

EXHIBIT A
Scope of Work
Antelope Valley Water Storage, LLC

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Economics and Metrics
3		APH Experience Incorporation
4	X	Design and Construction of Facilities
5		Community Outreach
6		Deployment in Disadvantaged and Low-Income Communities
7	X	Operations and Field Tests
8		Project Benefits
9		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
APH	Aquifer Pumped Hydro (APH) is a form of pumped storage technology that uses the groundwater aquifer as the lower reservoir and a small, earthen reservoir on the ground surface as the upper reservoir. The individual Aquifer Pumped Hydro unit consists of a reversible pump/turbine, a well, and related equipment. The pump/turbine generates electricity from water flowing down the well hole. It stores electricity at other times by pumping water up the well to the surface using electric power.
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review ¹
Disadvantaged Community	Disadvantaged Community (DAC) is defined as an area representing census tracts scoring in the top 25 % in CalEnviroScreen 3.0. (https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30)
IOU	Investor Owned Utility
Low-Income Community	Low-income Community is defined as a community within census tracts with median household incomes at or below 80 percent of the statewide median income, or at or below the threshold designated as low-income by the California Department of Housing and Community Development. (http://www.hcd.ca.gov/grants-funding/income-limits/index.shtml)
NEM	The APH technology is behind-the-meter and will require a Net Energy Metering (NEM) interconnection/agreement with SCE. For the demonstration, the stored energy will be discharged to provide on-peak power to SCE during the evening ramp up and recharged off-peak.
PSPS	Public Safety Power Shut Off
Regeneration	Regeneration wells are retrofitted for pumped storage to release energy as well as extract water
SCE	Southern California Edison

¹ Please see subtask 1.3 in Part III of the Scope of Work (General Project Tasks) for a description of Critical Project Review (CPR) Meetings.

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SGMA	The Sustainable Groundwater Management Act (SGMA), which aims to manage California’s groundwater basins sustainably. The Central Valley is currently over-drafted. Pumping is greater than the recharge, causing subsidence. To fix this problem, SGMA requires that all basins reduce extractions to match recharge. This may require additional recharge, fallowing of farmland, or both.
TAC	Technical Advisory Committee

I. GOALS AND OBJECTIVES

A. Purpose of Agreement

The purpose of this Agreement is to fund a behind the meter demonstration of a non-lithium ion energy storage technology, Aquifer Pumped Hydro (APH), which can provide a minimum of 10 hours of energy storage/discharge capability at a minimum rating of 50 kilowatts. The project will assist in better understanding APH and define the value and benefits that longer duration APH energy storage can provide over lithium-ion energy storage, especially when applied in Disadvantage Communities (DAC) and Low-Income Communities.

B. Problem/ Solution Statement

Problem

The increased emphasis on resiliency in the state is driving the need for longer duration energy storage backup capabilities. Longer duration energy storage and energy discharge is needed to respond to unplanned grid outages, curtailment risk, Public Safety Power Shutoffs (PSPS) and to increase renewables penetration. DAC and Low-Income Communities are especially vulnerable to preemptive shutoffs. Many of them cannot afford emergency generators. As wildfires become more common, new energy storage/discharge technologies are needed that provide economical, standalone power when the grid is down.

The California grid is facing three issues that could benefit from longer duration energy storage:

1. **Evening Ramp Up:** There is not enough power for the grid during the 5-hour evening ramp up (from 4:00 to 9:00 p.m.) as solar goes offline but consumers turn on appliances. The 2-4 hour discharge of lithium batteries has trouble covering the 5-6 hour ramp up period.
2. **Public Safety Power Shutoffs:** Increased wildfire risks have forced Investor Owned Utilities to shut down transmission lines during high wind events. For example, in October of 2019, power to 800,000 customers (2.5-3.0 million people) was shut off due to wildfire risks. These preemptive shutoffs created major disruptions and may have contributed to at least one death.

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3. **Overgeneration:** In non-summer months, especially in the springtime, there is a glut of solar energy in the afternoons and a dearth of generation in the early evening hours. This creates risks of overgeneration and curtailment of renewables.

Over 90% of the energy storage systems built to date in California use lithium ion batteries. Excessive reliance on lithium batteries can create materials and minerals shortages, and safety issues from thermal runaway. Also, lithium batteries have a limited lifetime due to the number of cycles that can be performed, typically 500 to 1,500. With daily use, a lithium battery is worn out in about 3 years. Old lithium batteries create a disposal problem. They are also limited to a 2-4-hour discharge, which is not enough to cover the evening ramp up.

Solution

A groundwater storage facility will be used for demonstration of APH technology. Groundwater will be used to fill and drain a small surface reservoir. An existing well at the demonstrate site with at least a 150 kW, or 200 horsepower (HP) nameplate capacity well motor will be retrofitted to also act as generator. At 35% generation efficiency, the well will produce at least 50 kW of power. The technology is behind-the-meter and will require a Net Energy Metering (NEM) interconnection agreement with SCE. For the demonstration, the stored energy will be discharged to provide on-peak power to SCE during the evening ramp up and recharged off-peak. The end-use customer will benefit from the differential between on and off-peak SCE rates.

The facility will be operated for one year to demonstrate that a minimum of 10hour discharges can be produced reliably. The regeneration well will be operated to provide at least 50 kW of energy discharge using local groundwater. They will also be operated with imported water to show 100+ hour energy discharge during simulated PSPS outages.

The test well will be used to demonstrate both the two-way groundwater dependent APH as well as the one-way configuration that stores energy when imported water is available. Using imported water is an added value aspect of this project for DACs and Low-Income Communities that will be negatively impacted by both PSPS and Sustainable Groundwater Management Act (SGMA)² events.

C. Goals and Objectives of the Agreement

Agreement Goals

This Agreement will demonstrate and define the necessary technical, financial, and operational resources to assess the potential of energy storage/discharge with APH to provide continuous energy discharge during grid outages, during peak periods, and during PSPS events; which provide end-user benefits that may drive wide-scale adoption of the technology in California.

² The Sustainable Groundwater Management Act (SGMA) aims to manage California's groundwater basins sustainably. The Central Valley is currently over-drafted. Pumping is greater than the recharge, causing subsidence. To fix this problem, SGMA requires that all basins reduce extractions to match recharge. This may require additional recharge, fallowing of farmland, or both.

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- Demonstrate how APH offers the end user customer the opportunity to receive increased reliability, resiliency, cost saving and other services during times of power interruptions;
- Identify how continuous energy discharge with APH can be applied to avoid disruption of power supply to critical facilities like hospitals, nursing homes, and emergency charging centers during PSPS events;
- Demonstrate how energy storage with APH can provide extra energy discharge during the summer evening ramp up; and address absorption of surplus renewables in the winter and spring on the weekends during off-peak or super off-peak hours, thereby mitigating renewable curtailment;
- Demonstrate how the behind-the-meter APH technology can incentivize participation by IOU customers; and
- Demonstrate the commercial potential of the APH technology in California due to the distributed nature of wells, benefits for transmission congestion, distribution reliability, end-user energy shifting and scalability.
- The APH technology shall have been demonstrated in the field at a Technology Readiness Level (TRL) of at least six with the capability to reach a TRL of seven when entering the demonstration phase. The goal is to advance to a TRL of eight upon completion of this Agreement.

Ratepayer Benefits:³ This Agreement will result in California ratepayer benefits including: (1) reduced peak power cost, (2) power during PSPS event, (3) longer life cycle than lithium battery, and (4) potential for rapid implementation, especially within Low-Income Communities and DACs. APH can also be used to inject water into contaminated aquifers where clay layers prevent conventional recharge with percolation, diluting contamination and improving water quality. The benefits will be measured and verified during the demonstration test. Ratepayer benefits will be obtained from:

- Reliability improvements for the grid a minimum of 10 hours of energy discharge for PSPS event;
- Cost benefits are expected from lower installation cost, lower life cycle cost, competitive capacity costs and reduced transmission needs due to distributed power sources; and
- Safety benefits due to no thermal runaway risk and less GHGs due to improved renewables penetration.

Technological Advancement and Breakthroughs:⁴ This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals by providing a cost-effective resilient and

³ California Public Resources Code, Section 25711.5(a) requires projects funded by the Electric Program Investment Charge (EPIC) to result in ratepayer benefits. The California Public Utilities Commission, which established the EPIC in 2011, defines ratepayer benefits as greater reliability, lower costs, and increased safety (See CPUC "Phase 2" Decision 12-05-037 at page 19, May 24, 2012, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF).

⁴ California Public Resources Code, Section 25711.5(a) also requires EPIC-funded projects to lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state's statutory and energy goals.

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reliable APH energy storage technology that will address the need for longer term energy storage and discharge during grid outages and PSPS events, growth in peak load, evening ramp up, over-supply and curtailment issues, and the need for ancillary services.

Technological advancement and breakthroughs are summarized as follows:

- Energy storage at a capacity cost (\$381/kWh) that is comparable to lithium ion batteries (~\$470 per kWh based on \$1876/kW installation cost and 4-hour discharge for lithium);
- Discharge durations of 10 hours or longer;
- Ability to absorb renewables during non-summer season using super off-peak rates;
- Continuous power (50 kW) for critical facilities during PSPS events (100 hours using imported water);
- Scalable and rapid implementation due to the use of existing infrastructure and US-made equipment;
- Targeted development in Low-Income Communities and DACs;
- Distributed storage for transmission congestion relief, distribution reliability, and deferral of upgrades;
- Use of imported recharge water to reduce energy costs and provide recharge co-benefits; and
- No local safety risk due to waste disposal, thermal runaway, & leakage, especially to DACs and Low Income Communities.

When the IOU and investment community gain confidence in APH technology and its long-term performance then the market breakthrough is:

- IOUs will be able to solicit procurements for energy storage/discharge programs with incentives for agricultural and municipal pumpers that intend to mitigate the impacts by SGMA and PSPS events.

Agreement Objectives

The objectives of this Agreement are to:

Design and Construction of ground water facilities: Complete the design/build process for a 50 kW APH system to conduct a demonstration of the APH energy storage/discharge capabilities at the ground water facility.

Regeneration Wells Retrofit: Design and retrofit an existing well to enable the injection of water to enable energy storage and discharge for the well regeneration system.

Operations and Field Tests: Perform real-time field demonstration and monitor performance of APH system to determine costs, technical constraints, and define operating parameters. The testing results will be a basis to:

- Quantify the amount of energy needed to recharge the storage system “energy in” to discharge the target power of 50 kW.
- Confirm the energy storage capacity cost is comparable to lithium ion batteries;
- Confirm energy discharge durations of a minimum of 10 hours ;
- Determine the best time to use the minimum of 10 hours of energy discharge

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- Confirm ability to absorb renewables during non-summer months using super off-peak rates;
- Confirm ability to provide continuous energy discharge for critical facilities during PSPS events (100 hours using imported water);
- Confirm no local safety risk due to waste disposal, thermal runaway, & leakage, especially to Low-Income Communities and DACs;
- Determining clogging constraints using imported water; and
- Determine life cycle maintenance requirements.

Economics and Metrics: Determine the economics of the APH technology by assessing utility tariffs, interconnection requirements, and various operational and other metrics including:

- Cost of interconnection and controls, and utility tariff for NEM contract implications;
- Economics of operation, maintenance and replacement cost over a 30-year life cycle.
- Value of APH during PSPS event when the grid is down;
- Metrics for APH and grid integration; and
- Benefits of modular expansion of APH using less than 50 kW per module.

DAC and Low-Income Community Outreach: Identify and reach out to appropriate Low-Income Communities and DAC representatives to develop APH implementation roadmap focused on specific needs of Low-Income Communities and DACs especially vulnerable to preemptive power shutoffs. The focus is outreach with Low-Income Communities and DACs, identify critical facilities, and methods to provide continuous energy discharge to critical facilities.

- Deployment in DAC and Low-Income Communities: Estimate the commercialization potential of long duration storage particularly in DAC and Low-Income Communities that are ground zero for PSPS and SGMA impacts.

Project Benefits: Provide an assessment of resilience, reliability, cost savings, and safety benefits for the IOU ratepayers.

- Overall benefits and co-benefits of the project are summarized in **Table 1 and 2: Benefits and Co-Benefits** below. These benefits will be verified including: (1) reduced peak power cost, (2) power during PSPS event, (3) longer life cycle than lithium battery, and (4) rapid implementation especially within Low-Income Communities and DACs.

Table 1: APH Evaluation Metrics

Measurement	Metric	Calculation	Value	Initial Est.	EPIC* Benefit
1. Power	kW	Total rated (nameplate) kW of 1 existing well is 200 HP**, 35% Eff.	Load shifting, grid stability	150 kW (50 kW actual)	R, C

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Measurement	Metric	Calculation	Value	Initial Est.	EPIC* Benefit
2. Discharge Duration	Hours	Hours of water injection down well	Resilience, reliability, load shift, reduced peak power cost	10 hours	R, C
3. Energy Capacity	kWh	Actual power times the duration	Resilience, reliability, load shift, grid stability	500 kWh	R, C
4. % on-peak & off-peak power	%	Provide summer on-peak power, absorb winter super off-peak power.	Resilience, reliability, load shift, renewables absorption	100% discharge during peak hours	R, C, T
5. PSPS Event Discharge	Hours (100+)	Hours of discharge during 7-day PSPS event (imported water)	Resilience, reliability, service for locals	100 hours	R, S, T
6. Number of Cycles in a life	Cycles/ life	Discharge energy daily, track maintenance and life cycle	Reliability, cost savings, load shift	≥ 5 yrs.	R, C
7. Actual Capacity Cost	\$/kWh	Cost / (energy capacity) = \$ 0.5 M*** / 1313 kWh	Cost savings (uses existing well, cuts cost)	\$381/ kWh	C
8. Installation Time	Mos./ unit	Reduced installation using existing wells, US-made equip.	Accelerates mitigation of PSPS events for DACs	3-6 months****	R, T
9. Benefits Low Income, DAC	% kW in DACs	Rated kW of well retrofits in Low Income or DAC communities	Resilience, critical facility service, DAC jobs	100% in Low Income /DAC	R, T
10. Storage Density	kW/sq. mi.	Install APH wells across Central Valley, supports transmission and distribution, end users	Resilience, reliability, grid stability, defer transmission & distribution upgrades	19 kW/ sq. mi. (52.5 kW/2.8 sq. mi.) (WSWB is 1800 acres)	R, C
11. Water Source	Imported (Y/N)	Imported water for recharge avoids use of extraction energy	Resilience, cost savings, local services for LI and DACs	Yes	R, C, T

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Measurement	Metric	Calculation	Value	Initial Est.	EPIC* Benefit
12. Local health, safety, outreach	Local Risks? (Y/N)	Risks from waste disposal, thermal runaway, leakage (battery, natural gas), non-local materials & equip.	Local communities are safer, informed, no legacy risks, GHG reduction, uses local resources	No	C, S, T

* EPIC ratepayer benefits: greater reliability (R), lower costs (C), and increased safety (S). Also includes technological advancement (T).

** 1 well with 200 HP= 52.5 kW @ 35% efficiency.

*** Cost includes cost of reservoir and retrofitting one well.

**** Assuming electrical modifications take no longer than a month or two.

Table 2: Benefits and Co-Benefits

Benefits to Ratepayer	Measured Value	Metric Number in Measurement and Verification Plan (Table 2)
a. Reliability, resiliency, sustainability	<ul style="list-style-type: none"> • Power • Discharge duration • Capacity • Peak power • PSPS power • Storage density 	1 2 3 4 5 10
b. Impacts/benefits to end customer	<ul style="list-style-type: none"> • Reduced peak power cost • More peak power reduces cost • Power during PSPS event • Longer life cycle than lithium battery • Rapid implementation, especially for DACs 	2 4 5 6 8
c. GHG reductions	<ul style="list-style-type: none"> • Avoids use of natural gas turbines to meet peaks • Absorbs overgeneration during super off peak 	4 4
d. Value of savings	<ul style="list-style-type: none"> • Longer life cycle than lithium battery • Comparable capacity costs with lithium • Using imported water reduces energy cost 	6 7 11
e. Value of co-benefits	<ul style="list-style-type: none"> • Recharge water in over-drafted basins 	-

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Benefits to Ratepayer	Measured Value	Metric Number in Measurement and Verification Plan (Table 2)
	<ul style="list-style-type: none"> • Rapid installation to relieve PSPS events • Local jobs within DACs • US made and supplied equipment 	<p style="text-align: center;">8</p> <p style="text-align: center;">9</p> <p style="text-align: center;">8</p>
f. Cost savings vs. business as usual	<ul style="list-style-type: none"> • Uses existing, redundant infrastructure • Enables recharge in areas with Corcoran clay 	<p style="text-align: center;">7</p> <p style="text-align: center;">-</p>
g. Benefit value streams	<ul style="list-style-type: none"> • Generation • Transmission • Distribution • End Users 	<p style="text-align: center;">1,2,3,4,5</p> <p style="text-align: center;">10</p> <p style="text-align: center;">10</p> <p style="text-align: center;">2,4,5,6,8</p>

III. TASK 1 GENERAL PROJECT TASKS

PRODUCTS

Subtask 1.1 Products

The goal of this subtask is to establish the requirements for submitting project products (e.g., reports, summaries, plans, and presentation materials). Unless otherwise specified by the Commission Agreement Manager (CAM), the Recipient must deliver products as required below by the dates listed in the **Project Schedule (Part V)**. Products that require a draft version are indicated by marking “**(draft and final)**” after the product name in the “Products” section of the task/subtask. If “(draft and final)” does not appear after the product name, only a final version of the product is required. With respect to due dates within this Scope of Work, “**days**” means working days.

The Recipient shall:

For products that require a draft version, including the Final Report Outline and Final Report

- Submit all draft products to the CAM for review and comment in accordance with the Project Schedule (Part V). The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt, unless otherwise specified in the task/subtask for which the product is required.
- Consider incorporating all CAM comments into the final product. If the Recipient disagrees with any comment, provide a written response explaining why the comment was not incorporated into the final product.
- Submit the revised product and responses to comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period, or approves a request for additional time.

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For products that require a final version only

- Submit the product to the CAM for acceptance. The CAM may request minor revisions or explanations prior to acceptance.

For all products

- Submit all data and documents required as products in accordance with the following Instructions for Submitting Electronic Files and Developing Software:

- **Electronic File Format**

- Submit all data and documents required as products under this Agreement in an electronic file format that is fully editable and compatible with the Energy Commission's software and Microsoft (MS)-operating computing platforms, or with any other format approved by the CAM. Deliver an electronic copy of the full text of any Agreement data and documents in a format specified by the CAM, such as memory stick or CD-ROM.

The following describes the accepted formats for electronic data and documents provided to the Energy Commission as products under this Agreement, and establishes the software versions that will be required to review and approve all software products:

- Data sets will be in MS Access or MS Excel file format (version 2007 or later), or any other format approved by the CAM.
- Text documents will be in MS Word file format, version 2007 or later.
- Documents intended for public distribution will be in PDF file format.
- The Recipient must also provide the native Microsoft file format.
- Project management documents will be in Microsoft Project file format, version 2007 or later.

- **Software Application Development**

Use the following standard Application Architecture components in compatible versions for any software application development required by this Agreement (e.g., databases, models, modeling tools), unless the CAM approves other software applications such as open source programs:

- Microsoft ASP.NET framework (version 3.5 and up). Recommend 4.0.
- Microsoft Internet Information Services (IIS), (version 6 and up) Recommend 7.5.
- Visual Studio.NET (version 2008 and up). Recommend 2010.
- C# Programming Language with Presentation (UI), Business Object and Data Layers.
- SQL (Structured Query Language).
- Microsoft SQL Server 2008, Stored Procedures. Recommend 2008 R2.
- Microsoft SQL Reporting Services. Recommend 2008 R2.
- XML (external interfaces).

