IPS Methodology) training classes

Professional Experience:

Itron, Inc.
May 2000 – Present

Bryan is responsible for overseeing a portfolio of Projects and Programs across Itron's West region. In this capacity, he's responsible for the oversight and management of staff responsible for the delivery and execution of solutions across Itron's portfolio of products.

Bryan routinely collaborates with Itron's Product Management, Commercial Engagement, and various other internal Teams to ensure the work Itron is supporting is truly complementary to our customers' vision and strategy.

Bryan combines years of experience with great public relations skills to successfully implement complex AMI programs (and supporting initiatives) with support from his teams.

Itron Experience:

- Turnkey deployment for electric, gas, and water meter projects which includes subcontractor management.
- More than 20 years of progressive experience in supervision and project management with strengths across Networks, Outcomes, Distributed Automation, and Meter Data Management.

Delivery Director - Responsible for a portfolio of Itron accounts in Itron's West region. Responsible for all aspects of Project and Program delivery with responsibility for Customer satisfaction and P&L delivery.

Solution Deliver Manager - Responsible for numerous water, gas, and electric network programs. Responsible to support the successful delivery of Itron solutions to Itron customers with support from the project team.

Product Management - Bryan was responsible for the management of deployment and workforce automation solutions including Field Deployment Manager. In this role, the product was developed and maintained based on market requirements and customer feedback.

Project Management - Bryan was the Program Manager responsible for deploying 2.8M electric meters over the course of 18 months at Progress Energy. Bryan was responsible for 2 project managers and 4 installation subcontractors with 250 installers. Bryan was responsible for the overall success of the program including invoicing, acceptance, and overall customer satisfaction.



Today

50,000 customers with 30+ year old electricity meters, manually read every other month

Project Leapfrog

Liberty Utilities (CalPeco Electric) LLC

(CalPeco) \$13.1M + (DOE) \$13.1M = \$26.2M

Tomorrow

Digital meters for every customer, wirelessly communicating via mesh-network in near-real time



Lower Utility Costs

Eliminate 600,000 manual meter reads every year, plus the transportation to each site and employee safety risks due to ice & snow

Immediate Impacts

Energy Democracy

More accurate utility bills for customers and making more granular consumption data available to them so they can choose when to use

More Reliability & Resiliency

Knowing when and where power is out for faster response time, better customer service, and better protection during wildfires

Job Creation

25+ new local jobs created during project construction, partnering with the community to provide opportunity in disadvantaged communities and increasing diversity in the supply chain

Energy & Data Education

Partnering with educational institutions to share the new wealth of energy data, inspiring people to learn about & develop skills in two in-demand industries

Enabling the Future

Next Level Protection

Using the new data to improve grid protection systems thereby preventing future wildfires and increasing community safety

Distributed Energy

New data reveals new understanding of consumption patterns, enabling further implementation of distributed energy

New Green Industry

New data & insights reduces the cost of new green solutions, providing more opportunity for expansion and growth in that economy



Project Leapfrog

CalPeco Electric in the Tahoe Basin

Why? (Project Goals)

- Over 40% of our customers live in disadvantaged communities, are served by aging infrastructure, and surrounded by mountainous terrain that frequently experiences extreme snowfall and is always at risk of wildfires
- We want to help enable early warning of forest fires and provide customers with energy to thrive; we do this by supplying electricity that is the most reliable, lowest-cost, and most sustainable
- Project Leapfrog, with DOE support, is needed to enable our grid to be resilient and affordable in the face of climate change and rising costs to live

HOW? (Technology Summary)

- By implementing the **Itron Gen5 Riva** solution suite (smart meters/network infrastructure/software & systems) for remote meter reading, outage management, event automation, and distributed intelligence
- This will enable faster & more accurate outage management, new loading analysis, higher safety levels for our crews, reduced carbon footprint, and ensures our systems are ready for the future



Who? (Key Personnel)

Prime Recipient: Liberty Utilities (CalPeco Electric) LLC

CalPeco Project Team:

- Lindsay Maruncic (Executive Sponsor) Senior Director, Operations
- Tami Fuhwirth (Project Lead & Safety Officer) Manager, Field Services & AMI Implementation
- Blaine Ladd (Operations SME, Organized Labor Engagement Lead) Director, Operations
- Rick Dalton (Engineering SME) Senior Director, Engineering
- Joel Rivera (Data Retention Lead) Director, Electric Controls & Dispatch Operations
- Steve Moore (Construction Management) Manager, Operations
- Jennifer Guenther (Community Engagement & Economic Development) Senior Manager, Customer Solutions
- Joey Sparks (Integration SME) Manager, AMI Operations

Itron Project Team: To be established upon project approval



STATEMENT OF PROJECT OBJECTIVES (SOPO)

Project Leapfrog: Foundational AMI and Grid Edge Computing Technology Deployment

A. OBJECTIVES

Project Leapfrog is a transformational project to a technologically advanced smart grid through the deployment of AMI to CalPeco's 49,000 residential and commercial customers alongside a suite of advanced operational and grid edge computing capabilities across four phases over five years.

Phase 1: Foundational AMI (Years 1, 2 and 3)

- Improve *grid operations* with greater visibility, more resiliency, higher operational efficiency, and improved reliability, including advanced load research and better outage management.
- Advance *energy conservation*, including reducing energy peaks and reducing CalPeco's carbon footprint through automation.
- Improve public and employee *safety*, with mitigations for extreme weather events, including forest fires and significant snowfalls, through automation, temperature sensors, two-way communications, and improved vegetation management.
- Enhance the *customer experience* through digitalization and granular data to support programs like the Green Button.
- Advance *community benefits* by engaging and upskilling a local workforce and flowing benefits to disadvantaged communities.

Phase 2: Enhanced AMI (Years 2 and 3)

- Further improve safety and efficiency for remote disconnections and reconnections with software to perform the disconnections in a controlled and sophisticated manner.
- Further improve outage management through integration with the OMS.
- Further enhance the customer experience through web access to consumption data.
- Further improve grid operations through the automation of meter events.

Phase 3: Advanced AMI (Years 3 and 4)

- Make distribution-level decisions quickly, accurately, and efficiently through data analytics and by moving grid analysis, decision-making, and control to the grid's edge.
- Optimize the efficiency of the distribution system through distribution automation.

Phase 4: MV-90 Conversion (Years 4 and 5)

- Replace obsolete equipment for large commercial and industrial accounts by converting them from MV-90 to AMI.

B. SCOPE OF WORK

Phase 1: Foundational AMI - Define, design, build, test, and pilot baseline AMI, including smart meters, network infrastructure, software, and system integrations. Deploy AMI to all 49,000 residential and commercial customers across the entire CalPeco service territory. Re-engineer affected business processes, establish a smart meter operations center with new roles and responsibilities, and train staff on new systems and processes.

Phase 2: Enhanced AMI - Deploy enhancements related to remote disconnect, OMS integration web presentment, and event automation.

Phase 3: Advanced AMI - Conduct a cost-benefit analysis of use cases for DI apps and data analytics. Proceed with the use cases that deliver the greatest benefits to CalPeco and its customers.

Phase 4: MV-90 Conversion - Convert 20 large commercial and industrial accounts from MV-90 to AMI.

C. TASKS TO BE PERFORMED

Task 1.0: Project Management and Planning

Subtask 1.1 – Project Management Plan (PMP):

Within 30 days of award, CalPeco shall submit a Project Management Plan (PMP) to the designated Federal Project Officer (FPO). CalPeco shall not proceed beyond Task 1.0 until the PMP has been accepted by the FPO. The PMP shall be revised and resubmitted as often as necessary, during the course of the project, to capture any major/significant changes to the planned approach, budget, key personnel, major resources, etc. CalPeco shall manage and direct the project in accordance with the accepted PMP to meet all technical, schedule and budget objectives and requirements. CalPeco will coordinate activities to effectively accomplish the work. CalPeco will ensure that project plans, results, and decisions are appropriately documented, and that project reporting and briefing requirements are satisfied.

Subtask 1.2: National Environmental Policy Act (NEPA) Compliance

As required, CalPeco shall provide the documentation necessary for NEPA compliance.

Subtask 1.3: Cybersecurity Plan (CSP)*

The CSP shall be revised and resubmitted as often as necessary, during the course of the project, to capture any major/significant changes.

Subtask 1.4: Continuation Briefing(s):

CalPeco will brief DOE on roughly an annual basis to explain the plans, progress and results of the technical effort. The briefing shall also describe performance relative to project success criteria, milestones, and the Go/No-Go Decision point that are documented in the Project Management Plan (PMP).

Task 2.0: Phase 1 - Foundational AMI

Phase 1 consists of the deployment of baseline AMI functionality for two-way communications.

Subtask 2.1: Define

CalPeco shall define all requirements for the project. Activities include:

- Conduct project preparation activities and hold kick-off meetings
- Facilitate workshops (meter configuration; Itron; SAP; meter installation vendor)
- Establish meter configurations
- Order meters and network equipment

Subtask 2.2: Design

CalPeco shall create the design to define how the AMI system performs the requirements.

Activities include:

- Develop the AMI Business Solutions Requirements Document (BSRD)
- Develop the Requirements Traceability Matrixes (RTM) for the CIS and the MIV
- Develop the solution design

- Plan the deployment

Subtask 2.3: Build

CalPeco shall establish all software environments and translate the design into code. Activities include:

- Establish a meter farm
- Establish development, test, and production environments
- Build and configure the software (Itron UIQ/IEE, CIS, MDM, and MIV)

Subtask 2.4: Test

CalPeco shall validate all business and technical requirements through comprehensive testing. Activities include:

- Develop a test plan, test cases and test scenarios
- Complete first article testing
- Run a small-scale pilot
- Complete functional, system integration, failover, and user acceptance testing

Subtask 2.5: Deploy

CalPeco shall deploy AMI to all residential and commercial customers. Activities include:

- Install the network
- Train staff (Itron, MIV, CIS)
- Modify/develop business processes and standard operating procedures
- Conduct knowledge transfer sessions
- Establish a smart meter operations center
- Prepare for go-live
- Install the meters in a mass deployment

Task 3.0: Phase 2 - Enhanced AMI

Phase 2 layers on enhanced functionality to give customers access to their consumption data, integrate the OMS for outage and restoration data, and automate meter events.