Any exceptions to the Electronic File Format requirements above must be approved in writing by the CAM. The CAM will consult with the Energy Commission's Information Technology Services Branch to determine whether the exceptions are allowable.

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MEETINGS

Subtask 1.2 Kick-off Meeting

The goal of this subtask is to establish the lines of communication and procedures for implementing this Agreement.

The Recipient shall:

- Attend a “Kick-off” meeting with the CAM, the Commission Agreement Officer (CAO), and any other Energy Commission staff relevant to the Agreement. The Recipient will bring its Project Manager and any other individuals designated by the CAM to this meeting. The administrative and technical aspects of the Agreement will be discussed at the meeting. Prior to the meeting, the CAM will provide an agenda to all potential meeting participants. The meeting may take place in person or by electronic conferencing (e.g., WebEx), with approval of the CAM.

The administrative portion of the meeting will include discussion of the following:

- Terms and conditions of the Agreement;
- Administrative products (subtask 1.1);
- CPR meetings (subtask 1.3);
- Match fund documentation (subtask 1.7);
- Permit documentation (subtask 1.8);
- Subcontracts (subtask 1.9); and
- Any other relevant topics.

The technical portion of the meeting will include discussion of the following:

- The CAM’s expectations for accomplishing tasks described in the Scope of Work;
 - An updated Project Schedule;
 - Technical products (subtask 1.1);
 - Progress reports and invoices (subtask 1.5);
 - Final Report (subtask 1.6);
 - Technical Advisory Committee meetings (subtasks 1.10 and 1.11); and
 - Any other relevant topics.
- Provide an *Updated Project Schedule, List of Match Funds, and List of Permits*, as needed to reflect any changes in the documents.

The CAM shall:

- Designate the date and location of the meeting.
- Send the Recipient a *Kick-off Meeting Agenda*.

Recipient Products:

- Updated Project Schedule *(if applicable)*
- Updated List of Match Funds *(if applicable)*
- Updated List of Permits *(if applicable)*

CAM Product:

- Kick-off Meeting Agenda

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Subtask 1.3 Critical Project Review (CPR) Meetings

The goal of this subtask is to determine if the project should continue to receive Energy Commission funding, and if so whether any modifications must be made to the tasks, products, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the Energy Commission and the Recipient. As determined by the CAM, discussions may include project status, challenges, successes, advisory group findings and recommendations, final report preparation, and progress on technical transfer and production readiness activities (if applicable). Participants will include the CAM and the Recipient, and may include the CAO and any other individuals selected by the CAM to provide support to the Energy Commission.

CPR meetings generally take place at key, predetermined points in the Agreement, as determined by the CAM and as shown in the Task List on page 1 of this Exhibit. However, the CAM may schedule additional CPR meetings as necessary. The budget will be reallocated to cover the additional costs borne by the Recipient, but the overall Agreement amount will not increase. CPR meetings generally take place at the Energy Commission, but they may take place at another location, or may be conducted via electronic conferencing (e.g., WebEx) as determined by the CAM.

The Recipient shall:

- Prepare a *CPR Report* for each CPR meeting that: (1) discusses the progress of the Agreement toward achieving its goals and objectives; and (2) includes recommendations and conclusions regarding continued work on the project.
- Submit the CPR Report along with any other *Task Products* that correspond to the technical task for which the CPR meeting is required (i.e., if a CPR meeting is required for Task 2, submit the Task 2 products along with the CPR Report).
- Attend the CPR meeting.
- Present the CPR Report and any other required information at each CPR meeting.

The CAM shall:

- Determine the location, date, and time of each CPR meeting with the Recipient's input.
- Send the Recipient a *CPR Agenda* and a *List of Expected CPR Participants* in advance of the CPR meeting. If applicable, the agenda will include a discussion of match funding and permits.
- Conduct and make a record of each CPR meeting. Provide the Recipient with a *Schedule for Providing a Progress Determination* on continuation of the project.
- Determine whether to continue the project, and if so whether modifications are needed to the tasks, schedule, products, or budget for the remainder of the Agreement. If the CAM concludes that satisfactory progress is not being made, this conclusion will be referred to the Deputy Director of the Energy Research and Development Division.
- Provide the Recipient with a *Progress Determination* on continuation of the project, in accordance with the schedule. The Progress Determination may include a requirement that the Recipient revise one or more products.

Recipient Products:

- CPR Report(s)
- Task Products (draft and/or final as specified in the task)

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CAM Products:

- CPR Agenda
- List of Expected CPR Participants
- Schedule for Providing a Progress Determination
- Progress Determination

Subtask 1.4 Final Meeting

The goal of this subtask is to complete the closeout of this Agreement.

The Recipient shall:

- Meet with Energy Commission staff to present project findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement. This meeting will be attended by the Recipient and CAM, at a minimum. The meeting may occur in person or by electronic conferencing (e.g., WebEx), with approval of the CAM.

The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be divided into two separate meetings at the CAM's discretion.

- The technical portion of the meeting will involve the presentation of findings, conclusions, and recommended next steps (if any) for the Agreement. The CAM will determine the appropriate meeting participants.
- The administrative portion of the meeting will involve a discussion with the CAM and the CAO of the following Agreement closeout items:
 - Disposition of any state-owned equipment.
 - Need to file a Uniform Commercial Code Financing Statement (Form UCC-1) regarding the Energy Commission's interest in patented technology.
 - The Energy Commission's request for specific "generated" data (not already provided in Agreement products).
 - Need to document the Recipient's disclosure of "subject inventions" developed under the Agreement.
 - "Surviving" Agreement provisions such as repayment provisions and confidential products.
 - Final invoicing and release of retention.
- Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Recipient and Commission staff during the meeting.
- Prepare a *Schedule for Completing Agreement Closeout Activities*.
- Provide *All Draft and Final Written Products* on a CD-ROM or USB memory stick, organized by the tasks in the Agreement.

Products:

- Final Meeting Agreement Summary (*if applicable*)
- Schedule for Completing Agreement Closeout Activities
- All Draft and Final Written Products

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

The goals of this subtask are to: (1) periodically verify that satisfactory and continued progress is made towards achieving the project objectives of this Agreement; and (2) ensure that invoices contain all required information and are submitted in the appropriate format.

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The Recipient shall:

- Submit a monthly *Progress Report* to the CAM. Each progress report must:
 - Summarize progress made on all Agreement activities as specified in the scope of work for the preceding month, including accomplishments, problems, milestones, products, schedule, fiscal status, and an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. See the Progress Report Format Attachment for the recommended specifications.
- Submit a monthly or quarterly *Invoice* that follows the instructions in the “Payment of Funds” section of the terms and conditions, including a financial report on Match Fund and in-state expenditures.

Products:

- Progress Reports
- Invoices

Subtask 1.6 Final Report

The goal of this subtask is to prepare a comprehensive Final Report that describes the original purpose, approach, results, and conclusions of the work performed under this Agreement. The CAM will review the Final Report, which will be due at least **two months** before the Agreement end date. When creating the Final Report Outline and the Final Report, the Recipient must use the Style Manual provided by the CAM.

Subtask 1.6.1 Final Report Outline

The Recipient shall:

- Prepare a *Final Report Outline* in accordance with the *Style Manual* provided by the CAM. (See *Task 1.1* for requirements for draft and final products.)

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

- Style Manual
- Comments on Draft Final Report Outline
- Acceptance of Final Report Outline

Subtask 1.6.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Style Manual, and Final Report Template provided by the CAM with the following considerations:
 - Ensure that the report includes the following items, in the following order:
 - Cover page (**required**)
 - Credits page on the reverse side of cover with legal disclaimer (**required**)
 - Acknowledgements page (optional)
 - Preface (**required**)

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- Abstract, keywords, and citation page (**required**)
- Table of Contents (**required**, followed by List of Figures and List of Tables, if needed)
- Executive summary (**required**)
- Body of the report (**required**)
- References (if applicable)
- Glossary/Acronyms (If more than 10 acronyms or abbreviations are used, it is required.)
- Bibliography (if applicable)
- Appendices (if applicable) (Create a separate volume if very large.)
- Attachments (if applicable)
- Ensure that the document is written in the third person.
- Ensure that the Executive Summary is understandable to the lay public.
 - Briefly summarize the completed work. Succinctly describe the project results and whether or not the project goals were accomplished.
 - Identify which specific ratepayers can benefit from the project results and how they can achieve the benefits.
 - If it's necessary to use a technical term in the Executive Summary, provide a brief definition or explanation when the technical term is first used.
- Follow the Style Guide format requirements for headings, figures/tables, citations, and acronyms/abbreviations.
- Ensure that the document omits subjective comments and opinions. However, recommendations in the conclusion of the report are allowed.
- Include a brief description of the project results in the Abstract.
- Submit a draft of the report to the CAM for review and comment. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt
- Consider incorporating all CAM comments into the Final Report. If the Recipient disagrees with any comment, provide a written response explaining why the comment was not incorporated into the final product
- Submit the revised Final Report and responses to comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period or approves a request for additional time.
- Submit one bound copy of the *Final Report* to the CAM along with *Written Responses to Comments on the Draft Final Report*.

Products:

- Final Report (draft and final)
- Written Responses to Comments on the Draft Final Report

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 Match Funds

The goal of this subtask is to ensure that the Recipient obtains any match funds planned for this Agreement and applies them to the Agreement during the Agreement term.

While the costs to obtain and document match funds are not reimbursable under this Agreement, the Recipient may spend match funds for this task. The Recipient may only spend match funds

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during the Agreement term, either concurrently or prior to the use of Energy Commission funds. Match funds must be identified in writing, and the Recipient must obtain any associated commitments before incurring any costs for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a *Match Funds Status Letter* that documents the match funds committed to this Agreement. If no match funds were part of the proposal that led to the Energy Commission awarding this Agreement and none have been identified at the time this Agreement starts, then state this in the letter.

If match funds were a part of the proposal that led to the Energy Commission awarding this Agreement, then provide in the letter:

- A list of the match funds that identifies:
 - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.
 - The amount of each in-kind contribution, a description of the contribution type (e.g., property, services), the documented market or book value, the source (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient must identify its owner and provide a contact name, address, telephone number, and the address where the property is located.
 - If different from the solicitation application, provide a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM of receipt of additional match funds.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

Products:

- Match Funds Status Letter
- Supplemental Match Funds Notification Letter *(if applicable)*
- Match Funds Reduction Notification Letter *(if applicable)*

Subtask 1.8 Permits

The goal of this subtask is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track. Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement, with the exception of costs incurred by University of California recipients. Permits must be identified and obtained before the Recipient may incur any costs related to the use of the permit(s) for which the Recipient will request reimbursement.

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The Recipient shall:

- Prepare a *Permit Status Letter* that documents the permits required to conduct this Agreement. If no permits are required at the start of this Agreement, then state this in the letter. If permits will be required during the course of the Agreement, provide in the letter:
 - A list of the permits that identifies: (1) the type of permit; and (2) the name, address, and telephone number of the permitting jurisdictions or lead agencies.
 - The schedule the Recipient will follow in applying for and obtaining the permits.

The list of permits and the schedule for obtaining them will be discussed at the Kick-off meeting (subtask 1.2), and a timetable for submitting the updated list, schedule, and copies of the permits will be developed. The impact on the project if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in progress reports and will be a topic at CPR meetings.

- If during the course of the Agreement additional permits become necessary, then provide the CAM with an *Updated List of Permits* (including the appropriate information on each permit) and an *Updated Schedule for Acquiring Permits*.
- Send the CAM a *Copy of Each Approved Permit*.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

Products:

- Permit Status Letter
- Updated List of Permits (*if applicable*)
- Updated Schedule for Acquiring Permits (*if applicable*)
- Copy of Each Approved Permit (*if applicable*)

Subtask 1.9 Subcontracts

The goals of this subtask are to: (1) procure subcontracts required to carry out the tasks under this Agreement; and (2) ensure that the subcontracts are consistent with the terms and conditions of this Agreement.

The Recipient shall:

- Manage and coordinate subcontractor activities in accordance with the requirements of this Agreement.
- Incorporate this Agreement by reference into each subcontract.
- Include any required Energy Commission flow-down provisions in each subcontract, in addition to a statement that the terms of this Agreement will prevail if they conflict with the subcontract terms.
- If required by the CAM, submit a draft of each *Subcontract* required to conduct the work under this Agreement.
- Submit a final copy of the executed subcontract.
- Notify and receive written approval from the CAM prior to adding any new subcontractors (see the discussion of subcontractor additions in the terms and conditions).

Products:

- Subcontracts (*draft if required by the CAM*)

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TECHNICAL ADVISORY COMMITTEE

Subtask 1.10 Technical Advisory Committee (TAC)

The goal of this subtask is to create an advisory committee for this Agreement. The TAC should be composed of diverse professionals. The composition will vary depending on interest, availability, and need. TAC members will serve at the CAM's discretion. The purpose of the TAC is to:

- Provide guidance in project direction. The guidance may include scope and methodologies, timing, and coordination with other projects. The guidance may be based on:
 - Technical area expertise;
 - Knowledge of market applications; or
 - Linkages between the agreement work and other past, present, or future projects (both public and private sectors) that TAC members are aware of in a particular area.
- Review products and provide recommendations for needed product adjustments, refinements, or enhancements.
- Evaluate the tangible benefits of the project to the state of California, and provide recommendations as needed to enhance the benefits.
- Provide recommendations regarding information dissemination, market pathways, or commercialization strategies relevant to the project products.

The TAC may be composed of qualified professionals spanning the following types of disciplines:

- Researchers knowledgeable about the project subject matter;
- Members of trades that will apply the results of the project (e.g., designers, engineers, architects, contractors, and trade representatives);
- Public interest market transformation implementers;
- Product developers relevant to the project;
- U.S. Department of Energy research managers, or experts from other federal or state agencies relevant to the project;
- Public interest environmental groups;
- Utility representatives;
- Air district staff; and
- Members of relevant technical society committees.

The Recipient shall:

- Prepare a *List of Potential TAC Members* that includes the names, companies, physical and electronic addresses, and phone numbers of potential members. The list shall include the expertise of each proposed TAC member and the value to the project. The list will be discussed at the Kick-off meeting, and a schedule for recruiting members and holding the first TAC meeting will be developed.
- Recruit TAC members. Ensure that each individual understands member obligations and the TAC meeting schedule developed in subtask 1.11.
- Prepare a *List of TAC Members* once all TAC members have committed to serving on the TAC.
- Submit *Documentation of TAC Member Commitment* (such as Letters of Acceptance) from each TAC member.

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Products:

- List of Potential TAC Members
- List of TAC Members
- Documentation of TAC Member Commitment

Subtask 1.11 TAC Meetings

The goal of this subtask is for the TAC to provide strategic guidance for the project by participating in regular meetings, which may be held via teleconference.

The Recipient shall:

- Discuss the TAC meeting schedule with the CAM at the Kick-off meeting. Determine the number and location of meetings (in-person and via teleconference) in consultation with the CAM.
- Prepare a *TAC Meeting Schedule* that will be presented to the TAC members during recruiting. Revise the schedule after the first TAC meeting to incorporate meeting comments.
- Prepare a *TAC Meeting Agenda* and *TAC Meeting Back-up Materials* for each TAC meeting.
- Organize and lead TAC meetings in accordance with the TAC Meeting Schedule. Changes to the schedule must be pre-approved in writing by the CAM.
- Prepare *TAC Meeting Summaries* that include any recommended resolutions of major TAC issues.

The TAC shall:

- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate on behalf of the project in its effort to build partnerships, governmental support and relationships with a national spectrum of influential leaders.
- Ask probing questions that insure a long-term perspective on decision-making and progress toward the project's strategic goals.

Products:

- TAC Meeting Schedule (draft and final)
- TAC Meeting Agendas (draft and final)
- TAC Meeting Back-up Materials
- TAC Meeting Summaries

II. TECHNICAL TASK

TASK 2 ECONOMICS AND METRICS

The goal of this task is to determine the economics and define metrics for a standalone 50kW APH system, particularly to identify the primary benefits the system will deliver to the recipients and Low-Income Communities and DACs. Benefits to be evaluated include increased reliability,

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resiliency and other services during times of power interruptions caused by weather, grid system failures or PSPS events.

The Recipient shall:

- Determine economics and metrics for 50 kW APH unit
 - Economics of operation, maintenance and replacement cost over a 30-year life cycle.
 - Determine value of APH during PSPS event when the grid is down.
 - Establish metrics for Low-Income Community and DAC PSPS mitigation measures; and
 - Develop applicability/evaluation template for APH for interested parties such as well owners and water agencies to use
 - Summarize findings from economic and metric analysis into *Technical Memo for Economics and Metrics*
- Develop *Template for Interconnection Agreement*,
 - Determine cost of interconnection and controls, and utility tariff for NEM contract implications.
 - Investigate separate interconnection for each well vs single point of interconnection for multiple wells.

Products:

- Technical Memo for Economics and Metrics
- Template for Interconnection Agreement

TASK 3 APH EXPERIENCE INCORPORATION

The goal of this task is to provide APH experience incorporation into the retrofit of the well to enable use of lessons learned from other well regeneration systems.

The Recipient shall:

- Create an *APH Technical Analysis Findings Report* with the APH experience and lessons learned from other regeneration systems incorporated into design, including 1 year of operations with interpretation of operational results during testing period.

Products:

- APH Technical Analysis Findings Report

TASK 4 DESIGN AND CONSTRUCTION OF FACILITIES

The goal of this task is to provide engineering design and construction services for the APH demonstration site. Demonstration shall be in an IOU electric service territory and at a site that is an IOU customer.

The Recipient shall:

- Determine best project delivery approach (such as Design/Bid/Build or Progressive Design/Build with GMP, etc.).
- Perform engineering design for a minimum of 50 kW APH system at the demonstration site for a minimum of 10-hour discharge period.

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- Provide construction management and inspection services, including record documents and adjustments made during construction.
- Develop and execute a *Commissioning Plan* with consultation from the CAM and the TAC
- Develop and execute an *Operations and System Test Plan* to cover 12 months with consultation from the CAM and the TAC.
- Summarize the results of Task 4 in a *Facility Certification, Start-Up, and Operational Commissioning Document*.
- Submit a *CPR Report #1* and participate in a CPR Meeting per subtask 1.3.

Products:

- Commissioning Plan (draft and final)
- Operations and System Test Plan (draft and final)
- Facility Certification, Start-up and Operational Commissioning Document
- CPR Report #1

TASK 5 COMMUNITY OUTREACH

The goal of this task is to reach out to appropriate Low-Income Community and DAC representatives to develop an APH implementation roadmap focused on critical facilities and ways to provide continuous power during PSPS.

The Recipient shall:

- Determine the number of Low-Income Community and DAC critical facilities in the selected region that would be impacted by PSPS events.
 - Develop ways to provide continuous power for individual hospitals, nursing homes, and charging facilities; and.
 - Hold field meetings with representative Low-Income Communities and DACs to assess their needs.
- Summarize findings from outreach in *Technical Memo Summarizing Results of Low-Income Community and Disadvantaged Community Outreach*.

Products:

- Technical Memo Summarizing Results of *Low-Income Community and Disadvantaged Community Outreach*

TASK 6 DEPLOYMENT IN DISADVANTAGED AND LOW-INCOME COMMUNITIES

The goal of this task is to estimate the commercialization potential of long duration storage particularly in DAC and Low-Income Communities in the selected region that are ground zero for PSPS and SGMA impacts.