Subtask 3.1: Deploy Remote Disconnect/Reconnect Functionality

CalPeco shall deploy functionality to enable CalPeco to remotely disconnect and reconnect customers. Activities include:

- Develop a remote disconnect/reconnect policy and customer communications
- Test the functionality
- Conduct staff training
- Implement the functionality (go-live)

Subtask 3.1: Integrate the OMS

CalPeco shall integrate the OMS for improved outage management. Activities include:

- Define the requirements and create the design
- Build the code to enable integration
- Test the integration
- Train staff and transition the operations
- Deploy the functionality

Subtask 3.2: Automate Meter Event Management

CalPeco shall deploy functionality to enable CalPeco to automate managing meter events, such

as alarms.

Activities include:

- Define the requirements and create the design
- Build the code
- Test the software
- Train staff and transition the operations
- Deploy the functionality

Subtask 3.3: Deploy Web Presentment

CalPeco shall deploy functionality that enables customers to view and use their consumption data. Activities include:

- Define the requirements and create the design
- Build the code
- Test the software
- Train staff and transition the operations
- Develop customer communications
- Deploy the functionality

Task 4.0: Phase 3 - Advanced AMI

Phase 3 transforms operations and the customer experience by deploying distributed intelligence apps, data analytics, and distribution automation.

Subtask 4.1: Deploy Apps

CalPeco shall conduct a cost-benefit analysis of each use case and deploy those that deliver the greatest benefits to CalPeco and its customers. Activities for each app include:

- Conduct a cost-benefit analysis
- Develop the functional specs
- Integrate the app on the DI platform and with any other utility systems, as required
- Validate and fix format and quality issues
- Complete acceptance testing
- Train staff and develop communications material
- Deploy the solution

Subtask 4.2: Distribution Automation

CalPeco shall deploy DA functionality by combining existing feeder-level SCADA information with localized metering DI data from CalPeco's 49,000 devices, determining which DI data to import and integrate in packages of data sets. Activities include:

- Create, define, and build DA into OMS analytics
- Integrate DI "edge" data into OMS and test outage scenarios
- Develop DA for emergency DR and smart grid DR peak-shaving programs

Task 5.0: Phase 4 - MV-90 Conversion

The objective of phase 4 is to upgrade the data collection system and communication protocol for the utility's largest industrial and commercial accounts.

Subtask 5.1: Convert MV-90 Accounts

CalPeco shall convert MV-90 large industrial and commercial accounts to AMI. Activities include:

- Deploy the latest version of MV-90 into all environments

- Verify connectivity of meters to MV-90
- Integrate MV-90 to AMI and test data collection and processing
- Train staff on the new application.

D. DELIVERABLES

Subtask 1.1 - Project Management Plan

Subtask 1.3 – Cybersecurity Plan

Subtask 1.4 – Pre-Continuation Briefing Document(s)

Subtask 2.1 - Project Charter

Subtask 2.1 – Risk Management Plan

Subtask 2.1 - Integrated Project Plan

Subtask 2.1 - Business Continuity and Disaster Recovery Plans

Subtask 2.2 - Business Solution and Integration Design Documents

Subtask 2.2 - Requirements Traceability Matrixes

Subtask 2.2 - Technical Architecture Document

Subtask 2.4 - Master Test Strategy and Plan

Subtask 2.4 - Test Exit Reports

Subtask 2.5 - Training Plan

Subtask 2.5 - Knowledge Transfer Plan

Subtask 2.5 - Organizational Change Readiness Plan and Change Management Procedures

Subtask 2.5 - Customer Communications Plan

Subtask 2.5 - Go-Live Plan and Lessons Learned from Go-Live

Subtask 2.5 - Performance KPI Reports

In addition to the deliverables listed above, CalPeco shall submit all periodic, topical, final, and other reports in accordance with the Federal Assistance Reporting Checklist and accompanying instructions.

E. BRIEFINGS/TECHNICAL PRESENTATIONS

CalPeco 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 CalPeco'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, CalPeco 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, the Recipient 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, CalPeco shall prepare and present a Final Project Briefing on the results and accomplishments of the entire project.

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

SUMMARY/ABSTRACT FOR PUBLIC RELEASE

Project Leapfrog: Foundational AMI and Grid Edge Computing Technology Deployment
Project Manager: Tami Fruhwirth

Project Leapfrog is proposed by Liberty Utilities (CalPeco Electric) LLC (“CalPeco”) and its technology partner, Itron, to upgrade CalPeco’s electrical metering system and transforming it into an automated, best-in-class smart network in a single leap.

This project will replace 49,000 stand-alone analog electric meters with digital smart meters that wirelessly communicate consumption and outage information to CalPeco in near real-time using pole-top cellular radios. This Advanced Metering Infrastructure (“AMI”) will work together with new operational systems that have grid edge computing capabilities, bringing a wealth of information and benefits to our customers and their communities.

CalPeco faces unique challenges in providing reliable service because its service territory is mountainous, sparsely populated, and subjected to extreme weather such as heavy snowfall, droughts, and wildfires. The goal of Project Leapfrog is to increase utility visibility towards the grid edge so that CalPeco can serve its customers better. In the near term AMI will provide value in the following manner:

- Improving reliability** by having faster, automated information about where power outages are
- Reducing risk** to our employees by enabling remote meter reading and avoiding dangerous travel
- Increasing safety** of our communities by having better tools for wildfire prevention
- Higher accuracy** of customer electricity bills from more frequent readings
- Information sharing** by making detailed consumption information available to customers
- Lowering cost & carbon footprint** by reducing constant travel to collect meter readings

With the benefits of grid edge computing, CalPeco will have much greater visibility into system loading trends and how they change throughout the year. This data is a crucial building block to enabling connection of distributed energy resources, including backup batteries and carbon-free generation, that help improve system resiliency. In the medium to longer term we aim to use this information to:

- Refine** system protection settings to maximize system resiliency
- Identify** the best places to put backup generation to keep power on during emergencies
- Collaborate** with educational partners and green energy providers to foster learning and growth
- Enable** other new programs such as Electric Vehicle (“EV”) charging

Project Leapfrog is a technically transformational project that will also result in the creation of 25 new jobs to install the meters, provide logistical support such as warehousing, and integrate the new systems. CalPeco looks forward to engaging with the local community to develop partnerships which will help to fill open roles and foster diversity within the supply chain.

Instructions and Summary

Award Number: DE-FOA-0002740
Award Recipient: Liberty Utilities (CalPeco Electric) LLC

Date of Submission: 17-Mar-23
Form submitted by: Liberty Utilities (CalPeco Electric) LLC
(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!
 Do not modify this template or any cells for formulas!**

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.
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, contractors, 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 and 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 24 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		\$4,124,687	\$4,124,687			\$8,249,374	50.00%	1/01/2024 - 12/31/2024	
Budget Period 2		\$5,363,190	\$5,363,190			\$10,726,381	50.00%	1/01/2025 - 12/31/2025	
Budget Period 3		\$2,624,198	\$2,624,198			\$5,248,396	50.00%	1/01/2026 - 12/31/2026	
Budget Period 4		\$474,390	\$474,390			\$948,779	50.00%	1/01/2027 - 12/31/2027	
Budget Period 5		\$484,835	\$484,835			\$969,669	50.00%	1/01/2028 - 12/31/2028	
Total		\$13,071,300	\$13,071,300			\$26,142,600	50.00%		
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	(b)(4)							14.26%	
b. Fringe Benefits	\$519,480	\$297,258	\$306,176	\$126,144	\$129,929	\$1,378,987	5.27%		
c. Travel	\$76,000	\$38,000	\$38,000	\$0	\$0	\$152,000	0.58%		
d. Equipment	\$29,305	\$117,218	\$0	\$0	\$0	\$146,523	0.56%		
e. Supplies	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
f. Contractual									
Sub-recipient								67.89%	
Contractor	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
FFRDC	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
Total Contractual								67.89%	
g. Construction								11.44%	
h. Other Direct Costs	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
Total Direct Costs	\$8,249,374	\$10,726,381	\$5,248,396	\$948,779	\$969,669	\$26,142,600	100.00%		
i. Indirect Charges	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
Total Costs	\$8,249,374	\$10,726,381	\$5,248,396	\$948,779	\$969,669	\$26,142,600	100.00%		

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
Total Personnel	1,404,000	37%	\$519,480	803,400	37%	\$297,258	827,502	37%	\$306,176	340,931	37%	\$126,144	351,159	37%	\$129,929	\$1,378,987
			\$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:	\$1,404,000		\$519,480	\$803,400		\$297,258	\$827,502		\$306,176	\$340,931		\$126,144	\$351,159		\$129,929	\$1,378,987

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 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 op