The Recipient shall:

- Determine applicability of technology to be used on closed polyfluoroalkyl substances wells and statewide potential impact and include an application template and summarize findings into *APH Application/Evaluation Template*.
- Develop a *Technical Memo on Disadvantaged Community and Low-Income Community Deployment* that includes:

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- Determine amounts of recharge needed to comply with SGMA;
- Assess best ways to mitigate PSPS impacts on DACs and Low-Income Communities;
- Assess which wells are idle and how often;
- Assess which wells are redundant due to SGMA; and
- Determine how SGMA impacts statewide correlate with DACs and Low-Income Communities

Products:

- APH Application/Evaluation Template
- Technical Memo on Disadvantaged Community and Low-Income Community Deployment

TASK 7 OPERATIONS AND FIELD TESTS

The goal of this task is to conduct 1-year of operations to test and demonstrate the 50 kW APH system at the demonstration site.

The Recipient shall:

- Create and execute a *Measurement and Verification Plan* with consultation from the CAM on metrics. Metrics shall include, but not be limited to the following: value that longer-duration energy storage provides with specific information on increased resiliency, higher reliability, added cost savings from peak load reductions, load shifting, providing increased services to the electric grid during times of grid stability challenges; benefits to Low-Income Communities and DACs; value of longer-duration storage when compared to the normal 2-4 hours of storage current systems provide.
- Measurement and Verification Plan will include the collection and measurement and verification (M&V) of data on the installation over the one year demonstration period. The duration of data collection may be reduced with prior CAM written approval. M&V includes plots of charge/discharge power levels, storage efficiencies, and ambient temperatures, as a function of time.
- Conduct one-year operations to test and demonstrate the APH system and create a *One-Year Operations Report* that includes, but is not limited to, the following details:
 - Provision of engineering and design services to manage the operation, maintenance and repair of the 50 kW APH system for 12 months during the demonstration period;
 - Provision of management, all labor and materials to operate, maintain and repair the 50 kW APH system for 12 months during the demonstration period;
 - Implementation of operations and testing plan for 12 months;
 - Operation for 4 summer months for 5 hours each weekday during evening ramp up to shift peak load;
 - Operation periodically during the 8 months of winter and spring to absorb surplus renewables and to establish well plugging constraints;
 - Operation of APH system to demonstrate for a minimum of 10-hour discharge periods;
 - Operation of APH system to demonstrate PSPS power for 100 hours;
 - Results of execution of the Measurement and Verification Plan;
 - Determination of clogging constraints using imported water; and
 - Development of life cycle maintenance requirements.
- Submit a *CPR Report #2* and participate in a CPR Meeting per subtask 1.3.

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Products:

- Measurement and Verification Plan
- One-Year Operations Report (draft and final)
- CPR Report #2

TASK 8 PROJECT BENEFITS

The goal of this task is to report the benefits resulting from this project.

The Recipient shall:

- Complete three Project Benefits Questionnaires that correspond to three main intervals in the Agreement: (1) *Kick-off Meeting Benefits Questionnaire*; (2) *Mid-term Benefits Questionnaire*; and (3) *Final Meeting Benefits Questionnaire*.
- Provide all key assumptions used to estimate projected benefits, including targeted market sector (e.g., population and geographic location), projected market penetration, baseline and projected energy use and cost, operating conditions, and emission reduction calculations. Examples of information that may be requested in the questionnaires include:
 - For Product Development Projects and Project Demonstrations:
 - Published documents, including date, title, and periodical name.
 - Estimated or actual energy and cost savings, and estimated statewide energy savings once market potential has been realized. Identify all assumptions used in the estimates.
 - Greenhouse gas and criteria emissions reductions.
 - Other non-energy benefits such as reliability, public safety, lower operational cost, environmental improvement, indoor environmental quality, and societal benefits.
 - Data on potential job creation, market potential, economic development, and increased state revenue as a result of the project.
 - A discussion of project product downloads from websites, and publications in technical journals.
 - A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
 - Additional Information for Product Development Projects:
 - ✓ Outcome of product development efforts, such copyrights and license agreements.
 - ✓ Units sold or projected to be sold in California and outside of California.
 - ✓ Total annual sales or projected annual sales (in dollars) of products developed under the Agreement.
 - ✓ Investment dollars/follow-on private funding as a result of Energy Commission funding.
 - ✓ Patent numbers and applications, along with dates and brief descriptions.
 - Additional Information for Product Demonstrations:
 - ✓ Outcome of demonstrations and status of technology.
 - ✓ Number of similar installations.
 - ✓ Jobs created/retained as a result of the Agreement.
 - For Information/Tools and Other Research Studies:
 - Outcome of project.

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- Published documents, including date, title, and periodical name.
 - A discussion of policy development. State if the project has been cited in government policy publications or technical journals, or has been used to inform regulatory bodies.
 - The number of website downloads.
 - An estimate of how the project information has affected energy use and cost, or have resulted in other non-energy benefits.
 - An estimate of energy and non-energy benefits.
 - Data on potential job creation, market potential, economic development, and increased state revenue as a result of project.
 - A discussion of project product downloads from websites, and publications in technical journals.
 - A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
- Respond to CAM questions regarding responses to the questionnaires.

The Energy Commission may send the Recipient similar questionnaires after the Agreement term ends. Responses to these questionnaires will be voluntary.

Products:

- Kick-off Meeting Benefits Questionnaire
- Mid-term Benefits Questionnaire
- Final Meeting Benefits Questionnaire

TASK 9 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to develop a plan to make the knowledge gained, experimental results, and lessons learned available to the public and key decision makers.

The Recipient shall:

- Prepare an *Initial Fact Sheet* at start of the project that describes the project. Use the format provided by the CAM.
- Prepare a *Final Project Fact Sheet* at the project's conclusion that discusses results. Use the format provided by the CAM.
- Prepare a *Technology/Knowledge Transfer Plan* that includes:
 - An explanation of how the knowledge gained from the project will be made available to the public, including the targeted market sector and potential outreach to end users, utilities, regulatory agencies, and others.
 - A description of the intended use(s) for and users of the project results.
 - Published documents, including date, title, and periodical name.
 - Copies of documents, fact sheets, journal articles, press releases, and other documents prepared for public dissemination. These documents must include the Legal Notice required in the terms and conditions. Indicate where and when the documents were disseminated.
 - A discussion of policy development. State if project has been or will be cited in government policy publications, or used to inform regulatory bodies.
 - The number of website downloads or public requests for project results.
 - Additional areas as determined by the CAM.

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- Conduct technology transfer activities in accordance with the Technology/Knowledge Transfer Plan. These activities will be reported in the Progress Reports.
- When directed by the CAM, develop *Presentation Materials* for an Energy Commission-sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California Energy Commission.
- Provide at least (6) six *High Quality Digital Photographs* (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.
- Prepare a *Technology/Knowledge Transfer Report* on technology transfer activities conducted during the project.

Products:

- Initial Fact Sheet (draft and final)
- Final Project Fact Sheet (draft and final)
- Presentation Materials (draft and final)
- High Quality Digital Photographs
- Technology/Knowledge Transfer Plan (draft and final)
- Technology/Knowledge Transfer Report (draft and final)

III. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION AGREEMENTS

**Exhibit A-1 - Scope of Work
Antelope Valley Water Storage, LLC
V. PROJECT SCHEDULE**

Agreement Term: 7-18-2020 to 3-31-2024

Task/ Subtask #	Task/Subtask Name	Meeting Name	Product(s)	Due Date
1	General Project Tasks			
1.1	Products			
1.2	Kick-off Meeting	Kick-off Meeting		7-17-2020
			Updated Project Schedule (<i>if applicable</i>)	7 days after determination of the need to update the documents
			Updated List of Match Funds (<i>if applicable</i>)	7 days after determination of the need to update the documents
			Updated List of Permits (<i>if applicable</i>)	7 days after determination of the need to update the documents
			CAM Product	
			Kick-off Meeting Agenda	7 days prior to the kick-off meeting
1.3	CPR Meeting	CPR Meeting #1		12-1-2021
		CPR Meeting #2 (<i>to be deleted by the CAM if inapplicable</i>)		1-11-2023
			CPR Report	15 days prior to the CPR meeting
			Task Product(s)	15 days prior to the CPR meeting
			CAM Products	
			CPR Agenda	5 days prior to the CPR meeting
			List of Expected CPR Participants	5 days prior to the CPR meeting
			Schedule for Providing a Progress Determination	15 days after CPR meeting
			Progress Determination	As indicated in the Schedule for Providing a Progress Determination
1.4	Final Meeting	Final Meeting		11-21-2023
			Final Meeting Agreement Summary (<i>if applicable</i>)	7 days after the final meeting
			Schedule for Completing Agreement Closeout Activities	7 days after the final meeting
			All Draft and Final Written Products	7 days after the final meeting
1.5	Progress Reports and Invoices		Progress Reports	10 days after the first of each month
			Invoices	10 days after the first of each month or quarter
1.6	Final Report			
1.6.1	Final Report Outline		Draft Final Report Outline	5-23-2023
			Final Report Outline	As determined by the CAM
			CAM Product (s)	
			Style Manual	At least 2 months prior to the final report outline due date
			Comments on Draft Final Report Outline	10 days after receipt of the Draft Final Report Outline
			Approval of Final Report Outline	10 days after receipt of the Final Report Outline
1.6.2	Final Report		Draft Final Report	7-18-2023
			Final Report	9-20-2023
			Written Responses to Comments on the Draft Final Report	8-22-2023
			CAM Products	
			Comments on Draft Final Report	15 days after receipt of the Draft Final Report

ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION AGREEMENTS

**Exhibit A-1 - Scope of Work
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V. PROJECT SCHEDULE**

Task/ Subtask #	Task/Subtask Name	Meeting Name	Product(s)	Due Date
1.7	Match Funds		Match Funds Status Letter	2 days prior to the kick-off meeting
			Supplemental Match Funds Notification Letter <i>(if applicable)</i>	10 days after receipt of additional match funds
			Match Funds Reduction Notification Letter <i>(if applicable)</i>	10 days after any reduction of match funds
1.8	Permits		Permit Status Letter	2 days prior to the kick-off meeting
			Updated List of Permits <i>(if applicable)</i>	10 days after determination of the need for a new permit
			Updated Schedule for Acquiring Permits <i>(if applicable)</i>	10 days after determination of the need for a new permit
			Copy of Each Approved Permit <i>(if applicable)</i>	7 days after receipt of each permit
1.9	Subcontracts		Draft Subcontracts <i>(if required by the CAM)</i>	As determined by the CAM
			Final Subcontracts	As determined by the CAM
1.10	Technical Advisory Committee (TAC)		List of Potential TAC Members	2 days prior to the kick-off meeting
			List of TAC Members	7 days after finalization of the TAC
			Documentation of TAC Member Commitment	7 days after receipt of the documentation
1.11	TAC Meetings	TAC Meeting #1		9-9-2020
		TAC Meeting #2		10-27-2021
		TAC Meeting #3		12-6-2022
		TAC Meeting #4		8-25-2023
			Draft TAC Meeting Schedule	20 days after the kickoff meeting
			Final TAC Meeting Schedule	10 days after the first TAC meeting
			Draft TAC Meeting Agendas	20 days prior to each TAC meeting
			TAC Meeting Back-up Materials	21 days prior to each TAC meeting
			Final TAC Meeting Agenda	7 days prior to each TAC meeting
	TAC Meeting Summaries	10 days after each TAC meeting		

ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION AGREEMENTS

**Exhibit A-1 - Scope of Work
Antelope Valley Water Storage, LLC
V. PROJECT SCHEDULE**

Task/ Subtask #	Task/Subtask Name	Meeting Name	Product(s)	Due Date
Technical Tasks				
2	Economics & Metrics		Technical Memo for Economics and Metrics	2-25-2021
			Template for Interconnection Agreement	3-25-2021
3	APH Experience Incorporation		APH Technical Analysis Findings Report	4-6-2021
4	Design and Construction of Facilities		Draft Commission Plan	6-1-2021
			Final Commission Plan	7-14-2021
			Draft Operations and System Test Plan	9-8-2021
			Final Operations and System Test Plan	11-4-2021
			CPR Report #1	15 Days Prior to the CPR meeting
			Facility Certification, Start-Up, and Operational Commissioning Document	7-28-2022
5	Disadvantaged Communities (DAC) Outreach		Technical Memo Summarizing Results of DAC Outreach	5-25-2022
6	Deployment in Disadvantaged and Low-Income Communities		APH Application/Evaluation Template	7-29-2021
			Technical Memo on Disadvantaged Community and Low-Income Community Deployment	5-25-2022
7	Operations and Field Tests		Measurement and Verification Plan	5-25-2022
			CPR Report #2	15 Days Prior to the CPR meeting
			Draft One-Year Operations Plan	4-15-2023
			Final One-Year Operations Plan	7-13-2023
8	Project Benefits		Kick-off Meeting Benefits Questionnaire	7-24-2020
			Mid-term Benefits Questionnaire	7-28-2022
			Final Meeting Benefits Questionnaire	7-18-2023
9	Technology/Knowledge Transfer Activities		Draft Initial Fact Sheet	10-29-2020
			Final Initial Fact Sheet	12-3-2020
			Draft Final Project Fact Sheet	7-11-2023
			Final Project Fact Sheet	8-15-2023
			Draft Presentation Materials	8-10-2023
			Final Presentation Materials	9-14-2023
			High Quality Digital Photographs	11-2-2023
			Draft Technology/Knowledge Transfer Plan	8-17-2023
			Final Technology/Knowledge Transfer Plan	9-21-2023
			Draft Technology/Knowledge Transfer Report	10-26-2023
			Final Technology/Knowledge Transfer Report	11-30-2023

**EXHIBIT A, ATTACHMENT A-2
CONTENT AND FORMAT OF PROGRESS REPORTS**

**PROGRESS REPORT for
Antelope Valley Water Storage, LLC, EPC-19-058
Month, Year**

Recipient Project Manager:
Commission Agreement Manager: Joseph Sit

What we planned to accomplish this period

[This is taken directly from the section on “What we expect to accomplish during the next period” from the last progress report.]

What we actually accomplished this period

[Concise description of major project activities and accomplishments. Include ratepayer benefits achieved to date]

How we are doing compared to our plan

[Explain the differences, if any, between the planned and the actual accomplishments. Describe what needs to be done, if anything, to get back on track.]

Significant problems or changes

[Describe any significant technical or fiscal problems. Request approval for significant changes in work scope, revised milestone due dates, changes in key personnel assigned to the project, or reallocation of budget cost categories. If none, include the following statement: “Progress and expenditures will result in project being completed on time and within budget.”]

What we expect to accomplish during the next period

[Concise description of major activities and accomplishments expected. This will be transferred to the next progress report]

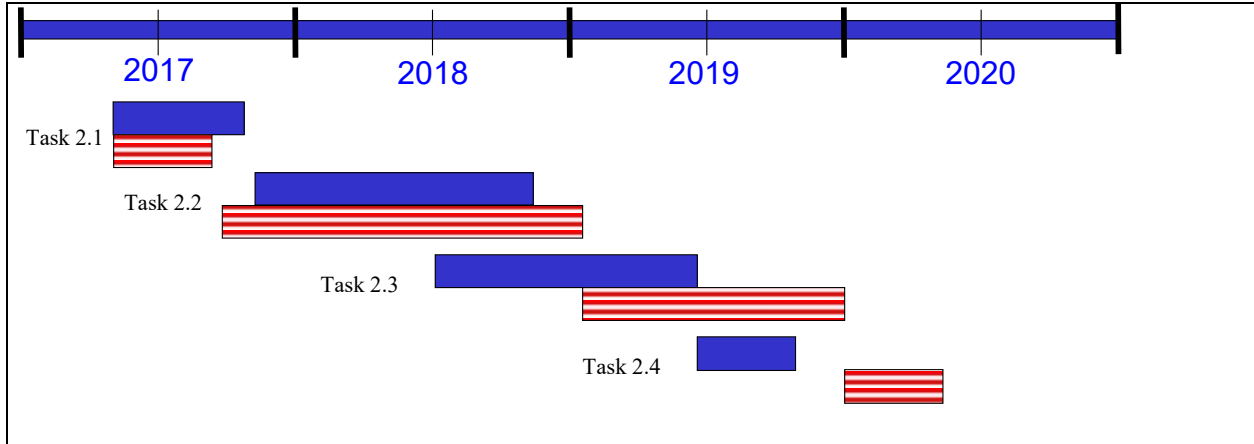
Status of Milestones and Products:

[This should be the complete list as contained in the revised scope of work and Exhibit B. Highlight differences between actual and planned. This can be an excel attachment from the Exhibit A Project Schedule with additional “Actual” and “Status (%)” columns.]

**EXHIBIT A, ATTACHMENT A-2
CONTENT AND FORMAT OF PROGRESS REPORTS**

Description	Start Date		Due Date		Status (%)
	Planned	Actual	Planned	Actual	
Identify top 3 assessment candidates	4/15/17	4/15/17	5/1/17	5/1/17	On time 100%
Develop test plan	4/20/17	4/10/17	7/7/17	6/10/17	Ahead 100%
Analyze experimental data	5/1/17	6/1/17	1/1/18	2/1/18	Delayed 25%

EXHIBIT A, ATTACHMENT A-2 CONTENT AND FORMAT OF PROGRESS REPORTS



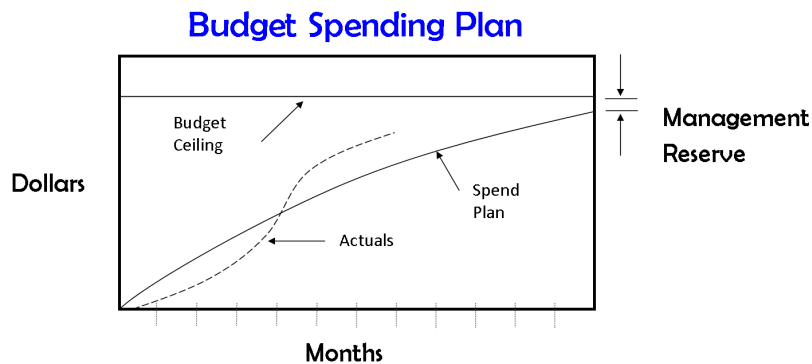
Overall schedule for the project.

[Planned is solid blue, actual is red striped. This work flow diagram needs to correlate with the schedule in Exhibit B. This example has been prepared as a Word Picture, but a comparable Excel diagram, Microsoft Project schedule, or Gantt chart is acceptable.]

Overview of Fiscal Status: (See invoices for detail.)

[It is useful to track the rate of expenditure of project funds. The most useful way to do this is to compare the actual expenditure rate with the planned expenditure rate. You get the planned rate at the beginning of the project, so it becomes a baseline. If you change course at a critical project review, you should show the original and the modified baseline, and then track against the new one.]

[Report on the status of actual expenditures and progress in relation to the original Spend Plan.]



[Report estimates of Commission and match expenditures at a task level including: total budget amount, estimated amount spent to date, and estimated amount spent since last progress report. If making changes to the planned budget totals since the last progress report, please use the

EXHIBIT A, ATTACHMENT A-2 CONTENT AND FORMAT OF PROGRESS REPORTS

strikethrough format on the old amount and add the new amount using the **bold and underline** format.]

Overview of Budget Expenditures:

The Energy Commission Contract Manager may request the expenditures be provided in Table 1. Input the proposed budget from the project narrative in the second column. CAM may modify table as needed. Please note that table is an estimate and only used to help track progress of tasks.

Table 1: Task breakdown Commission and match expenses to date
Covering Period From Start Date: _____ To End Date: _____

Task	Estimated Commission Expenses to Date	Total Anticipated Commission Budget	% Complete
1.0 [insert task title]			
2.0 [insert task title]			
3.0 [insert task title]			
4.0 [insert task title]			
5.0 [insert task title]			
6.0 [insert task title]			
7.0 [insert task title]			
8.0 [insert task title]			

Photographs:

[Include photographs where appropriate to document progress. The photos shall be shot with high quality digital photos.]

Evidence of Progress:

[Attach evidence of the progress being made (e.g., test data, product mock-ups, field site descriptions, preliminary analyses, meeting minutes) to the progress reports to allow the Commission Agreement Manager to review progress and gauge the quality of research results.]

[The progress report on each project should be approximately 1-2 pages long (plus photographs) and take about 1 hour to prepare for each reporting period.]

EXHIBIT B

Category Budget

Name of Organization	Antelope Valley Water Storage, LLC
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- Contractor/Recipient Subcontractor
 Small Business Micro Business Disabled Veteran Business Enterprise (DVBE)

Cost Category	Energy Commission Reimbursable Share	Match Share	Total
Direct Labor	\$ 149,985	\$ -	\$ 149,985
Fringe Benefits	\$ 34,052	\$ -	\$ 34,052
Total Labor	\$ 184,037	\$ -	\$ 184,037
Travel	\$ 3,561	\$ -	\$ 3,561
Equipment	\$ -	\$ -	\$ -
Materials/Miscellaneous	\$ 100,000	\$ 50,000	\$ 150,000
Subcontractors	\$ 1,700,000	\$ 450,000	\$ 2,150,000
Total Other Direct Costs	\$ 1,803,561	\$ 500,000	\$ 2,303,561
Indirect Costs	\$ 12,402	\$ -	\$ 12,402
Profit (not allowed for grant recipients)	\$ -	\$ -	\$ -
Total Indirect and Profit	\$ 12,402	\$ -	\$ 12,402
Grand Totals	\$ 2,000,000	\$ 500,000	\$ 2,500,000
Amount of funds to be Spent in California**	\$ 1,497,000		
Percentage of Funds to be spent in California	0.75		

EXHIBIT B

Direct Labor (Unloaded)

Antelope Valley Water Storage, LLC

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours		Match Share	Total
Mark Beuhler	General Manager, Willow Springs Water Bank	\$ 150.00	290	\$ 43,500	\$ -	\$ 43,500
Zachary Ahinga	Program Manager, Willow Springs Water Bank	\$ 100.00	465	\$ 46,500	\$ -	\$ 46,500
Tommy Ta	Assistant Environmental Scientist	\$ 45.00	1,333	\$ 59,985	\$ -	\$ 59,985
					\$ -	\$ -
Hourly Direct Labor Totals				\$ 149,985	\$ -	\$ 149,985

Monthly Salary Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per month)	# of Months	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
		\$ -		\$ -	\$ -	\$ -
Monthly Direct Labor Totals				\$ -	\$ -	\$ -

	Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals	\$ 149,985	\$ -	\$ 149,985

EXHIBIT B

Fringe Benefits

Antelope Valley Water Storage, LLC

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
General Manager, Willow Springs Water Bank; Base: Direct Labor Costs	17.00%	\$ 43,500	\$ 7,370		\$ 7,370
Program Manager, Willow Springs Water Bank; Base:Direct Labor Costs	20.00%	\$ 46,500	\$ 9,300	\$ -	\$ 9,300
Assistant Environmental Scientist; Base: Direct Labor Costs	29.00%	\$ 59,985	\$ 17,382	\$ -	\$ 17,382
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ 149,985	\$ 34,052	\$ -	\$ 34,052

EXHIBIT B

Travel

Antelope Valley Water Storage, LLC

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
1	Mark Beuhler	Glendale, CA to Sacramento, CA and Return	Kick-off Meeting	\$ 456	\$ -	\$ 456
1	Mark Beuhler	Glendale, CA to Sacramento, CA and Returnx2	Critical Project Review (CPR) Meetings	\$ 912	\$ -	\$ 912
1	Mark Beuhler	Glendale, CA to Sacramento, CA and Return	Final Meeting	\$ 456	\$ -	\$ 456
2 & 4	Mark Beuhler	TBD	Meetings with Subcontractors for Coordination/ field site visits	\$ 863	\$ -	\$ 863
5 thru 9	Mark Beuhler	TBD	Team meetings at locations in California to be determined	\$ 874	\$ -	\$ 874
				\$ -	\$ -	\$ -
Total:				\$ 3,561	\$ -	\$ 3,561

EXHIBIT B

Equipment

Antelope Valley Water Storage, LLC

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Materials & Miscellaneous

Antelope Valley Water Storage, LLC

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
4	Purchase imported water	Imported water used for well injection to generate power during demonstration and testing.	varies	varies	\$ 20,000	\$ -	\$ 20,000
4	Purchase pipe and fittings, small valves, tools and miscellaneous materials.	To perform maintenance and repair of well equipment and piping during demonstraton period.	varies	varies	\$ 80,000	\$ -	\$ 80,000
2	Permit Fees	Payment of Permit Fees	varies	varies		\$ 50,000	\$ 50,000
				\$ -	\$ -	\$ -	\$ -
Total:					\$ 100,000	\$ 50,000	\$ 150,000

EXHIBIT B

Subcontracts

Antelope Valley Water Storage, LLC

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/SB/MB/None	Energy Commission Funds	Match Share	Total
2 & 4	HDR Engineering, Inc.	<p>Provide Project Administration, Engineering Design and Construction Services for APH System at WSWB:</p> <p>Task 2.1:</p> <ul style="list-style-type: none"> • Manage this project task and participate in project meetings thru project duration; • Perform engineering design for 50 kW APH system; and • Provide construction management and inspection services to construct the 50 kW system facilities. Provide professional services to conduct 1 year of operations to determine technical constraints and define operating parameters for the 50 kW APH system. <p>Task 4:</p> <ul style="list-style-type: none"> • Provide engineering and design services to manage the operation, maintenance and repair of the 50 kW APH system for 12 months during the demonstration period; • Provide management, labor and materials to operate, maintain and repair the 50 kW APH system for 12 months during the demonstration period; and • Develop an operations and test plan for 12 months and implement the operations and test plan. 	None	\$ 700,000	\$ 300,000	\$ 1,000,000
2	TBD Design Build Aquifer Pump Hydro	<p>Provide Design Build Project Delivery Services to Construct the 50kW APH System at WSWB:</p> <ul style="list-style-type: none"> • Provide labor, materials and equipment to manage, design and construct the complete 50 kW system facilities. 	TBD	\$ 300,000	\$ 150,000	\$ 450,000
3	3RValve	<p>Provide consulting services for Well Regeneration Systems for design and construction to retrofit wells to install regeneration systems during the 1 year operations testing period and consult on interpretation of operational results during testing period.</p>	None	\$ 150,000		\$ 150,000

EXHIBIT B

4	Rosamond Community Services District	Provide professional services to conduct 1 year of field operations and testing to demonstrate the 50 kW APH system <ul style="list-style-type: none"> • Provide management, field labor and materials to operate, maintain and repair the 50 kW APH system for 12 months during the demonstration period; and • Assist in developing an operations and test plan for 12 months and implement the operations and test plan. 	None	\$ 70,000		\$ 70,000
5 & 7	Water and Energy Consulting Inc	Task 5: Evaluate economics of the proposed APH system by assessing utility tariffs, interconnection requirements, and various operational and other metrics. Task 7: Estimate the commercialization potential of long duration storage particularly in DAC and low-income communities in Kern County that are ground zero for PSPS and SGMA impacts.	None	\$ 400,000		\$ 400,000
6	Kern County	Identify and reach out to appropriate DAC representatives to develop APH implementation roadmap focused on specific needs of low-income and DAC communities.	None	\$ 80,000		\$ 80,000
1 & 9	TBD	Assist in managing, recruiting, establish procedures, correspondence and meeting/decision records for Technical Advisory Committee; and assist with Technology transfer. (The hourly rate subcontractor rate is estimated not to exceed \$250.00/hour; and funding will be allocated from WSWB Direct Labor if subcontractor is retained.)	None	TBD	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ 1,700,000	\$ 450,000	\$ 2,150,000

EXHIBIT B

Indirect Costs and Profit

Antelope Valley Water Storage, LLC

Indirect Cost(s)

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount		Match Share	Total
Indirect Overhead	8.28%	Direct Labor	\$ 149,985	\$ 12,402	\$ -	\$ 12,402
	0.00%		\$ -	\$ -	\$ -	\$ -
Total:				\$ 12,402	\$ -	\$ 12,402

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
0.00%		\$ -	\$ -	\$ -	\$ -
Total:			\$ -	\$ -	\$ -

EXHIBIT B

Category Budget

Name of Organization	HDR Engineering, Inc.
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- Contractor/Recipient Subcontractor
 Small Business Micro Business Disabled Veteran Business Enterprise

Cost Category	Energy Commission Reimbursable Share	Match Share	Total
Direct Labor	\$ 208,231	\$ 99,783	\$ 308,014
Fringe Benefits	\$ 99,784	\$ 47,816	\$ 147,600
Total Labor	\$ 308,015	\$ 147,599	\$ 455,614
Travel	\$ 30,855	\$ 5,000	\$ 35,855
Equipment	\$ -	\$ -	\$ -
Materials/Miscellaneous	\$ 1,350	\$ -	\$ 1,350
Subcontractors	\$ 50,000	\$ -	\$ 50,000
Total Other Direct Costs	\$ 82,205	\$ 5,000	\$ 87,205
Indirect Costs	\$ 250,690	\$ 120,128	\$ 370,818
Profit (not allowed for grant recipients)	\$ 59,091	\$ 27,273	\$ 86,364
Total Indirect and Profit	\$ 309,781	\$ 147,401	\$ 457,182
Grand Totals	\$ 700,000	\$ 300,000	\$ 1,000,000
Amount of funds to be Spent in California**	\$ 700,000		
Percentage of Funds to be spent in California	100%		

EXHIBIT B

Direct Labor (Unloaded)

HDR Engineering, Inc.

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours	Energy Commission Funds	Match Share	Total
Aaron Meilleur	Project Principal	135.53	10	\$ 1,355	\$ -	\$ 1,355
Albert Rodriguez	Quality Coordinator	127.06	23	\$ 2,922	\$ -	\$ 2,922
Steve Friedman	Project Manager	118.59	217	\$ 25,733	\$ -	\$ 25,733
TBD	Task Lead	101.65	303	\$ 30,799	\$ -	\$ 30,799
TBD	Senior Project Engineer I	93.18	18	\$ 1,677	\$ -	\$ 1,677
TBD	Senior Project Engineer II	84.71	80	\$ 6,776	\$ -	\$ 6,776
TBD	Project Engineer I	76.23	48	\$ 3,659	\$ -	\$ 3,659
TBD	Project Engineer II	67.76	111	\$ 7,522	\$ -	\$ 7,522
TBD	Staff Engineer I	59.29	38	\$ 2,253	\$ -	\$ 2,253
TBD	Staff Engineer II	50.82	450	\$ 22,870	\$ -	\$ 22,870
TBD	Technician I	42.35	1,523	\$ 64,503	\$ -	\$ 64,503
TBD	Technician II	33.88	104	\$ 3,524	\$ -	\$ 3,524
TBD	CAD Manager	67.76	161	\$ 10,910	\$ -	\$ 10,910
TBD	CAD Technician	50.82	84	\$ 4,269	\$ -	\$ 4,269
TBD	Senior Accountant	67.76	33	\$ 2,236	\$ -	\$ 2,236
TBD	Project Accountant	50.82	73	\$ 3,710	\$ -	\$ 3,710
TBD	Project Coordinator	42.35	319	\$ 13,510		\$ 13,510
Match Share	The match share will be allocated to the Job Titles above in the monthly billings to the CEC.				\$ 99,783.00	\$ 99,783
Hourly Direct Labor Totals				\$ 208,231	\$ 99,783	\$ 308,014

	Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals	\$ 208,231	\$ 99,783	\$ 308,014

EXHIBIT B

Fringe Benefits

HDR Engineering, Inc.

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
All Classifications	47.92%	\$ 308,014	\$ 99,784.30	\$ -	\$ 99,784
Match Share	0.00%	\$ -	\$ -	\$ 47,816	\$ 47,816
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ 308,014	\$ 99,784	\$ 47,816	\$ 147,600

EXHIBIT B

Travel

HDR Engineering, Inc.

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
1	Project Manager	Irvine CA. to Rosamond CA. (Willow Springs) (12 round trips)	Meetings with Recipient	\$ 1,584	\$ -	\$ 1,584
1	Task Lead	San Diego CA. to Rosamond CA. (Willow Springs) (12 round trips)	Meetings with Recipient	\$ 2,880	\$ -	\$ 2,880
1	Task Lead	Austin TX. to Burbank CA. Airports (2 round trips) and drive to Rosamond Ca. (Willow Springs)	Meetings with Recipient		\$ 1,000	\$ 1,000
2	Task Lead	Charlotte NC. to Burbank CA. Airports (2 round trips) and drive to Rosamond CA. (Willow Springs)	Site Visits		\$ 1,500	\$ 1,500
2	Project Manager	Irvine CA. to Rosamond CA. (Willow Springs) (12 round trips)	Site Visits	\$ 1,573	\$ -	\$ 1,573
2	Task Lead	San Diego CA. to Rosamond CA. (Willow Springs) (12 round trips)	Site Visits	\$ 2,880	\$ -	\$ 2,880
2	Task Lead	Austin TX. to Burbank CA. Airports (2 round trips) and drive to Rosamond CA. (Willow Springs)	Site Visits		\$ 1,000	\$ 1,000
2	Task Lead	Charlotte NC. to Burbank CA. Airports (2 round trips) and drive to Rosamond CA. (Willow Springs)	Site Visits		\$ 1,500	\$ 1,500
2	Task Lead	Irvine CA. to Rosamond CA. (Willow Springs) (3 round trips)	Construction Administration	\$ 396	\$ -	\$ 396
2	Project Manager	Irvine CA. to Rosamond CA. (Willow Springs) (3 round trips)	Construction Administration	\$ 396	\$ -	\$ 396
2	Project Engineer II	Irvine CA. to Rosamond CA. (Willow Springs) (2 round trips)	Construction Administration	\$ 264	\$ -	\$ 264
2	Technician I	Irvine CA. to Rosamond CA. (Willow Springs) (13 round trips)	Construction Observation	\$ 1,716	\$ -	\$ 1,716
4	Task Lead	Sacramento CA. to Burbank CA. Airports (2 round trips) and drive to Rosamond CA. (Willow Springs)	Onsite Operations meeting	\$ 700	\$ -	\$ 700
4	Technician I	Irvine CA. to Rosamond CA. (Willow Springs) (13 round trips)	Onsite Operations meeting	\$ 1,716	\$ -	\$ 1,716
2	Task Lead, Project Manager, Project Engineer II, Technician I	Driving round trips described above as follows: 1) Irvine CA. to Rosamond CA. 2) San Diego CA. to Rosamond CA.	Hotel Room expense performing Construction Observation task. Will be allocated to job titles as needed.	\$ 7,500		\$ 7,500
4	Task Lead, Project Manager, Project Engineer II, Technician I	Driving round trips described above as follows: 1) Irvine CA. to Rosamond CA. 2) San Diego CA. to Rosamond CA.	Hotel Room expense performing field Testing task. Will be allocated to job titles as needed.	\$ 5,250		\$ 5,250
2	Task Lead, Project Manager, Project Engineer II, Technician I	Driving round trips described above as follows: 1) Irvine CA. to Rosamond CA. 2) San Diego CA. to Rosamond CA.	Vehicle rental expense for conducting daily Construction Observation. Will be allocated to job titles as needed.	\$ 1,000		\$ 1,000

EXHIBIT B

4	Task Lead, Project Manager, Project Engineer II, Technician I	Driving round trips described above as follows: 1) Irvine CA. to Rosamond CA. 2) San Diego CA. to Rosamond CA.	Vehicle rental expense for conducting daily field Tesing. Will be allocated to job titles as needed.	\$ 3,000		\$ 3,000
Travel Grand Total				\$ 30,855	\$ 5,000	\$ 35,855

EXHIBIT B

Equipment

HDR Engineering, Inc.

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Materials & Miscellaneous

HDR Engineering, Inc.

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
2	Printing	Project management	700	\$ 0.50	\$ 350	\$ -	\$ 350
2	Printing	Design coordination between team members	1000	\$ 0.50	\$ 500	\$ -	\$ 500
4	Printing	Operations coordination between team members	1000	\$ 0.50	\$ 500	\$ -	\$ 500
				\$ -	\$ -	\$ -	\$ -
Total:					\$ 1,350	\$ -	\$ 1,350

EXHIBIT B

Subcontracts

HDR Engineering, Inc.

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/ SB/MB/None	Energy Commission Funds	Match Share	Total
2	TBD	Geotechnical Drilling	SB	\$ 25,000	\$ -	\$ 25,000
2	TBD	Survey	SB	\$ 25,000	\$ -	\$ 25,000
				\$ -	\$ -	\$ -
Total:				\$ 50,000	\$ -	\$ 50,000

EXHIBIT B

Indirect Costs and Profit

HDR Engineering, Inc.

Indirect Cost(s)

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount	Energy Commission Funds	Match Share	Total
Indirect Overhead	120.39%	Direct Labor	\$ 308,014	\$ 250,690.03	\$ -	\$ 250,690
Match Share	0.00%		\$ -	\$ -	\$ 120,128	\$ 120,128
Total:				\$ 250,690	\$ 120,128	\$ 370,818

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
10.00%	Direct Labor + Fringe + Travel + Materials+ Indirect Costs	\$ 863,637	\$ 59,090.68	\$ -	\$ 59,091
Match Share				\$ 27,273	\$ 27,273
Total:			\$ 59,091	\$ 27,273	\$ 86,364

EXHIBIT B

Category Budget

Name of Organization	3RValve LLC
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- Contractor/Recipient Subcontractor
 Small Business Micro Business Disabled Veteran Business Enterprise

Cost Category	Energy Commission Reimbursable Share	Match Share	Total
Direct Labor	\$ 75,900	\$ -	\$ 75,900
Fringe Benefits	\$ 37,836	\$ -	\$ 37,836
Total Labor	\$ 113,736	\$ -	\$ 113,736
Travel	\$ 13,065	\$ -	\$ 13,065
Equipment	\$ -	\$ -	\$ -
Materials/Miscellaneous	\$ -	\$ -	\$ -
Subcontractors	\$ -	\$ -	\$ -
Total Other Direct Costs	\$ 13,065	\$ -	\$ 13,065
Indirect Costs	\$ 9,563	\$ -	\$ 9,563
Profit (not allowed for grant recipients)	\$ 13,636	\$ -	\$ 13,636
Total Indirect and Profit	\$ 23,199	\$ -	\$ 23,199
Grand Totals	\$ 150,000	\$ -	\$ 150,000
Amount of funds to be Spent in California**	\$ 7,000		
Percentage of Funds to be spent in California	5%		

EXHIBIT B

Direct Labor (Unloaded)

3RValve LLC

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours	Energy Commission Funds	Match Share	Total
Kent Madison	Project Manager	\$ 300.00	143	\$ 42,900	\$ -	\$ 42,900
Matt Johnson	Project Prinicpal	\$ 250.00	132	\$ 33,000	\$ -	\$ 33,000
					\$ -	\$ -
					\$ -	\$ -
Hourly Direct Labor Totals				\$ 75,900	\$ -	\$ 75,900

Monthly Salary Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per month)	# of Months	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
		\$ -		\$ -	\$ -	\$ -
Monthly Direct Labor Totals				\$ -	\$ -	\$ -

	Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals	\$ 75,900	\$ -	\$ 75,900

EXHIBIT B

Fringe Benefits

3RValve LLC

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
All Classifications	49.85%	\$ 75,900	\$ 37,836	\$ -	\$ 37,836
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ 75,900	\$ 37,836	\$ -	\$ 37,836

EXHIBIT B

Travel

3RValve LLC

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
3	Kent Madison	Pasco WA to Los Angeles CA or Sacramento CA(4 round trips)	Team meetings in California including flights, lodging and transportation	\$ 6,639	\$ -	\$ 6,639
3	Matt Johnson	Spokane WA to Los Angeles CA (4 round trips)	Team meetings in California including flights, lodging and transportation	\$ 6,426	\$ -	\$ 6,426
					\$ -	\$ -
Total:				\$ 13,065	\$ -	\$ 13,065