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. Only travel that is directly associated with this award should be included as a direct travel cost to the award.
4. Federal travel regulations are contained within the applicable cost principles for all entity types.
5. 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.
6. Columns E, F, G, H, I, J, and K are per trip.
7. The number of days is inclusive of the day of departure and the day of return.
8. Recipients should enter City and State (or City and Country for International travel) in the Depart from and Destination fields.
9. 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
	Site Visits to assist with Implementation		Calpeco	20	4	\$250	\$500	\$100	\$100	\$76,000	Current estimates
										\$0	
										\$0	
										\$0	
International Travel										\$0	
Budget Period 1 Total										\$76,000	
Domestic Travel		Budget Period 2									
	Site Visits to assist with Implementation		Calpeco	10	4	\$250	\$500	\$100	\$100	\$38,000	Current estimates
										\$0	
										\$0	
										\$0	
International Travel										\$0	
Budget Period 2 Total										\$38,000	
Domestic Travel		Budget Period 3									
	Site Visits to assist with Implementation		Calpeco	10	4	\$250	\$500	\$100	\$100	\$38,000	Current estimates
										\$0	
										\$0	
										\$0	
International Travel										\$0	
Budget Period 3 Total										\$38,000	
Domestic Travel		Budget Period 4									
										\$0	
										\$0	
										\$0	
										\$0	
International Travel										\$0	
Budget Period 4 Total										\$0	
Domestic Travel		Budget Period 5									
										\$0	
										\$0	
										\$0	
										\$0	
International Travel										\$0	
Budget Period 5 Total										\$0	
PROJECT TOTAL										\$152,000	

Additional Explanation (as needed):

d. Equipment

INSTRUCTIONS - PLEASE READ!!!

1. Equipment is generally defined as an item with an acquisition cost greater than \$5,000 and a useful life expectancy of more than one year. Please refer to the applicable Federal regulations in 2 CFR 200 for specific equipment definitions and treatment.
2. List all equipment below, providing a basis of cost (e.g. contractor quotes, catalog prices, prior invoices, etc.). Briefly justify items as they apply to the Statement of Project Objectives. If it is existing equipment, provide logical support for the estimated value shown.
3. During award negotiations, provide a contractor quote for all equipment items over \$50,000 in price. If the contractor quote is not an exact price match, provide an explanation in the additional explanation section below. If a contractor quote is not practical, such as for a piece of equipment that is purpose-built, first of its kind, or otherwise not available off the shelf, provide a detailed engineering estimate for how the cost estimate was derived.
4. Each budget period is rounded to the nearest dollar.

SOPO Task #	Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
3,4,5	EXAMPLE!!! Thermal shock chamber	2	\$70,000	\$140,000	Vendor Quote - Attached	Reliability testing of PV modules- Task 4.3
	Marketing Materials	9768	\$3	\$29,305	Estimate based off previous customer campaigns	An estimate of \$3/customer to deliver educational material of the AMI initiative
	Budget Period 1 Total			\$29,305	29,305	
Budget Period 2						
	Marketing Materials	39073	\$3	\$117,218	Estimate based off previous customer campaigns	An estimate of \$3/customer to deliver educational material of the AMI initiative
				\$0		
	Budget Period 2 Total			\$117,218	117,218	
Budget Period 3						
				\$0		
	Budget Period 3 Total			\$0	0	
Budget Period 4						
				\$0		
				\$0		
	Budget Period 4 Total			\$0		
Budget Period 5						
				\$0		
				\$0		
	Budget Period 5 Total			\$0		
	TOTAL EQUIPMENT			\$146,523		

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. contractor 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		
				\$0		
Budget Period 1 Total				\$0		
Budget Period 2						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 2 Total				\$0		
Budget Period 3						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 3 Total				\$0		
Budget Period 4						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 4 Total				\$0		
Budget Period 5						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 5 Total				\$0		
TOTAL SUPPLIES				\$0		

Additional Explanation (as needed):

f. Contractual

INSTRUCTIONS - PLEASE READ!!!

1. The entity completing this form must provide all costs related to sub-recipients, contractors, and FFRDC partners in the applicable boxes below.
2. Sub-recipients (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) 25% of total award costs. These sub-recipient forms may be completed by either the sub-recipients themselves or by the preparer of this form. The budget totals on the sub-recipient's forms must match the sub-recipient 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. contractor status.
3. Contractors: List all contractors supplying commercial supplies or services used to support the project. For each Contractor cost with total project costs of \$100,000 or more, a Contractor quote must be provided. A contractor 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. contractor 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	Sub-Recipient Unique Entity Identifier (UEI)	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
	(b)(4)								
									\$0
									\$0
									\$0
			Sub-total	\$5,993,995	\$7,258,861	\$3,523,808	\$481,704	\$488,582	\$17,746,949

SOPO Task #	Contractor 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.	Contractor for developing robotics to perform lens inspection. Estimate provided by contractor.	\$32,900	\$86,500				\$119,400
								\$0
								\$0
								\$0
								\$0
								\$0
			Sub-total	\$0	\$0	\$0	\$0	\$0

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
								\$0
			Sub-total	\$0	\$0	\$0	\$0	\$0

Total Contractual	\$5,993,995	\$7,258,861	\$3,523,808	\$481,704	\$488,582	\$17,746,949
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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 contractor 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.
	Installation of the AMI Meters	(b)(4)		Removal of the current meters and installation of the AMI meters at all commercial and residential properties
	Installation of the Network Hardware			Installation of the network hardware required to gather meter reads
	Budget Period 1 Total	\$226,595		
Budget Period 2				
	Installation of the AMI Meters			Removal of the current meters and installation of the AMI meters at all commercial and residential properties
	Budget Period 2 Total			
Budget Period 3				
	Installation of the AMI Meters			Removal of the current meters and installation of the AMI meters at all commercial and residential properties
	Budget Period 3 Total			
Budget Period 4				
	Budget Period 4 Total	\$0		
Budget Period 5				
	Budget Period 5 Total	\$0		
	TOTAL CONSTRUCTION	\$2,991,149		