EXHIBIT B

Equipment

3RValve LLC

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Materials & Miscellaneous

3RValve LLC

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Subcontracts

3RValve LLC

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/ SB/MB/None	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

EXHIBIT B

Indirect Costs and Profit

3RValve LLC

Indirect Cost(s)

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount	Energy Commission Funds	Match Share	Total
Indirect Overhead	12.60%	Direct Labor	\$ 75,900	\$ 9,563	\$ -	\$ 9,563
	0.00%		\$ -	\$ -	\$ -	\$ -
Total:				\$ 9,563	\$ -	\$ 9,563

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
10.00%	Direct Labor + Fringe + Travel + Indirect Costs	\$ 136,364	\$ 13,636	\$ -	\$ 13,636
Total:			\$ 13,636	\$ -	\$ 13,636

EXHIBIT B

Category Budget

Name of Organization	TBD Design Build Aquifer Pump Hydro
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- Contractor/Recipient Subcontractor
 Small Business Micro Business Disabled Veteran Business Enterprise

Cost Category	Energy Commission Reimbursable Share	Match Share	Total
Direct Labor	\$ -	\$ -	\$ -
Fringe Benefits	\$ -	\$ -	\$ -
Total Labor	\$ -	\$ -	\$ -
Travel	\$ -	\$ -	\$ -
Equipment	\$ -	\$ -	\$ -
Materials/Miscellaneous	\$ -	\$ -	\$ -
Subcontractors	\$ -	\$ -	\$ -
Total Other Direct Costs	\$ -	\$ -	\$ -
Indirect Costs	\$ -	\$ -	\$ -
Profit (not allowed for grant recipients)	\$ -	\$ -	\$ -
Total Indirect and Profit	\$ -	\$ -	\$ -
Grand Totals	\$ 300,000	\$ 150,000	\$ 450,000
Amount of funds to be Spent in California**			
Percentage of Funds to be spent in California			

EXHIBIT B

Direct Labor (Unloaded)

TBD Design Build Aquifer Pump Hydro

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
Hourly Direct Labor Totals				\$ -	\$ -	\$ -

Monthly Salary Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per month)	# of Months	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
		\$ -		\$ -	\$ -	\$ -
Monthly Direct Labor Totals				\$ -	\$ -	\$ -

	Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals	\$ -	\$ -	\$ -

EXHIBIT B

Fringe Benefits

TBD Design Build Aquifer Pump Hydro

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ -	\$ -	\$ -	\$ -

EXHIBIT B

Travel

TBD Design Build Aquifer Pump Hydro

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

EXHIBIT B

Equipment

TBD Design Build Aquifer Pump Hydro

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Materials & Miscellaneous

TBD Design Build Aquifer Pump Hydro

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Subcontracts

TBD Design Build Aquifer Pump Hydro

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/ SB/MB/None	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

EXHIBIT B

Indirect Costs and Profit

TBD
Design Build Aquifer Pump Hydro

Indirect Cost(s)

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount	Energy Commission Funds	Match Share	Total
	0.00%		\$ -	\$ -	\$ -	\$ -
	0.00%		\$ -	\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
0.00%		\$ -	\$ -	\$ -	\$ -
Total:			\$ -	\$ -	\$ -

EXHIBIT B

Category Budget

Name of Organization	Water and Energy Consulting
-----------------------------	-----------------------------

- Contractor/Recipient Subcontractor
 Small Business Micro Business Disabled Veteran Business Enterprise

Cost Category	Energy Commission Reimbursable Share	Match Share	Total
Direct Labor	\$ 351,000	\$ -	\$ 351,000
Fringe Benefits	\$ -	\$ -	\$ -
Total Labor	\$ 351,000	\$ -	\$ 351,000
Travel	\$ 9,969	\$ -	\$ 9,969
Equipment	\$ -	\$ -	\$ -
Materials/Miscellaneous	\$ -	\$ -	\$ -
Subcontractors	\$ -	\$ -	\$ -
Total Other Direct Costs	\$ 9,969	\$ -	\$ 9,969
Indirect Costs	\$ 39,031	\$ -	\$ 39,031
Profit (not allowed for grant recipients)	\$ -	\$ -	\$ -
Total Indirect and Profit	\$ 39,031	\$ -	\$ 39,031
Grand Totals	\$ 400,000	\$ -	\$ 400,000
Amount of funds to be Spent in California**	\$ 40,000		
Percentage of Funds to be spent in California	10%		

EXHIBIT B

Direct Labor (Unloaded)

Water and Energy Consulting

Hourly Rates

Employee Name	Job Classification / Title	Maximum Labor Rate (\$ per hour)	# of Hours	Energy Commission Funds	Match Share	Total
Lon W. House	Principal	\$ 180.00	1,950	\$ 351,000	\$ -	\$ 351,000
		\$ -		\$ -	\$ -	\$ -
Hourly Direct Labor Totals				\$ 351,000	\$ -	\$ 351,000

Monthly Salary Rates

Employee Name	Job Classification / Title	Labor Rate (\$ per month)	# of Months	Energy Commission Funds	Match Share	Total
		\$ -		\$ -	\$ -	\$ -
		\$ -		\$ -	\$ -	\$ -
Monthly Direct Labor Totals				\$ -	\$ -	\$ -

	Energy Commission Funds	Match Share	Total
Direct Labor Grand Totals	\$ 351,000	\$ -	\$ 351,000

EXHIBIT B

Fringe Benefits

Water and Energy Consulting

Fringe Benefit Base Description (Employee or Job Classification/Title)	Max. Fringe Benefit Rate (%)	Direct Labor Costs (\$)	Energy Commission Funds	Match Share	Total
Lon House is Sole Proprietor so no fringe benefits are requested.	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
	0.00%	\$ -	\$ -	\$ -	\$ -
Fringe Benefit Totals		\$ -	\$ -	\$ -	\$ -

EXHIBIT B

Travel

Water and Energy Consulting

Task No.	Traveler's Name and/or Classification	Departure and Destination	Trip Purpose	Energy Commission Funds	Match Share	Total
5 & 7	Lon House	Tucson, AZ to Rosemead, CA and return	Meet with SCE, flights, car rental	\$ 828	\$ -	\$ 828
5 & 7	Lon House	Tucson, AZ to Willow Springs, CA and return (6 round trips)	Initial site visit to get information for interconnection request and team meeting, subsequent site visits to verify operating parameters and operation. Flights, car rental	\$ 4,969	\$ -	\$ 4,969
5 & 7	Lon House	Tucson, AZ to 3Rvalve operations in Oregon and return	Determine generating parameters for SCE interconnection request. Flights, car rental, lodging	\$ 1,500	\$ -	\$ 1,500
5 & 7	Lon House	Tucson, AZ to Kern County, CA and return (2 round trips)	Inventory of SGMA well impacts and locations proximity to utility lines. Flights, car rentals	\$ 1,782		\$ 1,782
5 & 7	Lon House	Tucson, AZ to Kern Countym CA and return (2 round trips)	Review of DAC communities and availability and characteristic of local wells. Flights, car rental	\$ 890	\$ -	\$ 890
Total:				\$ 9,969	\$ -	\$ 9,969

EXHIBIT B

Equipment

Water and Energy Consulting

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Materials & Miscellaneous

Water and Energy Consulting

Task No.	Description	Purpose	# Units	Unit Cost	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
Total:					\$ -	\$ -	\$ -

EXHIBIT B

Subcontracts

Water and Energy Consulting

Task No.	Subcontractor Name	Purpose	CA Business Certifications DVBE/SB/MB/None	Energy Commission Funds	Match Share	Total
				\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -
Total:				\$ -	\$ -	\$ -

EXHIBIT B

Indirect Costs and Profit

Water and Energy Consulting

Indirect Cost(s)

Name of Indirect Cost	Maximum Rate	Indirect Cost Base Description	Indirect Cost Base Amount	Energy Commission Funds	Match Share	Total
Overhead	11.12%	Direct Labor	\$ 351,000	\$ 39,031	\$ -	\$ 39,031
	0.00%		\$ -	\$ -	\$ -	\$ -
Total:				\$ 39,031	\$ -	\$ 39,031

Profit

(Profit is not allowed for Grant Recipients)

Profit Rate	Profit Base Description	Profit Base Amount	Energy Commission Funds	Match Share	Total
0.00%		\$ -	\$ -	\$ -	\$ -
Total:			\$ -	\$ -	\$ -

EXHIBIT C

**ELECTRIC PROGRAM INVESTMENT CHARGE (EPIC) STANDARD
GRANT TERMS AND CONDITIONS**

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ATTACHMENT 1: CONFIDENTIAL PRODUCTS AND PROJECT-RELEVANT PRE-EXISTING AND INDEPENDENTLY FUNDED INTELLECTUAL PROPERTY

EXHIBIT C

TERMS AND CONDITIONS

1. *Introduction*

This grant agreement (Agreement) between the California Energy Commission (Energy Commission, or Commission) and the Recipient is funded by the Electric Program Investment Charge (EPIC), an electricity ratepayer surcharge authorized by the California Public Utilities Commission (CPUC).

This Agreement includes: (1) the Agreement signature page (**form CEC-146**); (2) the scope of work (**Exhibit A**); (3) the budget (**Exhibit B**); (4) these terms and conditions (**Exhibit C**); (5) any special terms and conditions that address the unique circumstances of the funded project (**Exhibit D**); (6) a contacts list (**Exhibit E**); (7) all attachments; and (8) all documents incorporated by reference.

All work and expenditure of funds (Commission-reimbursed and/or match share) must occur within the Agreement term specified on the CEC-146 form.

2. *Documents Incorporated by Reference*

The documents below are incorporated by reference into this Agreement. These terms and conditions will govern in the event of a conflict with the documents below, with the exception of the documents in subsections (f) and (g) below. Where this Agreement or California laws and regulations are silent or do not apply, the Energy Commission will use the federal cost principles and acquisition regulations listed below as guidance in determining whether reimbursement of claimed costs is allowable. Documents incorporated by reference include:

Solicitation Documents (*if award is made through a competitive solicitation*)

- a. The funding solicitation for the project supported by this Agreement
- b. The Recipient's proposal submitted in response to the solicitation

CPUC Decision

- c. Decision 13-11-025 (Decision Addressing Applications of the California Energy Commission, Pacific Gas and Electric Company, San Diego Gas & Electric Company and Southern California Edison Company for Approval of their Triennial Investment Plans for the Electric Program Investment Charge Program for the Years 2012 through 2014) <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M081/K773/81773445.PDF>

Federal Cost Principles (*applicable to state and local governments, Indian tribes, institutions of higher education, and nonprofit organizations*)

- d. 2 Code of Federal Regulations (CFR) Part 200, Subpart E (Sections 200.400 et seq.)

Federal Acquisition Regulations (*applicable to commercial organizations*)

- e. 48 CFR, Ch.1, Subchapter E, Part 31, Subpart 31.2: Contracts with Commercial Organizations (supplemented by 48 CFR, Ch. 9, Subchapter E, Part 931, Subpart 931.2 for Department of Energy grants)

Nondiscrimination

- f. 2 California Code of Regulations, Section 11099 et seq.: Contractor Nondiscrimination and Compliance

General Laws

- g. Any federal, state, or local laws or regulations applicable to the project that are not expressly listed in this Agreement

3. Standard of Performance

In performing work under the Agreement, the Recipient, its subcontractors, and their employees are responsible for exercising the degree of skill and care required by customarily accepted good professional practices and procedures for the type of work performed.

4. Due Diligence

The Recipient must take timely actions that, taken collectively, move this project to completion. The Commission Agreement Manager will periodically evaluate the project schedule for completion of Scope of Work tasks. If the Commission Agreement Manager determines that: (1) the Recipient is not diligently completing the tasks in the Scope of Work; or (2) the time remaining in this Agreement is insufficient to complete all project tasks by the Agreement end date, the Commission Agreement Manager may recommend that this Agreement be terminated, and the Commission may terminate this Agreement without prejudice to any of its other remedies.

5. Products

- a. **“Products”** are any tangible item specified for delivery to the Energy Commission in the Scope of Work, such as reports and summaries.
 - The Recipient will submit all products identified in the Scope of Work to the Commission Agreement Manager, in the manner and form specified in the Scope of Work.
 - The Recipient will also submit all products prepared during the invoicing period to the Accounting Office along with the invoice, as specified in subsection (c) of Section 8 (Payment of Funds).

If the Commission Agreement Manager determines that a product is substandard given its description and intended use as described in this Agreement, the Commission Agreement Manager, without prejudice to any of the Commission’s other remedies, may refuse to authorize payment for the product and any subsequent products that rely on or are based upon the product under this Agreement.

- b. Confidential Products

Please see Section 18 (Confidentiality) for instructions regarding confidential products.

- c. Rights in Products

The Energy Commission owns all products identified in the Scope of Work, with the exception of products that fall within the definition of “intellectual property.” The Recipient owns all intellectual property developed under this Agreement (please see the “Intellectual Property” section).

The Recipient has a non-exclusive, non-transferable, irrevocable, worldwide, perpetual license to use, publish, translate, modify, and reproduce products that do not fall within the definition of “intellectual property.”

d. Failure to Submit Products

Failure to submit a product required in the Scope of Work may be considered material noncompliance with the Agreement terms. Without prejudice to any other remedies, noncompliance may result in actions such as the withholding of future payments or awards, or the suspension or termination of the Agreement.

e. Final Report and Payment

The Recipient may only submit a request for the final payment (including any retention) after the final report is completed, submitted to the Commission Agreement Manager, and Energy Research and Development Division management has verified satisfactory completion of work.

f. Legal Statements on Products

- 1) All documents that result from work funded by this Agreement and are released to the public must include the following statement to ensure no Commission endorsement of documents:

LEGAL NOTICE

This document was prepared as a result of work sponsored by the California Energy Commission. It does not necessarily represent the views of the Energy Commission, its employees, or the State of California. Neither the Commission, the State of California, nor the Commission’s employees, contractors, or subcontractors makes any warranty, express or implied, or assumes any legal liability for the information in this document; nor does any party represent that the use of this information will not infringe upon privately owned rights. This document has not been approved or disapproved by the Commission, nor has the Commission passed upon the accuracy of the information in this document.

- 2) The Recipient will apply copyright notices to all documents prepared for this Agreement that are released to the public (including reports, articles submitted for publication, and all reprints) using the following form or any other form that may be reasonably specified by the Energy Commission.

“©[Year of first publication of product] [the Copyright Holder’s name]. All Rights Reserved.”

6. Amendments

a. Procedure for Requesting Changes

The Recipient must submit a written request to the Commission Agreement Manager for any change to the Agreement. The request must include:

- A brief summary of the proposed change;
- A brief summary of the reason(s) for the change;
- Justification for the change; and
- The revised section(s) of the Agreement, with changes made in underline/ strikethrough format.

b. Approval of Changes

No amendment or variation of this Agreement shall be valid unless made in writing and signed by both of the parties except for the Commission's unilateral termination rights in Section 16 of these terms. No oral understanding or agreement is binding on any of the parties. Changes to the Agreement must be approved at a Commission business meeting or by the Executive Director (or his/her designee).

The Commission Agreement Manager or Commission Agreement Officer will provide the Recipient with guidance regarding the level of Commission approval required for a proposed change.

c. Personnel or Subcontractor Changes

All changes below require advance written approval by the Commission Agreement Manager, in addition to the appropriate level of Commission approval as described in subsection (b).

1) Replacement of Personnel, Subcontractors, and Vendors

The Commission Agreement Manager must provide advance written approval of the replacement of any personnel except undergraduate students.

2) Assignment of New Personnel to an Existing Job Classification

If the Recipient or a subcontractor seeks to assign new personnel to a job classification identified in Exhibit B, the Recipient or subcontractor must submit the individual's resume and proposed job classification and rate to the Commission Agreement Manager for approval. The proposed rate may not exceed the maximum rate identified for the job classification. Neither the Recipient nor any subcontractor may use the job classifications or rates of their subcontractors for personnel.

If the individual performs any work prior to the effective date of the amendment documenting the change, the Recipient will bear the expense of the work.

3) Promotion of Existing Personnel (Applies to Recipients and major subcontractors)

Promotion of existing Recipient and major subcontractor personnel to rates higher than those listed for their current classification in Exhibit B will not be approved. If the actual rates (e.g., direct labor rates, fringe benefit rates, and indirect rates) exceed the approved rates in the Budget, the difference may be charged to the agreement as a match share expenditure.

4) Addition of job classifications and changes in hours.

5) Increased direct operating expenses and rates that exceed the expenses and rates identified in Exhibit B.

7. Contracting and Procurement Procedures

This section provides general requirements for agreements entered into between the Recipient and subcontractors for the performance of this Agreement.

a. Contractor's Obligations to Subcontractors

1) The Recipient is responsible for handling all contractual and administrative issues arising out of or related to any subcontracts it enters into for the performance of this Agreement.

2) Nothing contained in this Agreement or otherwise creates any contractual relation between the Commission and any subcontractors, and no subcontract may relieve the Recipient of its responsibilities under this Agreement. The Recipient agrees to be as fully responsible to the Commission for the acts and omissions of its subcontractors or persons directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the Recipient.

The Recipient's obligation to pay its subcontractors is an independent obligation from the Commission's obligation to make payments to the Recipient. As a result, the Commission has no obligation to pay or enforce the payment of any funds to any subcontractor.

3) The Recipient is responsible for establishing and maintaining contractual agreements with and reimbursing each subcontractor for work performed in accordance with the terms of this Agreement.

b. Flow-Down Provisions

Subcontracts funded in whole or in part by this Agreement must include language conforming to the provisions below, unless the subcontracts are entered into by the University of California (UC) or the U.S. Department of Energy (DOE) national laboratories. UC may use the terms and conditions negotiated by the Energy Commission with UC for its subcontracts. DOE national laboratories may use the terms and conditions negotiated with DOE (please contact the Commission Grants Officer for these terms).

- Standard of Performance (Section 3)
- Legal Statements on Products (included in Section 5, "Products")
- Travel and Per Diem (Section 9)
- Prevailing Wage (Section 10)
- Recordkeeping, Cost Accounting, and Auditing (Section 11)
- Equipment (Section 14)
- Indemnification (Section 17)
- Confidentiality (Section 18)
- Pre-Existing and Independently Funded Intellectual Property (Section 19)
- Intellectual Property (Section 20)
- Royalty Payments to the Commission (Section 21)
- Access to Sites and Records (included in Section 22, "General Provisions")
- Nondiscrimination (included in Section 23, "Certifications and Compliance")
- California Taxpayer Access to Publicly Funded Research Act (Section 24)
- Survival of the following sections:
 - Equipment (Section 14)
 - Recordkeeping, Cost Accounting, and Auditing (Section 11)
 - Pre-Existing and Independently Funded Intellectual Property (Section 19)

- Intellectual Property (Section 20)
- Royalty Payments to the Commission (Section 21)
- Access to Sites and Records (included in Section 22, “General Provisions”)
- California Taxpayer Access to Publicly Funded Research Act (Section 24)

Subcontracts funded in whole or in part by this Agreement must also include the following:

- A clear and accurate description of the material, products, or services to be procured.
- A detailed budget and timeline.
- Provisions that allow for administrative, contractual, or legal remedies in instances where subcontractors breach contract terms, in addition to sanctions and penalties as may be appropriate.
- Provisions for termination by the Recipient, including termination procedures and the basis for settlement.
- A statement that further assignments will not be made to any third or subsequent tier subcontractor without additional advance written consent of the Commission.

c. Audits

All subcontracts entered into for the performance of this Agreement are subject to examination and audit by the Energy Commission and/or Bureau of State Audits for a period of three (3) years after payment of the Recipient’s final invoice under this Agreement. The Energy Commission may audit subcontracts that are relevant to the Recipient’s royalty payment obligations (see Section 21) for a period of ten (10) years after the Agreement’s end date.

d. Copies of Subcontracts

The Recipient must provide a copy of its subcontracts upon request by the Energy Commission.

e. Conflicting Subcontract Terms

Prior to the execution of this Agreement, the Recipient will notify the Commission Agreement Manager of any known or reasonably foreseeable conflicts between this Agreement and its agreements with any subcontractors (e.g., conflicting intellectual property or payment terms). If the Recipient discovers any such conflicts after the execution of this Agreement, it will notify the Commission Agreement Manager of the conflict within fifteen (15) days of discovery. The Energy Commission may, without prejudice to its other remedies, terminate this Agreement if any conflict impairs or diminishes its value.

f. Penalties for Noncompliance

Without limiting the Commission’s other remedies, failure to comply with the above requirements may result in the termination of this Agreement.