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		
TOTAL OTHER DIRECT COSTS		\$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. **NOTE:** A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim resulting cost as a Cost Share contribution, nor can the Recipient claim "unrecovered indirect costs" as a Cost Share contribution.** Neither of these costs can be reflected as actual indirect cost rates realized by the organization, and therefore are not verifiable in the Recipient records as required by Federal Regulation (200.306(b)(1))
- 5.. **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%		<i>Example: Labor + Fringe</i>
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.

The organization does not have a current, federally approved indirect cost rate agreement and has provided an indirect rate proposal in support of the proposed costs.

This organization has elected to apply a 10% de minimis rate in accordance with 2 CFR 200.414(f).

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. **Contractors may not provide cost share.** 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. **Contractors 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
Calpeco	Cash	Personnel (here and below - all categories assume 50% Empire contribution)	\$702,000	\$401,700	\$413,751	\$170,465	\$175,579	\$1,863,496
Calpeco	Cash	Fringe Benefits	\$259,740	\$148,629	\$153,088	\$63,072	\$64,964	\$689,493
Calpeco	Cash	Travel	\$38,000	\$19,000	\$19,000	\$0	\$0	\$76,000
Calpeco	Cash	Equipment	\$14,652	\$58,609	\$0	\$0	\$0	\$73,262
Calpeco	Cash	Supplies	\$0	\$0	\$0	\$0	\$0	\$0
Calpeco	Cash	Contractual	\$2,996,997	\$3,629,431	\$1,761,904	\$240,852	\$244,291	\$8,873,475
Calpeco	Cash	Construction	\$113,297	\$1,105,822	\$276,455	\$0	\$0	\$1,495,575
								\$0
								\$0
								\$0
		TOTAL COST SHARE	\$4,124,687	\$5,363,190	\$2,624,198	\$474,390	\$484,835	\$13,071,300

Total Project Cost: \$26,142,600

Cost Share Percent of Award:

50.0%

Additional Explanation (as needed):

Applicant Name: Liberty Utilities (CalPeco Electric) Award Number: DE-FOA-0002740

Budget Information - Non Construction Programs NOT Relevant to Current Construction Project

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)		

Instructions and Summary

Award Number: DE-FOA-0002740
Award Recipient: Itron Inc (Sub-Recipient)

Date of Submission: 17-Mar-23
Form submitted by: Liberty Utilities (CalPeco Electric) LLC
(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!
 Do not modify this template or any cells for formulas!**

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.
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, contractors, 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 and 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 24 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	\$1,308,921	\$1,308,921			\$2,617,843	50.00%	1/01/2024 - 12/31/2024
	Budget Period 2	\$4,754,252	\$4,754,252			\$9,508,505	50.00%	1/01/2025 - 12/31/2025
	Budget Period 3	\$2,057,359	\$2,057,359			\$4,114,718	50.00%	1/01/2026 - 12/31/2026
	Budget Period 4	\$240,852	\$240,852			\$481,704	50.00%	1/01/2027 - 12/31/2027
	Budget Period 5	\$244,291	\$244,291			\$488,582	50.00%	1/01/2028 - 12/31/2028
	Total	\$8,605,676	\$8,605,676			\$17,211,351	50.00%	
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	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
b. Fringe Benefits	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
c. Travel	\$76,000	\$38,000	\$38,000	\$0	\$0	\$152,000	0.88%	
d. Equipment	(b) (4)							
e. Supplies	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
f. Contractual	(b) (4)							
Sub-recipient	(b) (4)							
Contractor	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
FFRDC	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Contractual	(b) (4)							
g. Construction	(b) (4)							
h. Other Direct Costs	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Direct Costs	\$2,617,843	\$9,508,505	\$4,114,718	\$481,704	\$488,582	\$17,211,351	100.00%	
i. Indirect Charges	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Costs	\$2,617,843	\$9,508,505	\$4,114,718	\$481,704	\$488,582	\$17,211,351	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 contractors 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 hourly rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., rate negotiated for each hour worked on the project, 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)	Hourly Rate (\$/Hr)	Total Budget Period 1	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 2	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 3	Time (Hrs)	Hourly Rate (\$/Hr)	Total Budget Period 4	Time (Hrs)	Hourly 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	
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	
1				\$0			\$0			\$0			\$0			\$0	0	\$0	
2				\$0			\$0			\$0			\$0			\$0	0	\$0	
3				\$0			\$0			\$0			\$0			\$0	0	\$0	
4				\$0			\$0			\$0			\$0			\$0	0	\$0	
5				\$0			\$0			\$0			\$0			\$0	0	\$0	
6				\$0			\$0			\$0			\$0			\$0	0	\$0	
7				\$0			\$0			\$0			\$0			\$0	0	\$0	
8				\$0			\$0			\$0			\$0			\$0	0	\$0	
9				\$0			\$0			\$0			\$0			\$0	0	\$0	
10				\$0			\$0			\$0			\$0			\$0	0	\$0	
11				\$0			\$0			\$0			\$0			\$0	0	\$0	
				\$0			\$0			\$0			\$0			\$0	0	\$0	
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				\$0			\$0			\$0			\$0			\$0	0	\$0	
				\$0			\$0			\$0			\$0			\$0	0	\$0	
				\$0			\$0			\$0			\$0			\$0	0	\$0	
Total Personnel Costs		0		\$0	0		\$0	0		\$0	0		\$0	0		\$0	0	\$0	

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
Total Personnel			\$0			\$0			\$0			\$0			\$0	\$0
			\$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 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 op

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. Only travel that is directly associated with this award should be included as a direct travel cost to the award.
4. Federal travel regulations are contained within the applicable cost principles for all entity types.
5. 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.
6. Columns E, F, G, H, I, J, and K are per trip.
7. The number of days is inclusive of the day of departure and the day of return.
8. Recipients should enter City and State (or City and Country for International travel) in the Depart from and Destination fields.
9. 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
	Site Visits to assist with Implementation		Calpeco	20	4	\$250	\$500	\$100	\$100	\$76,000	Current estimates
										\$0	
										\$0	
										\$0	
International Travel											
										\$0	
Budget Period 1 Total										\$76,000	
Domestic Travel		Budget Period 2									
	Site Visits to assist with Implementation		Calpeco	10	4	\$250	\$500	\$100	\$100	\$38,000	Current estimates
										\$0	
										\$0	
										\$0	
International Travel											
										\$0	
Budget Period 2 Total										\$38,000	
Domestic Travel		Budget Period 3									
	Site Visits to assist with Implementation		Calpeco	10	4	\$250	\$500	\$100	\$100	\$38,000	Current estimates
										\$0	
										\$0	
										\$0	
International Travel											
										\$0	
Budget Period 3 Total										\$38,000	
Domestic Travel		Budget Period 4									
										\$0	
										\$0	
										\$0	
										\$0	
International Travel											
										\$0	
Budget Period 4 Total										\$0	
Domestic Travel		Budget Period 5									
										\$0	
										\$0	
										\$0	
										\$0	
International Travel											
										\$0	
Budget Period 5 Total										\$0	
PROJECT TOTAL										\$152,000	

Additional Explanation (as needed):

d. Equipment

INSTRUCTIONS - PLEASE READ!!!

1. Equipment is generally defined as an item with an acquisition cost greater than \$5,000 and a useful life expectancy of more than one year. Please refer to the applicable Federal regulations in 2 CFR 200 for specific equipment definitions and treatment.
2. List all equipment below, providing a basis of cost (e.g. contractor quotes, catalog prices, prior invoices, etc.). Briefly justify items as they apply to the Statement of Project Objectives. If it is existing equipment, provide logical support for the estimated value shown.
3. During award negotiations, provide a contractor quote for all equipment items over \$50,000 in price. If the contractor quote is not an exact price match, provide an explanation in the additional explanation section below. If a contractor quote is not practical, such as for a piece of equipment that is purpose-built, first of its kind, or otherwise not available off the shelf, provide a detailed engineering estimate for how the cost estimate was derived.
4. Each budget period is rounded to the nearest dollar.

SOPO Task #	Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
3,4,5	EXAMPLE!!! Thermal shock chamber	2	\$70,000	\$140,000	Vendor Quote - Attached	Reliability testing of PV modules- Task 4.3
	Head-End System (HES) Software Licenses	1				Required to implement the system to gather meter reads
	Network Hardware and Field Tool	1				Network Hardware required to communicate with AMI meters
	Meter Data Management (MDM) License	1				License required for the software system required to validate, edit and estimate the gathered meter reads in order to get them ready for billing
	HES and MDM Software Implementation	1				Professional services required to stand up the HES and MDM
	Test Meters	1500				Meters required to test all functionality of the HES and MDM solutions
	Budget Period 1 Total					
Budget Period 2						
	AMI Meters	37873				Remaining AMI Meters to deploy the solution
	HES Software Maintenance and Hosting	1				Licensing and hosting required for the HES
	Meter Data Management (MDM) License	1				License required for the software system required to validate, edit and estimate the gathered meter reads in order to get them ready for billing
	MV-90 Meters and Related Software	1				Commerical meters and software that will be read through the AMI network
				\$0		
	Budget Period 2 Total					
Budget Period 3						
	HES Software Maintenance and Hosting	1				Licensing and hosting required for the HES
	Meter Data Management (MDM) License	1				License required for the software system required to validate, edit and estimate the gathered meter reads in order to get them ready for billing
	AMI Meters	9468				Remaining AMI Meters to deploy the solution
	DI Apps	48841				DI Applications on meters required for smart grid use cases
				\$0		
				\$0		
	Budget Period 3 Total					
Budget Period 4						
	HES Software Maintenance and Hosting	1				Licensing and hosting required for the HES
	Meter Data Management (MDM) License	1				License required for the software system required to validate, edit and estimate the gathered meter reads in order to get them ready for billing
	DI Apps	48841				DI Applications on meters required for smart grid use cases
				\$0		
				\$0		
				\$0		
	Budget Period 4 Total					
Budget Period 5						
	HES Software Maintenance and Hosting	1				Licensing and hosting required for the HES
	Meter Data Management (MDM) License	1				License required for the software system required to validate, edit and estimate the gathered meter reads in order to get them ready for billing
	DI Apps	48841				DI Applications on meters required for smart grid use cases
				\$0		
				\$0		
				\$0		
	Budget Period 5 Total					
	TOTAL EQUIPMENT					