8. Payment of Funds

a. Definitions

For purposes of this Section 8, the following terms have the following meaning:

- “Advance Payment” means the Energy Commission pays Recipient prior to the Recipient Incurring or Paying the expense.
- “Incurred Cost” means an expense for which the Recipient has become liable (legally obligated) to pay. Here are examples of incurred costs:
 - The Recipient’s staff has completed work during the month but has not been paid by the Recipient. These labor and associated costs (e.g., fringe benefits) are considered Incurred Costs.
 - The Recipient has purchased a piece of equipment **and** received an invoice, bill, or receipt. The Recipient has not yet paid the invoice. The invoice shows the amount to be paid and confirmation of the sale. This is an Incurred Costs.

Incurred costs for equipment DO NOT include purchase orders unless accompanied by an invoice, bill, or receipt that shows the payment amount due to the seller for the equipment.
- “Paid Cost” means an expense for which the Recipient has already made payment.

b. Advance Payments

Recipients can receive Advance Payments only for subcontractors with the U.S. Department of Energy laboratories. Otherwise, Advance Payments are NOT allowed under this Agreement. The Energy Commission in its sole discretion, and not the Recipient, decides if the Commission will make an Advance Payment.

c. Reimbursable Cost Requirements

In addition to any other requirements in this Agreement, the Energy Commission is only obligated to reimburse the Recipient for Incurred and Paid Costs that are (1) incurred during the Agreement Term; (2) invoiced within the required timeframes of this Agreement; (3) made in accordance with the Agreement’s Budget; and (4) actual and allowable expenses under this Agreement.

ALL of the items in the Budget, including without limitation labor rates, fringe benefits rates and indirect costs rates and individually listed items are capped amounts (i.e., maximums), and the Recipient can only bill its ACTUAL amount up to capped amounts listed in the Budget. For example, if the Budget includes an employee’s hourly rate of \$50/hour but the employee is only paid \$40/hour, the Recipient can only bill for \$40/hour. Under the same example, if the employee earned \$70/hour but the Budget only lists \$50/hour, the Recipient can only bill for \$50. Another example is if the maximum fringe benefit rate listed in the Budget is 20% but the Recipient’s actual fringe benefit rate is only 15%, the Recipient can only bill at 15%. If the actual rates (e.g., direct labor rates, fringe benefit rates, and indirect rates) exceed the approved rates in the Budget, the difference may be charged to the agreement as a match share expenditure.

d. Recipient’s 14-Day Payment Requirement for Incurred Costs

The Recipient shall pay ALL Incurred Costs for which it has invoiced the Energy Commission within 14 calendar days of receiving payment under this Agreement for the Incurred Costs. For example, if the Recipient invoices and then receives payment from the Commission on September 15 for an Incurred Cost of \$10,000, the Recipient shall pay the entire \$10,000 by September 29. This requirement is needed to prevent Recipients from creating long lead times for Incurred Costs (e.g., invoicing and receiving payment from the Commission but not paying for the Incurred Costs for weeks or months).

The Recipient shall only invoice the Commission for Incurred Expenses the Recipient shall pay with 14 calendar days of receiving payment from the Commission. For example, assume the Recipient has an Incurred Cost for a piece of equipment that costs \$300,000 and will pay in three installments of \$100,000 each over three months. The Recipient shall only invoice the Commission for \$100,000 each month. The Recipient shall not invoice for the entire \$300,000 and retain the balance over the three months.

For any Incurred Costs for which the Recipient has received funds from the Energy Commission and does not pay within 14 calendar days, the Recipient shall on the very next business day after the 14 calendar days submit repayment of the unpaid amount back to the Energy Commission. Repaid funds will be placed back into the agreement and will be available to reimburse allowable costs in accordance with this agreement. When making a repayment under this provision, the Recipient shall specify "Repayment of Unspent Funds under Agreement EPC-19-058." Recipient shall remit the repayment to:

California Energy Commission
Accounting Office
1516 Ninth Street, MS-2
Sacramento, CA 95814

This repayment requirement of the Recipient is in addition to any other rights the Energy Commission can enforce relative to this Agreement. Recipient agrees and acknowledges that time is of the essence in paying Incurred Costs and submitting repayments and the Energy Commission can treat the Recipient's breach of either requirement as a material breach. Recipient can contact the Commission Agreement Manager for any questions about the logistics of making repayments.

e. Payment Requests

The Recipient may request payment from the Energy Commission at any time during the term of this Agreement but no more frequently than monthly. The final payment request, including retention, MUST be received by the Energy Commission no later than the agreement end date.

Recipient agrees and acknowledges that time is of the essence in submitting the final payment request. The Commission has a limited period of time, set by law, in which it can reimburse funds under this Agreement. Without prejudice to the Commission's other rights, the Recipient risks not receiving any funds, and relieves the Commission of any duty and liability whatsoever to pay, for any payment requests received after the end of the Agreement.

No reimbursement for food or beverages shall be made other than allowable per diem charges.

All Recipient expenditures, reimbursable and match, must occur within the approved term of this Agreement.

f. Invoice Approval and Disputes:

Each request for payment is subject to the Commission Agreement Manager's approval. Payments will be made to the Recipient for undisputed invoices. An undisputed invoice is an invoice submitted by the Recipient for work performed, for which project expenditures and products meet all Agreement conditions, and for which additional evidence is not required to determine its validity.

The invoice will be disputed if all products due for the billing period have not been received and approved, if the invoice is inaccurate, or if it does not comply with the terms of this Agreement. If the invoice is disputed, the Recipient will be notified via a Dispute Notification Form (Std. 209).

g. Recipient's headquarters:

For purposes of payment, the Recipient's headquarters is the location of the Recipient's office where the majority of its employees assigned responsibilities for this Agreement are permanently assigned.

h. Multiple Non-Energy Commission Funding Sources:

No payment will be made for costs identified in recipient invoices that have been or will be reimbursed by another source, including but not limited to an agreement with another government entity.

"Government Entity" means: (1) a state governmental agency; (2) a state college or university; (3) a local government entity or agency, including those created as a Joint Powers Authority; (4) an auxiliary organization of the California State University or a California community college; (5) the federal government; (6) a foundation organized to support the Board of Governors of the California Community Colleges; and (7) an auxiliary organization of the Student Aid Commission established under California Education Code Section 69522.

i. Reduced funding:

If the Energy Commission does not receive sufficient funds under the Budget Act or from the investor-owned utility administrators of the EPIC program to fully fund the work identified in Exhibit A (Scope of Work), the following will occur:

- a) If the Energy Commission has received a reduced amount of funds for the work, it may: (1) offer an Agreement amendment to the Recipient to reflect the reduced amount; or (2) cancel this Agreement (with no liability occurring to the State).
- b) If the Energy Commission has received no funds for the work identified in Exhibit A: (1) this Agreement will be of no force and effect; (2) the State will have no obligation to pay any funds to the Recipient; and (3) the Recipient will have no obligation to perform any work under this Agreement.

j. Allowability of Costs

- a) Allowable Costs

The costs for which the Recipient will be reimbursed under this Agreement include all costs, direct and indirect, incurred in the performance of the work identified in the Scope of Work. Costs must be incurred within the Agreement term. Factors to be considered in determining whether an individual item of cost is allowable include: (i) reasonableness of the item, including necessity of the item for the work; (ii) applicable federal cost principles or acquisition regulations incorporated by reference in Section 2 of this Agreement; and (iii) the terms and conditions of this Agreement.

b) Unallowable Costs

Below are examples of unallowable costs. Details concerning the allowability of costs are available from the Energy Commission's Accounting Office.

- a) Profit of the Recipient or fees (this restriction does not apply to subcontractors);
 - b) Contingency costs;
 - c) Imputed costs (e.g., cost of money);
 - d) Fines and penalties;
 - e) Losses;
 - f) Excess profit taxes; and
 - g) Unapproved, increased rates and fees for this Agreement
- c) Except as provided for in this Agreement or applicable California law or regulations, the Recipient will use the federal cost principles and/or acquisition regulations incorporated by reference in Section 2 of this Agreement when determining allowable and unallowable costs. In the event of a conflict, this Agreement takes precedence over the federal cost principles and/or acquisition regulations.

k. Payment Request Format

Each request for payment will consist of, but not be limited to, the following:

- 1) An invoice that includes a list of Incurred and Paid Costs. Backup documentation is required at the time of invoice submittal, such as time cards, vendor invoices, and proof of payment (e.g., cancelled checks). Unless otherwise specified in Exhibit B or the invoice template, the invoice must include the following:
 - a) Agreement number;
 - b) Date prepared;
 - c) Recipient's Federal tax ID number;
 - d) Billing period;
 - e) Recipient's actual labor expenditures, including hourly unloaded labor rates by individual name and classification, hours worked, and benefits (fully loaded rates may only be used if they are included in the grant budget);
 - f) Non-labor expenses, including fringe benefits, indirect overhead, and general/administrative expenses;
 - g) Operating expenses, including travel, equipment, materials, and other;
 - h) By budget line item (cost component) category, the budgeted amount, amount billed to date, currently billed amount, and balance of funds;
 - i) Match fund expenditures (if applicable);

- j) Receipts for travel (including departure and return times), equipment, materials, and miscellaneous; and
 - k) Subcontractor invoices that include all items above, for correspondence with the budget (e.g., if the budget lists hourly labor rates, the subcontractor's invoice should include hourly labor rates).
- 2) A progress report that documents evidence of progress, as described in the Scope of Work.
 - 3) Products prepared by the Recipient during the invoicing period, as described in the Scope of Work.

The Commission will accept computer-generated or electronically transmitted invoices without backup documentation provided that the Recipient mails a hard copy the same day.

The Recipient must submit all invoices to the following address:

California Energy Commission
Accounting Office
1516 Ninth Street, MS-2
Sacramento, CA 95814

If the Recipient has not otherwise provided to the Commission documentation showing the Recipient's payment of Incurred Costs, the Recipient shall provide such documentation as soon as possible and not later than three working days from a request from Commission personnel.

I. Certification

The following certification will be included on each payment request form and signed by the Recipient's authorized officer:

The documents included in this request for payment are true and correct to the best of my knowledge and I, as an agent of [Company Name] have authority to submit this request. I certify that reimbursement for these costs has not and will not be received from any other sources, including but not limited to a government entity contract, subcontract, or other procurement method. For projects considered to be a public work, prevailing wages were paid to eligible workers who provided labor for the work covered by this invoice; the Recipient and all subcontractors have complied with prevailing wage laws.

m. Fringe Benefit, Indirect Overhead, General and Administrative (G&A), and Facilities and Administration (F&A) Rates

Indirect cost rates must be developed in accordance with generally accepted accounting principles and the applicable federal cost principles or acquisition regulations (see the provisions incorporated by reference in Section 2). If the Recipient has an approved fringe benefits or indirect cost rate (indirect overhead, G&A, or F&A) from its cognizant federal agency, the Recipient may bill at the federal rate up to the budget rate caps if the following conditions are met:

- The Recipient may bill at the federal provisional rate but must adjust annually to reflect its actual final rates for the year in accordance with the Labor, Fringe, and Indirect Invoicing Instructions contained in the budget (Exhibit B).

- The cost pools used to develop the federal rates must be allocable to the Agreement, and the rates must be representative of the portion of costs benefiting the Agreement. For example, if the federal rate is for manufacturing overhead at the Recipient's manufacturing facility and the Agreement is for research and development at the Recipient's research facility, the federal indirect overhead rate would not be applicable to the Agreement.
- The federal rate must be adjusted to exclude any costs that are specifically prohibited in the Agreement.
- The Recipient may only bill up to the Agreement budget rate caps, unless and until an amendment to the budget is approved.

n. Retention

The Energy Commission shall retain 10 percent of any payment request or 10 percent of the total Energy Commission award at the end of the project. The Energy Commission has the sole discretion to decide which of these methods of retention will be used in this Agreement. The Recipient must submit a completed payment request requesting release of the retention within the required timeframe (see part e "Payment Requests" above in this term). The Commission Agreement Manager will review the project file and, when satisfied that the terms of the funding Agreement have been fulfilled, will authorize release of the retention.

Retention may be released upon completion of tasks that are considered separate and distinct (i.e., the task is a stand-alone piece of work and could be completed without the other tasks). Tasks for administration or management of the Agreement and/or subcontractors are not considered separate and distinct tasks. The tasks for which retention may be released prior to the end of the Agreement must be identified in Exhibit B (budget).

When the Commission withholds 10% retention from each invoice, the Recipient can choose to flow down the retention requirement to its subcontractors subject to the following restrictions and any other requirements in this Agreement:

- The Recipient shall not flow down retention requirements to U.S. Department of Energy national laboratory subcontractors.
- The retention flowed down to subcontractors can only be up to a total of 10% of the amount of Commission funds the subcontractor is to receive. The Recipient is responsible for carrying the retention for its funded portion of the entire Agreement and cannot pass its share of retention to subcontractors. Here are three examples:
 - i. A subcontractor submits an invoice for \$100,000 to the Recipient, and the Recipient in turn submits it to the Commission. The Commission will only pay \$90,000 of the invoice and the Recipient can elect to pay only \$90,000 to the subcontractor.
 - ii. The subcontractor is the U.S. Department of Energy national laboratory and it submits an advance request for \$100,000 to the Recipient, including any other documents required in the Energy Commission's U.S. Department of Energy Terms and Conditions. The Recipient in turn submits the advance requests to the Commission for payment. The Commission will pay the full amount of the advance requests to the Recipient and the Recipient must pay the full amount to the U.S. Department of Energy.

- iii. The Recipient's submits an invoice for its own staff in the amount of \$20,000. The Commission will only pay \$18,000 to the Recipient, and the Recipient cannot withhold the \$2,000 difference from subcontractor reimbursements.

These requirements apply to all levels of subcontractors (e.g., a subcontractor to a subcontractor).

9. Travel and Per Diem

- a. Travel not listed in the budget requires prior written authorization from the Commission Agreement Manager.
- b. No reimbursement for food or beverages will be made other than for allowable per diem charges.
- c. The Recipient will be reimbursed for authorized travel and per diem up to, but not to exceed, the rates allowed nonrepresented state employees. Current allowable travel reimbursement rates can be obtained from the Commission's web site at http://www.energy.ca.gov/contracts/TRAVEL_PER_DIEM.PDF.
- d. Travel expense claims must detail expenses using the allowable rates, and the Recipient must sign and date each travel expense claim before submitting it to the Commission for payment. Expenses must be listed by trip, including dates and times of departure and return. Travel expense claims supporting receipts and expense documentation must be attached to the Recipient's Payment Request. A vehicle license number is required when claiming mileage, parking, or toll charges. Questions regarding allowable travel expenses or per diem should be addressed to the Commission Agreement Manager.

10. Prevailing Wage

- a. Requirement

Projects funded by the Energy Commission often involve construction, alteration, demolition, installation, repair, or maintenance work over \$1,000. Such projects might be considered "public works" under the California Labor Code (See California Labor Code Section 1720 et seq. and Title 8 California Code of Regulations, Section 16000 et seq.). Public works projects require the payment of prevailing wages. Prevailing wage rates can be significantly higher than non-prevailing wage rates.

- b. Determination of Project's Status

Only the California Department of Industrial Relations (DIR) and courts of competent jurisdiction may issue legally binding determinations that a particular project is or is not a public work. If the Recipient is unsure whether the project funded by the Agreement is a "public work" as defined in the California Labor Code, it may wish to seek a timely determination from DIR or an appropriate court. As such processes can be time consuming, it may not be possible to obtain a timely determination before the date for performance of the Agreement.

By accepting this grant, the Recipient is fully responsible for complying with all California public works requirements, including but not limited to payment of prevailing wage. As a material term of this grant, the Recipient must either:

- 1) Timely obtain a legally binding determination from DIR or a court of competent jurisdiction before work begins on the project that the proposed project is not a public work; or
- 2) Assume that the project is a public work and ensure that:

- Prevailing wages are paid unless and until DIR or a court of competent jurisdiction determines that the project is not a public work;
- The project budget for labor reflects these prevailing wage requirements; and
- The project complies with all other requirements of prevailing wage law, including but not limited to keeping accurate payroll records and complying with all working hour requirements and apprenticeship obligations.

California Prevailing Wage law provides for substantial damages and financial penalties for failure to pay prevailing wages when such payment is required.

c. Subcontractors and Flow-down Requirements

The Recipient will ensure that its subcontractors also comply with the public works/prevailing wage requirements above. The Recipient will ensure that all agreements with its subcontractors to perform work related to this Project contain the above terms regarding payment of prevailing wages on public works projects. The Recipient is responsible for any failure of its subcontractors to comply with California prevailing wage and public works laws.

d. Indemnification and Breach

Any failure of the Recipient or its subcontractors to comply with the above requirements will constitute breach of this Agreement which excuses the Commission's performance of this Agreement at the Commission's option, and will be at the Recipient's sole risk. In such a case, the Commission will refuse payment to the Recipient of any amount under this award and the Commission will be released, at its option, from any further performance of this Agreement or any portion thereof. The Recipient will indemnify the Energy Commission and hold it harmless for any and all financial consequences arising out of or resulting from the failure of the Recipient and/or any of its subcontractors to pay prevailing wages or to otherwise comply with the requirements of prevailing wage law.

e. Budget

The Recipient's budget on public works projects must indicate which job classifications are subject to prevailing wage. For detailed information about prevailing wage and the process to determine if the proposed project is a public work, the Recipient may wish to contact DIR or a qualified labor attorney for guidance.

f. Covered Trades

For public works projects, the Recipient may contact DIR for a list of covered trades and the applicable prevailing wage.

g. Questions

If the Recipient has any questions about this contractual requirement or the wage, record keeping, apprenticeship, or other significant requirements of California prevailing wage law, the Recipient should consult DIR and/or a qualified labor attorney before entering into this Agreement.

h. Certification

The Recipient will certify to the Energy Commission on each payment request form either that: (a) prevailing wages were paid to eligible workers who provided labor for work covered by the payment request and the Recipient and all contractors and subcontractors otherwise complied with all California prevailing wage laws; or (b) the project is not a public work requiring the payment of prevailing wages. In the latter case, the Recipient will provide competent proof of a DIR or court determination that the project is not a public work requiring the payment of prevailing wages.

Prior to the release of any retained funds under this Agreement, the Recipient will submit to the Energy Commission the above-described certificate signed by the Recipient and all contractors and subcontractors performing public works activities on the project. Absent this certificate, the Recipient will have no right to any funds under this Agreement, and Commission will be relieved of any obligation to pay any funds.

11. *Recordkeeping, Cost Accounting, and Auditing*

a. **Cost Accounting**

The Recipient will keep separate, complete, and correct accounting of the costs involved in completing the project and any match-funded portion of the project. The Commission or its agent will have the right to examine the Recipient's books of accounts at all reasonable times, to the extent necessary to verify the accuracy of the Recipient's reports.

b. **Accounting Procedures**

The Recipient's costs will be determined on the basis of its accounting system procedures and practices employed as of the effective date of this Agreement, provided that the Recipient uses generally accepted accounting principles and cost reimbursement practices. The Recipient's cost accounting practices used in accumulating and reporting costs during the performance of this Agreement will be consistent with the practices used in estimating costs for any proposal to which this Agreement relates; provided that such practices are consistent with the other terms of this Agreement and that such costs may be accumulated and reported in greater detail during performance of this Agreement.

The Recipient's accounting system will distinguish between direct and indirect costs. All costs incurred for the same purpose, in like circumstances, are either direct costs only or indirect costs only with respect to costs incurred under this Agreement.

c. **Audit Rights**

The Recipient will maintain books, records, documents, and other evidence, based on the procedures set forth above, sufficient to reflect properly all costs claimed to have been incurred in the performance of this Agreement. The Energy Commission, another state agency, and/or a public accounting firm designated by the Energy Commission may audit the Recipient's accounting records at all reasonable times, with prior notice by the Energy Commission.

It is the intent of the parties that the audits will ordinarily be performed not more frequently than once every twelve (12) months during the performance of the work and once at any time within three (3) years after payment by the Energy Commission of the Recipient's final invoice. However, performance of any such interim audits by the Energy Commission does not preclude further audit. The Energy Commission may audit books, records, documents, and other evidence relevant to the Recipient's royalty payment obligations (see Section 21) for a period of ten (10) years after payment of the Recipient's final invoice.

The Recipient will allow the auditor(s) to access such records during normal business hours, and will allow interviews of any employees who might reasonably have information related to such records. The Recipient will include a similar right of the state to audit records and interview staff in any subcontract related to the performance of this Agreement.

d. Refund to the Energy Commission

If the Energy Commission determines that any invoiced and paid amounts exceed the actual allowable incurred costs, the Recipient will repay the amounts to the Energy Commission within thirty (30) days of request or as otherwise agreed by the Energy Commission and the Recipient. If the Energy Commission does not receive such repayments, it will be entitled to take actions such as withholding further payments to the Recipient and seeking repayment from the Recipient.

e. Audit Cost

The Recipient will bear its cost of participating in any audit (e.g., mailing or travel expenses). The Energy Commission will bear the cost of conducting the audit unless the audit reveals an error detrimental to the Energy Commission that exceeds more than ten percent (10%) or \$5,000 (whichever is greater) of: (1) the amount audited; or (2) if a royalty audit, the total royalties due in the period audited. The Recipient will pay the refund as specified in subsection (d), and will reimburse the Energy Commission for reasonable costs and expenses incurred by the Commission in conducting the audit.

f. Match or Cost Share

If the budget includes a match share requirement, the Recipient's commitment of resources, as described in this Agreement, is a required expenditure for receipt of Energy Commission funds. The funds will be released only if the required match percentages are expended. The Recipient must maintain accounting records detailing the expenditure of the match (actual cash and in-kind, non-cash services), and report on match share expenditures on its request for payment.

12. Workers' Compensation Insurance

- a. The Recipient warrants that it carries Worker's Compensation Insurance for all of its employees who will be engaged in the performance of this Agreement, and agrees to furnish to the Commission Agreement Manager satisfactory evidence of this insurance upon the Commission Agreement Manager's request.
- b. If the Recipient is self-insured for worker's compensation, it warrants that the self-insurance is permissible under the laws of the State of California and agrees to furnish to the Commission Agreement Manager satisfactory evidence of the insurance upon the Commission Agreement Manager's request.

13. Permits and Clearances

The Recipient is responsible for ensuring that all necessary permits and environmental documents are prepared and that clearances are obtained from the appropriate agencies.

14. Equipment

Title to equipment acquired by the Recipient with grant funds will vest in the Recipient. The Recipient may use the equipment in the project or program for which it was acquired as long as needed, regardless of whether the project or program continues to be supported by grant funds. However, the Recipient may not sell, lease, or encumber the property (i.e., place a legal burden on the property such as a lien) during the Agreement term without the Commission Agreement Manager's prior written approval.

The Recipient may refer to the applicable federal regulations incorporated by reference in this Agreement for guidance regarding additional equipment requirements.

15. Stop Work

Energy Commission staff may, at any time by written notice to the Recipient, require the Recipient to stop all or any part of the work tasks in this Agreement. Stop work orders may be issued for reasons such as a project exceeding budget, noncompliance with the standard of performance, out of scope work, project delays, and misrepresentations.

- a. Compliance. Upon receipt of a stop work order, the Recipient must immediately take all necessary steps to comply with the order and to stop the incurrence of costs allocable to the Energy Commission.
- b. Canceling a Stop Work Order. The Recipient may resume the work only upon receipt of written instructions from Energy Commission staff.

16. Termination

- a. Purpose

Because the Energy Commission is a state entity and provides funding on behalf of all California ratepayers, it must be able to terminate the Agreement upon the default of the Recipient and to proceed with the work required under the Agreement in any manner it deems proper. The Recipient agrees that upon any of the events triggering the termination of the Agreement by the Energy Commission, the Energy Commission has the right to terminate the Agreement, and it would constitute bad faith of the Recipient to interfere with the immediate termination of the Agreement by the Energy Commission.

- b. With Cause

The Energy Commission may, for cause, terminate this Agreement upon giving five (5) calendar days advance written notice to the Recipient. In this event, the Recipient will use all reasonable efforts to mitigate its expenses and obligations. The Recipient will relinquish possession of equipment purchased for this Agreement with Energy Commission funds to the Commission, or the Recipient may purchase the equipment as provided by the terms of this Agreement, with approval of the Energy Commission.

The term “for cause” includes but is not limited to the following:

- Partial or complete loss of match funds;
- Reorganization to a business entity unsatisfactory to the Energy Commission;
- Retention or hiring of subcontractors, or replacement or addition of personnel, that fail to perform to the standards and requirements of this Agreement;
- The Recipient’s inability to pay its debts as they become due and/or the Recipient’s default of an obligation that impacts its ability to perform under this Agreement; or
- Significant change in state or Energy Commission policy such that the work or product being funded would not be supported by the Commission.

c. **Without Cause**

The Energy Commission may terminate this Agreement without cause upon giving thirty (30) days advance written notice to the Recipient. In this event, the Recipient will use all reasonable efforts to mitigate its expenses and obligations.

17. Indemnification

To the extent allowed under California law, the Recipient will indemnify, defend, and hold harmless the state (including the Energy Commission) and state officers, agents, and employees from any and all claims and losses in connection with the performance of this Agreement.

18. Confidentiality

a. **Identification of Confidential Information**

- 1) Prior to the effective date of this Agreement, the Recipient will identify all products (or information contained within products) that it considers to be confidential, in addition to the legal basis for confidentiality, in Attachment 1 to this Exhibit. If the Energy Commission agrees that the information is confidential, it will not disclose it except as provided in subsection (b).
- 2) During the Agreement, if the Recipient develops additional products (or information contained within products) not originally anticipated as confidential, it will follow the procedures for a request for designation of confidential information specified in Title 20 California Code of Regulations (CCR) Section 2505.

The Energy Commission’s Executive Director will make the confidentiality determination. Such subsequent determinations may be added to the list of confidential deliverables in the Attachment 1 to this Exhibit. The Energy Commission will not disclose information subject to an application for confidential designation except as provided in subsection (b).

- 3) When submitting products containing confidential information, the Recipient will mark each page of any document containing confidential information as “confidential”, and present it in a sealed package to the Contracts, Grants, and Loans Office.

The Commission Agreement Manager may require the Recipient to submit a non-confidential version of the product, if it is feasible to separate the confidential information from the non-confidential information. The Recipient is not required to submit such products in a sealed package.

b. Disclosure of Confidential Information

The Energy Commission will only disclose confidential information under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508. All confidential information that is legally disclosed by the Recipient or any other entity will become a public record and will no longer be subject to the Energy Commission’s confidentiality designation.

c. Waiver of Consequential Damages

In no event will the Energy Commission, the California Public Utilities Commission, or the state of California be liable for any special, incidental, or consequential damages based on breach of warranty, breach of contract, negligence, strict tort, or any other legal theory for the disclosure of the Recipient’s confidential information, even if the Commission has been advised of the possibility of such damages.

Damages that the Energy Commission, the California Public Utilities Commission, and the state of California will not be responsible for include but are not limited to: lost profit; lost savings or revenue; lost goodwill; lost use of the product or any associated equipment; cost of capital; cost of any substitute equipment, facilities, or services; downtime; the claims of third parties including customers; and injury to property.

d. Limitations on the Disclosure of Products

- 1) During the Agreement, the Recipient and subcontractors must receive approval from the Commission Agreement Manager prior to disclosing the contents of any draft product to a third party. However, if the Energy Commission makes a public statement about the content of any product provided by the Recipient and the Recipient believes the statement is incorrect, the Recipient may state publicly what it believes is correct.
- 2) Except as provided in Title 20 CCR Sections 2506, 2507, and 2508, the Recipient may not disclose any information provided to it by the Energy Commission for the performance of this Agreement if the information has been designated as confidential or is the subject of a pending application for confidential designation. At the election of the Commission Agreement Manager, the Recipient, its employees, and its subcontractors must execute a confidentiality agreement provided by the Commission Agreement Manager.
- 3) The Recipient will ensure that each of its officers, employees, and subcontractors who are involved in the performance of this Agreement are informed about these disclosure limitations and will abide by them.

19. Pre-Existing and Independently Funded Intellectual Property

a. Ownership

The Energy Commission makes no ownership, license, or royalty claims to pre-existing intellectual property, independently funded intellectual property, or project-relevant pre-existing or independently funded intellectual property. **“Ownership”** means exclusive possession and control of all rights to property, including the right to use and transfer property. Intellectual property licenses and royalties are discussed in Sections 20 and 21.

- 1) **“Pre-existing intellectual property”** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that the Recipient or a third party owned or possessed prior to the effective date of this Agreement and that have not been developed, altered, or reduced to practice with Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.
- 2) **“Independently funded intellectual property”** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice by the Recipient or a third party during or after the Agreement term without Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

“Works of authorship” does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices. The Commission owns such products regardless of their funding source.

- 3) **“Project-relevant pre-existing intellectual property”** and **“project-relevant independently funded intellectual property”** mean pre-existing and independently funded intellectual property used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.

b. Project-Relevant Pre-Existing and Independently Funded Intellectual Property

- 1) Identification of Property
 - a) The Recipient will identify all project-relevant pre-existing intellectual property in Attachment 1 to this Exhibit prior to the effective date of the Agreement, or within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement. Attachment 1 may be amended (see the “Amendments” section).
 - b) The Recipient will identify all project-relevant independently funded intellectual property and the source of funding for the property in Attachment 1 to this Exhibit within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.

- c) Failure to identify project-relevant pre-existing or independently funded intellectual property in Attachment 1 to this Exhibit may result in the property's designation as "intellectual property" that is subject to licenses and royalties, as described in Sections 20 and 21.

2) Access to Property

The extent of Energy Commission and California Public Utilities Commission access to project-relevant pre-existing and independently funded intellectual property is limited to that reasonably necessary to: (a) demonstrate the validity of any premise, postulate, or conclusion referred to or expressed in any product; or (b) establish a baseline for repayment purposes.

Upon the Commission Agreement Manager's request, the Recipient will provide the Commission Agreement Manager and any reviewers designated by the Energy Commission or the California Public Utilities Commission with access to review the Recipient's project-relevant pre-existing and independently funded intellectual property. If the property has been designated as confidential as specified in Section 18, the Energy Commission will only disclose it under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508.

3) Preservation of Property

The Recipient will preserve any project-relevant pre-existing or independently funded intellectual property at its own expense for at least ten (10) years from the Agreement's end date, unless the Recipient agrees to a longer retention period.

The Energy Commission and the California Public Utilities Commission will have reasonable access to the project-relevant pre-existing or independently funded property throughout the retention period.

20. Intellectual Property

a. Ownership

- 1) The Recipient owns all intellectual property, subject to the licenses described in subsection b.

"Intellectual property" means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice with Agreement or match funds during or after the Agreement term; (b) any associated proprietary rights to these items, such as patent and copyright; and (c) any upgrades or revisions to these items.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices.

- 2) The Energy Commission owns all products identified in the Scope of Work, with the exception of products that fall within the definition of "intellectual property."

"Product" means any tangible item specified for delivery to the Energy Commission in the Scope of Work.

b. Intellectual Property Licenses

- 1) Both the Energy Commission and the California Public Utilities Commission have a no-cost, non-exclusive, transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, modify, and reproduce intellectual property for governmental purposes. The licenses are transferable only to load-serving entities for the purpose described below.
- 2) Under limited circumstances, both the Energy Commission and the California Public Utilities Commission may grant load-serving entities a no-cost, non-exclusive, transferable, irrevocable, royalty-free, worldwide, perpetual license to use, publish, translate, modify, and reproduce intellectual property to enhance the entities' service to EPIC ratepayers. **The intellectual property that may be licensed to load-serving entities is limited to analytical tools and models that can be used to inform distribution planning and decision-making that benefits electric ratepayers.**
"Load-serving entity" means a company or other organization that provides electricity to EPIC ratepayers.
The licenses are transferable to third parties only for the purpose of facilitating the load-serving entity's enhancement of service to EPIC ratepayers. Load-serving entities must obtain prior written approval from the Energy Commission or California Public Utilities Commission (whichever agency granted the load-serving entity the license) in order to transfer the license to a third party.
- 3) The Recipient has a non-exclusive, non-transferable, irrevocable, worldwide, perpetual license to use, publish, translate, modify, and reproduce written products created for Agreement reporting and management purposes, such as reports and summaries.
- 4) If any intellectual property that is subject to the licenses above has been designated as confidential as specified in Section 18, all license holders will only disclose the intellectual property under the circumstances specified in Title 20 CCR Sections 2506, 2507, and 2508.
All license holders will ensure that their officers, employees, and subcontractors who have access to the intellectual property are informed of and abide by the disclosure limitations in Section 18.

c. Energy Commission's Rights to Inventions

"**Invention**" means intellectual property that is patentable.

1) March-In Rights

At the Energy Commission's request, the Recipient will forfeit and assign to the Energy Commission all rights to any invention (with the exception of U.S. Department of Energy reserved rights) if the Recipient or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the invention. The Energy Commission will have the unfettered right to use and/or dispose of the rights in whatever manner it deems most suitable to help transfer the invention into the marketplace, including but not limited to seeking patent protection or licensing the invention.

2) Notice of Patent

If any patent is issued for an invention, the Recipient will send the Commission Agreement Manager written notice of the issuance within three (3) months of the issuance date. The notice must include the patent title, issuance number, and a general description of the invention.

3) Legal Notice

The Recipient and all persons and/or entities obtaining an ownership interest in patentable intellectual property must include the following statement within the specification of any United States patent application, and any subsequently issued patent for the invention:

“This invention was made with State of California support under California Energy Commission grant number EPC-19-058. The Energy Commission has certain rights to this invention.”

d. Access to and Preservation of Intellectual Property

1) Access to Intellectual Property

Upon the Commission Agreement Manager’s request, the Recipient will provide the Commission Agreement Manager and any individuals designated by the Energy Commission or the California Public Utilities Commission with access to the Recipient’s intellectual property in order to exercise the license and march-in rights described above, and to determine any royalty payments due under the Agreement.

2) Preservation of Intellectual Property

The Recipient will preserve intellectual property at its own expense for at least ten (10) years from the Agreement’s end date, unless the Recipient agrees to a longer retention period.

e. Intellectual Property Indemnity

The Recipient may not, in supplying work under this Agreement, knowingly infringe or misappropriate any intellectual property right of a third party, and will take reasonable actions to avoid infringement.

The Recipient will defend and indemnify the Energy Commission and the California Public Utilities Commission from and against any claim, lawsuit, or other proceeding, loss, cost, liability, or expense (including court costs and reasonable fees of attorneys and other professionals) to the extent arising out of: (i) any third party claim that a product infringes any patent, copyright, trade secret, or other intellectual property right of any third party; or (ii) any third party claim arising out of the negligent or other tortious acts or omissions by the Recipient or its employees, subcontractors, or agents in connection with or related to the products or the Recipient’s performance under this Agreement.

21. Royalty Payments to the Commission

“Sale,” “sales,” and “sold” mean the sale, license, lease, or other transfer of intellectual property. **Sales Price** means the price at which intellectual property is sold, excluding sales tax.

- a. The Recipient will pay the Energy Commission a royalty of one and one-half percent (1.5%) of the sales price of all sales for which the Recipient receives a payment, beginning on the Agreement’s effective date and extending for ten (10) years from the Agreement’s end date.

- b. The Recipient will make payments in annual installments due on the first day of March in the calendar year immediately following the year during which the Recipient received any payment for sales.
- c. The Recipient is not required to make a royalty payment for any calendar year in which payments for sales are less than \$1000. Total royalty payments will be limited to three (3) times the amount of funds paid by the Energy Commission under the Agreement.
- d. If intellectual property was developed in part with match funds during the Agreement term, the royalty payment will be reduced in accordance with the percentage of intellectual property development activities that were funded with match funds. For example, if 10% of the development activities were funded with match funds during the Agreement and payments for sales totaled \$100,000 in one year, the Recipient would owe the Energy Commission \$1350 for the year (1.5% of \$100,000 = \$1500; 10% of \$1500 = \$150; \$1500 - \$150 = \$1350).

If the Energy Commission is providing funds to the Recipient under this Agreement as a project match partner and Energy Commission funds are used in part to develop intellectual property, the royalty payments will be reduced in accordance with the percentage of intellectual property development activities that were funded with non-Energy Commission funds during the Agreement term. For example, if 80% of the development activities were funded with Recipient and/or third party funds during the Agreement and payments for sales totaled \$100,000 in one year, the Recipient would owe the Energy Commission \$300 for the year (1.5% of \$100,000 = \$1500; 80% of \$1500 = \$1200; \$1500 - \$1200 = \$300).
- e. The Recipient may make an early buyout payment to the Energy Commission without a pre-payment penalty, as an alternative to making annual royalty payments for ten (10) years following the Agreement's end date. The payment must be in a lump sum amount equal to one and a half (1.5) times the amount of funds paid by the Energy Commission under the Agreement and made within five (5) years of the Agreement's end date. The payment amount due under the early buyout option will not be reduced by the percentage of match funds as described above.
- f. The Recipient may not make any sale of intellectual property for consideration other than fair market value. Such activity constitutes breach of this Agreement, and will obligate the Recipient to repay within sixty (60) days the early buyout amount due. In the event of breach, the Energy Commission may exercise all rights and remedies available to it under law and at equity.
- g. Royalty payments not made within fifteen (15) days of the due date will constitute breach of this Agreement. The payments will become debt obligations of the Recipient to the Energy Commission, due upon demand and bearing interest at the maximum interest rate allowed by law.
- h. The Recipient will maintain separate accounts within its financial and other records for the purpose of tracking components of sales and royalties due to the Energy Commission under this Agreement.
- i. Payments to the Energy Commission are subject to audit as provided for under the Recordkeeping, Cost Accounting, and Auditing section.
- j. The Recipient will include these royalty provisions in its agreements with all subcontractors who develop or assist with the development of intellectual property.