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. contractor 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		
Budget Period 2 Total				\$0		
Budget Period 3						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 3 Total				\$0		
Budget Period 4						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 4 Total				\$0		
Budget Period 5						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 5 Total				\$0		
TOTAL SUPPLIES				\$0		

Additional Explanation (as needed):

f. Contractual

INSTRUCTIONS - PLEASE READ!!!

1. The entity completing this form must provide all costs related to sub-recipients, contractors, and FFRDC partners in the applicable boxes below.
2. Sub-recipients (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) 25% of total award costs. These sub-recipient forms may be completed by either the sub-recipients themselves or by the preparer of this form. The budget totals on the sub-recipient's forms must match the sub-recipient 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. contractor status.
3. Contractors: List all contractors supplying commercial supplies or services used to support the project. For each Contractor cost with total project costs of \$100,000 or more, a Contractor quote must be provided. A contractor 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. contractor 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	Sub-Recipient Unique Entity Identifier (UEI)	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
	ltron		Professional services to help design, build, test, and implement the full AMI solution						\$0
									\$0
									\$0
									\$0
			Sub-total				\$0	\$0	\$3,324,686

SOPO Task #	Contractor 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.	Contractor for developing robotics to perform lens inspection. Estimate provided by contractor.	\$32,900	\$86,500				\$119,400
								\$0
								\$0
								\$0
								\$0
		Sub-total	\$0	\$0	\$0	\$0	\$0	\$0

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	
--------------------------	--

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 contractor 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.
	Installation of the AMI Meters	(b) (4)		Removal of the current meters and installation of the AMI meters at all commercial and residential properties
	Budget Period 1 Total			
Budget Period 2				
	Installation of the AMI Meters	(b) (4)		Removal of the current meters and installation of the AMI meters at all commercial and residential properties
	Budget Period 2 Total			
Budget Period 3				
	Installation of the AMI Meters	(b) (4)		Removal of the current meters and installation of the AMI meters at all commercial and residential properties
	Budget Period 3 Total			
Budget Period 4				
	Budget Period 4 Total	\$0		
Budget Period 5				
	Budget Period 5 Total	\$0		
	TOTAL CONSTRUCTION			

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		
TOTAL OTHER DIRECT COSTS		\$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. **NOTE:** A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim resulting cost as a Cost Share contribution, nor can the Recipient claim "unrecovered indirect costs" as a Cost Share contribution.** Neither of these costs can be reflected as actual indirect cost rates realized by the organization, and therefore are not verifiable in the Recipient records as required by Federal Regulation (200.306(b)(1))
5. **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%		<i>Example: Labor + Fringe</i>
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.
- The organization does not have a current, federally approved indirect cost rate agreement and has provided an indirect rate proposal in support of the proposed costs.
- This organization has elected to apply a 10% de minimis rate in accordance with 2 CFR 200.414(f).

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. **Contractors may not provide cost share.** 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. **Contractors 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
Calpeco	Cash	Personnel (here and below - all categories assume 50% Empire contribution)	\$0	\$0	\$0	\$0	\$0	\$0
Calpeco	Cash	Fringe Benefits	\$0	\$0	\$0	\$0	\$0	\$0
Calpeco	Cash	Travel	\$38,000	\$19,000	\$19,000	\$0	\$0	\$76,000
Calpeco	Cash	Equipment	\$653,066	\$3,342,402	\$960,647	\$240,852	\$244,291	\$5,441,258
Calpeco	Cash	Supplies	\$0	\$0	\$0	\$0	\$0	\$0
Calpeco	Cash	Contractual	\$574,058	\$287,029	\$801,257	\$0	\$0	\$1,662,343
Calpeco	Cash	Construction	\$43,797	\$1,105,822	\$276,455	\$0	\$0	\$1,426,075
								\$0
								\$0
								\$0
TOTAL COST SHARE			\$1,308,921	\$4,754,252	\$2,057,359	\$240,852	\$244,291	\$8,605,676

Total Project Cost: \$17,211,351

Cost Share Percent of Award:

50.0%

Additional Explanation (as needed):

Budget Information - Non Construction Programs - NOT Relevant to Current Construction Project

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)