22. General Provisions

a. Governing Law

This Agreement is governed by the laws of the State of California as to interpretation and performance.

b. Independent Capacity

In the performance of this Agreement, the Recipient and its agents, subcontractors, and employees will act in an independent capacity and not as officers, employees, or agents of the State of California.

c. Assignment

This Agreement is not assignable or transferable by the Recipient either in whole or in part without the consent of the Energy Commission in the form of an amendment.

d. Timeliness

Time is of the essence in this Agreement.

e. Severability

If any provision of this Agreement is unenforceable or held to be unenforceable, all other provisions of this Agreement will remain in full force and effect.

f. Waiver

No waiver of any breach of this Agreement constitutes waiver of any other breach. All remedies in this Agreement will be taken and construed as cumulative, meaning in addition to every other remedy provided in the Agreement or by law.

g. Assurances

The Commission reserves the right to seek further written assurances from the Recipient and its team that the work under this Agreement will be performed in accordance with the terms of the Agreement.

h. Change in Business

- 1) The Recipient will promptly notify the Energy Commission of the occurrence of any of the following:
 - a) A change of address.
 - b) A change in business name or ownership.
 - c) The existence of any litigation or other legal proceeding affecting the project or Agreement.
 - d) The occurrence of any casualty or other loss to project personnel, equipment, or third parties.
 - e) Receipt of notice of any claim or potential claim against the Recipient for patent, copyright, trademark, service mark, and/or trade secret infringement that could affect the Energy Commission's rights.

2) The Recipient must provide the Commission Agreement Manager with written notice of a planned change or reorganization of the type of business entity under which it does business. A change of business entity or name change requires an amendment assigning or novating the Agreement to the changed entity. If the Energy Commission does not seek to amend this Agreement or enter into a new agreement with the changed or new entity for any reason (including that the Commission is not satisfied that the new entity can perform in the same manner as the Recipient), it may terminate this Agreement as provided in the "Termination" section.

i. Access to Sites and Records

Energy Commission and California Public Utilities Commission staff and representatives will have reasonable access to all project sites and to all records related to this Agreement.

j. Prior Dealings, Custom, or Trade Usage

These terms and conditions may not be modified or supplemented by prior dealings, custom, or trade usage.

k. Survival of Terms

Certain provisions will survive the completion or termination date of this Agreement for any reason. The provisions include but are not limited to:

- Legal Statements on Products (included in Section 5, "Products")
- Payment of Funds (Section 8)
- Recordkeeping, Cost Accounting, and Auditing (Section 11)
- Equipment (Section 14)
- Termination (Section 16)
- Indemnification (Section 17)
- Pre-Existing and Independently Funded Intellectual Property (Section 19)
- Intellectual Property (Section 20)
- Royalty Payments to the Commission (Section 21)
- California Taxpayer Access to Publicly Funded Research Act (Section 24)
- Change in Business (see this section)
- Access to Sites and Records (see this section)

23. *Certifications and Compliance*

a. Federal, State, and Local Laws

The Recipient must obtain all required permits and shall comply with all applicable federal, state and local laws, codes, rules, and regulations for all work performed under the Agreement.

b. Nondiscrimination Statement of Compliance

During the performance of this Agreement, the Recipient and its subcontractors will not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, sexual orientation, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition, age, marital status, or denial of family care leave. The Recipient and its subcontractors will ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.

The Recipient and its subcontractors will comply with the provisions of the Fair Employment and Housing Act (Government Code Sections 12990 et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 11000 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4.1 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part of it as if set forth in full. The Recipient and its subcontractors will give written notice of their obligations under this section to labor organizations with which they have a collective bargaining or other Agreement.

The Recipient will include the nondiscrimination and compliance provisions of this section in all subcontracts to perform work under this Agreement.

c. Drug-Free Workplace Certification

By signing this Agreement, the Recipient certifies under penalty of perjury under the laws of the State of California that it will comply with the requirements of the Drug-Free Workplace Act of 1990 (Government Code Section 8350 et seq.) and will provide a drug-free workplace by taking the following actions:

- 1) Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited, and specifying actions to be taken against employees for violations as required by Government Code Section 8355(a).
- 2) Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b) to inform employees about all of the following:
 - The dangers of drug abuse in the workplace;
 - The person's or organization's policy of maintaining a drug-free workplace;
 - Any available counseling, rehabilitation, and employee assistance programs; and
 - Penalties that may be imposed upon employees for drug abuse violations.
- 3) Provide, as required by Government Code Section 8355(c), that every employee who works on the proposed project:
 - Will receive a copy of the company's drug-free policy statement; and
 - Will agree to abide by the terms of the company's statement as a condition of employment on the project.

Failure to comply with these requirements may result in suspension of payments under the Agreement or termination of the Agreement or both, and the Recipient may be ineligible for any future state awards if the Commission determines that any of the following has occurred: (1) the Recipient has made false certification, or (2) violates the certification by failing to carry out the requirements as noted above.

d. National Labor Relations Board Certification (Not applicable to public entities)

The Recipient, by signing this Agreement, swears under penalty of perjury that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Recipient within the immediately preceding two year period because of the Recipient's failure to comply with an order of a federal court that orders the Recipient to comply with an order of the National Labor Relations Board.

e. Child Support Compliance Act (Applicable to California Employers)

For any agreement in excess of \$100,000, the Recipient acknowledges that:

- 1) It recognizes the importance of child and family support obligations and will fully comply with all applicable state and federal laws relating to child and family support enforcement, including but not limited to disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and
- 2) To the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.

f. Air or Water Pollution Violation

Under state laws, the Recipient will not be:

- 1) In violation of any order or resolution not subject to review promulgated by the State Air Resources Board or an air pollution control district;
- 2) Subject to a cease and desist order not subject to review issued pursuant to Section 13301 of the Water Code for violation of waste discharge requirements or discharge prohibitions; or
- 3) Finally determined to be in violation of provisions of federal law relating to air or water pollution.

g. Americans With Disabilities Act

By signing this Agreement, the Recipient assures the State that it complies with the Americans with Disabilities Act (ADA) of 1990 (42 U.S.C. Section 12101, et seq.), which prohibits discrimination on the basis of disability, as well as applicable regulations and guidelines issued pursuant to the ADA.

24. California Taxpayer Access to Publicly Funded Research Act

- a. As a condition to receiving funding under this Agreement, the Recipient agrees to fully comply with the California Taxpayer Access to Publicly Funded Research Act (California Government Code sections 13989 et seq., the "Act") and provisions of this section, which apply to publications describing knowledge, an invention, or technology funded within the scope of this Agreement.

- b. For purposes of complying with the Act and this section of the Agreement, the following definitions shall apply.
 - 1) “Peer-Reviewed Manuscript” means a manuscript after it has been peer reviewed and in the form in which it has been accepted for publication in a scientific journal.
 - 2) “Research Grant” in the Act and “this Agreement” in this section mean this Agreement.
 - 3) “State Agency” in the Act means the Energy Commission.
- c. The Recipient shall provide for free public access to any Peer-Reviewed Manuscript developed within the scope of this Agreement.
- d. The Recipient shall ensure that any publishing or copyright agreements concerning Peer-Reviewed Manuscripts:
 - 1) Fully comply with California Government Code section 13989.6;
 - 2) Do not conflict with the Energy Commission’s rights under this Agreement;
 - 3) Secure for the Energy Commission the rights provided under this Agreement, including the rights to Intellectual Property as specified in Section 20; and
 - 4) Recognize the free public access to the Peer-Reviewed Manuscript.
- e. The Recipient shall report to the Energy Commission the final disposition of any Peer-Reviewed Manuscript, including but not limited to if it was published; when it was published; where it was published; and, when the 12-month time period expires, where the Peer-Reviewed Manuscript will be available for open access.
- f. Not later than 12 months after the official date of publication, or sooner if specified in the Schedule of Products, the Recipient shall make available to the Energy Commission an electronic version of any Peer-Reviewed Manuscript that is developed within the scope of this Agreement.
- g. The Recipient shall make publicly accessible an electronic version of any Peer-Reviewed Manuscript that is developed within the scope of this Agreement, not later than 12 months after the official date of publication, on a repository approved in writing by the Energy Commission, including but not limited to the University of California’s eScholarship Repository at the California Digital Library; the California State University’s ScholarWorks at the Systemwide Digital Library; or PubMed Central. The Recipient shall notify the Energy Commission when the Peer-Reviewed Manuscript is available on an Energy Commission-approved repository.
- h. If the Recipient is unable to ensure that its Peer-Reviewed Manuscript is accessible on an Energy Commission-approved, publicly accessible repository,

the Recipient may comply by providing the manuscript to the Energy Commission not later than 12 months after the official date of publication.

- i. For any publications other than a Peer-Reviewed Manuscript, (herein referred to as “Other Publications”) including scientific meeting abstracts, developed within the scope of this Agreement, the Recipient shall:
 - 1) Provide an electronic version of the Other Publications to the Energy Commission not later than 12 months after the official date of publication.
 - 2) Ensure that any publishing or copyright agreements concerning Other Publications:
 - i. Do not conflict with the Energy Commission’s rights under this Agreement.
 - ii. Secure for the Energy Commission the rights provided under this Agreement, including the rights to Intellectual Property as specified in Section 20.
- j. The Act states that “Grantees are authorized to use grant money for publication costs, including fees charged by a publisher for color and page charges, or fees for digital distribution.” Recipient agrees that for purposes of this Agreement, the Recipient is only authorized to use funds under this Agreement, including Matching funds, for these purposes **if the expenses are included in the Agreement’s Budget and meet the other Agreement requirements for payment, including that the Commission will only reimburse the Recipient for expenditures incurred during the Agreement term. If these expenses are not included in the Budget, both parties must agree and amend the Budget to include such expenditures before Recipient is authorized to use Agreement funds, either reimbursable expenses or match, for these purposes.**
- k. Should a conflict exist between the terms in this Section 24 and other terms of this Agreement, the terms in this section prevail.

25. **Definitions**

- **Agreement Term** means the length of this Agreement, as specified on the Agreement signature page (form CEC-146).
- **Confidential Information** means information that the Recipient has satisfactorily identified as confidential in Attachment 1 to this Exhibit and that the Energy Commission has agreed to designate as confidential under Title 20 California Code of Regulations Section 2505.
- **Data** means any recorded information that relates to the project funded by the Agreement, whether created or collected before or after the Agreement’s effective date.

- **Effective Date** means the date on which this Agreement is signed by the last party required to sign, provided that signature occurs after the Agreement has been approved by the Energy Commission at a business meeting or by the Executive Director or his/her designee.
- **EPIC** means the Electric Program Investment Charge, an electricity ratepayer-funded surcharge authorized by the California Public Utilities Commission in December 2011.
- **Equipment** means products, objects, machinery, apparatus, implements, or tools that are purchased or constructed with Energy Commission funds for the project, and that have a useful life of at least one year and an acquisition unit cost of at least \$5,000. "Equipment" includes products, objects, machinery, apparatus, implements, or tools that are composed by over thirty percent (30%) of materials purchased for the project. For purposes of determining depreciated value of equipment used in the Agreement, the project will terminate at the end of the normal useful life of the equipment purchased and/or developed with Energy Commission funds. The Energy Commission may determine the normal useful life of the equipment.
- **Independently Funded Intellectual Property** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice by the Recipient or a third party during or after the Agreement term without Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices. The Commission owns such products regardless of their funding source.

- **Intellectual Property** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice with Agreement or match funds during or after the Agreement term; (b) any associated proprietary rights to these items, such as patent and copyright; and (c) any upgrades or revisions to these items.

"Works of authorship" does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices.

- **Invention** means intellectual property that is patentable.
- **Load-serving entity** means a company or other organization that provides electricity to EPIC ratepayers.
- **Match Funds** means cash or in-kind (i.e., non-cash) contributions provided by the Recipient or a third party for a project funded by the Energy Commission. If this Agreement resulted from a solicitation, refer to the solicitation's discussion of match funding for guidelines specific to the project.

- **Materials** means the substances used to construct, or as part of, a finished object, commodity, device, article, or product and that does not meet the definition of Equipment.
- **Ownership** means exclusive possession of all rights to property, including the right to use and transfer property.
- **Pre-existing intellectual property** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that the Recipient or a third party owned or possessed prior to the effective date of this Agreement and that have not been developed, altered, or reduced to practice with Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.
- **Product** means any tangible item specified for delivery to the Energy Commission in the Scope of Work.
- **Project** means the entire effort undertaken and planned by the Recipient and consisting of the work funded by the Energy Commission. The project may coincide with or extend beyond the Agreement term.
- **Project-relevant pre-existing intellectual property and project-relevant independently funded intellectual property** mean pre-existing and independently funded intellectual property used to support a premise, postulate, or conclusion referred to or expressed in any product under this Agreement.
- **Sale, Sales,** and **Sold** mean the sale, license, lease, or other transfer of intellectual property.
- **Sales Price** means the price at which intellectual property is sold, excluding normal returns and allowances such as sales tax.
- **State** means the state of California and all California state agencies within it, including but not limited to commissions, boards, offices, and departments.

Exhibit C-1

Confidential Products and Project-Relevant Pre-Existing and Independently Funded Intellectual Property

1. Instructions

Identification of Confidential Information

- **Prior to the effective date of the Agreement**, the Recipient must identify in Section 2 of this attachment any products (or information contained within products) that it considers to be confidential. If the Energy Commission agrees that the information is confidential, it will not disclose it except as provided in Section 19 (Confidentiality) of these terms and conditions.
- **During the Agreement**, if the Recipient develops additional information not originally anticipated as confidential, it must follow the procedures for a request for designation of confidential information specified in Title 20 California Code of Regulations (CCR) Section 2505.

The Energy Commission's Executive Director will make the confidentiality determination. Following this determination, the confidential information may be added to this attachment through a Letter of Agreement (see Section 6 (Amendments) and Attachment 2 (Sample Letter of Agreement)). The Energy Commission will not disclose information subject to an application for confidential designation except as provided in Section 19.

- **When submitting products containing confidential information**, the Recipient must mark each page of any document containing confidential information as "confidential" and present it in a sealed package to the Contracts, Grants, and Loans Office.

The Commission Agreement Manager may require the Recipient to submit a non-confidential version of the product, if it is feasible to separate the confidential information from the non-confidential information.

Identification of Project-Relevant Independently Funded and Pre-Existing Intellectual Property

- The Recipient must identify all project-relevant pre-existing intellectual property and project-relevant independently funded intellectual property in Section 3 of this attachment prior to the effective date of the Agreement, or within sixty (60) days of becoming aware that the property has been or will be used to support a premise, postulate, or conclusion referred to or expressed in any product under the Agreement. This attachment may be amended by a Letter of Agreement (see Section 6 (Amendments) and Attachment 2 (Sample Letter of Agreement)).
 - **"Project-relevant pre-existing intellectual property" and "project-relevant independently funded intellectual property"** mean pre-existing and independently funded intellectual property used to support a premise, postulate, or conclusion referred to or expressed in any product under the Agreement.
 - **"Pre-existing intellectual property"** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that the Recipient or a third party owned or possessed prior to the effective date of this Agreement and that have not been developed, altered, or reduced to practice with Energy Commission or match funds; and (b) associated proprietary rights to these items

that are obtained without Energy Commission or match funds, such as patent and copyright.

- **“Independently funded intellectual property”** means: (a) inventions, technologies, designs, drawings, data, software, formulas, compositions, processes, techniques, works of authorship, trademarks, service marks, and logos that are created, conceived, discovered, made, developed, altered, or reduced to practice by the Recipient or a third party during or after the Agreement term without Energy Commission or match funds; and (b) associated proprietary rights to these items that are obtained without Energy Commission or match funds, such as patent and copyright.

“Works of authorship” does not include written products created for Agreement reporting and management purposes, such as reports, summaries, lists, letters, agendas, schedules, and invoices. The Commission owns such products regardless of their funding source.

- **Failure to identify project-relevant pre-existing or independently funded intellectual property** in this attachment may result in the property’s designation as “intellectual property” that is subject to licenses and royalties, as described in Sections 21 (Intellectual Property) and 22 (Royalty Payments to the Commission).

2. Confidential Products and/or Confidential Information Contained within Products

The Energy Commission designates the following products (or information contained within products) as confidential, in accordance with Title 20 California Code of Regulations Section 2505(c)(2)(B).

Product name	NONE
Task/subtask number	
Information to be kept confidential	<input type="checkbox"/> Entire product <input type="checkbox"/> Selected information within product (<i>describe below; be as specific as possible</i>):
Legal basis for confidentiality designation	<input type="checkbox"/> California Public Records Act, located in California Government Code Sections 6250 et seq. (<i>identify the relevant section(s) and subsections(s) below</i>): <input type="checkbox"/> Other law (<i>identify below, including the relevant section(s) and subsections(s)</i>):
Term of confidentiality	MM-DD-YY to MM-DD-YY
<p>Trade secrets only</p> <p>Answer the following questions if the product/information described above is considered a trade secret (i.e., confidential business information that provides the business with a competitive advantage):</p> <ol style="list-style-type: none"> 1. What is the nature of the competitive advantage provided by the product/information? 2. How would the competitive advantage be lost by disclosure? (generally describe the value of the product/information and the ease or difficulty with which it may be legitimately acquired or duplicated by others). 	

3. Project-Relevant Pre-Existing Intellectual Property and Project-Relevant Independently Funded Intellectual Property

The Recipient has identified the following items as “project-relevant pre-existing intellectual property” and/or “project-relevant independently funded intellectual property,” as defined in Sections 20 (Pre-Existing and Independently Funded Intellectual Property) and 25 (Definitions) of these terms and conditions. The Commission makes no ownership, license, or royalty claims to this property, and may only access it for the purposes described in Section 20.

Name/Title of Intellectual Property	Aquifer Recharge Valve and Method
Type of Intellectual Property	<input checked="" type="checkbox"/> Project-relevant pre-existing intellectual property <input checked="" type="checkbox"/> Project-relevant independently funded intellectual property <input type="checkbox"/> Invention <input type="checkbox"/> Process <input type="checkbox"/> Technology <input type="checkbox"/> Technique <input checked="" type="checkbox"/> Design <input type="checkbox"/> Work of Authorship <input type="checkbox"/> Drawing <input type="checkbox"/> Trademark/ Service mark <input type="checkbox"/> Data <input type="checkbox"/> Logo <input type="checkbox"/> Software <input type="checkbox"/> Formula
Registered or Pending Intellectual Property (i.e., copyrights, patents, or trademarks that are registered or pending with the U.S. Copyright Office or the U.S. Patent and Trademark Office)	<input type="checkbox"/> Copyright <input checked="" type="checkbox"/> Patent <input type="checkbox"/> Trademark/ Service mark Name of owner: 3RValve Number and date: US 6811353 B2 11/02/2004 <hr/> <i>For pending applications</i> Name of applicant: N/A Application number and date: N/A
Unregistered Intellectual Property	<input type="checkbox"/> Copyright <input type="checkbox"/> Trademark/ Service mark <input type="checkbox"/> Trade Secret Name of owner: N/A
Description of how the property will be or has been used to support a premise, postulate, or conclusion referred to or expressed in any product under the Agreement	Under the project scope for agreement EPC-19-058, one existing well at test site will be retrofitted with a 3R flow control valve. The installation of the 3R valve will enable the existing well to demonstrate Aquifer Pumped Hydro (APH) technology. As water is injected into the well hole, the well motor will run in reverse as a generator. Acting as an energy storage facility, the well can discharge for 25 hours or longer, and provide a minimum of 50 kilowatts of energy.

**EXHIBIT D
Contact List**

California Energy Commission	Recipient
<p>Commission Agreement Manager:</p> <p>Joseph Sit California Energy Commission 1516 Ninth Street, MS-51 Sacramento, CA 95814 Phone: (916) 327-1315 Fax: (916) 327-1717 e-mail: joseph.sit@energy.ca.gov</p>	<p>Project Manager:</p> <p>Mark Beuhler Antelope Valley Water Storage, LLC 1672 W Avenue J, Suite 207 Lancaster, CA 93534 Phone: (323) 860-4829 Fax: (661) 945-4554 e-mail: mbeuhler@wswaterbank.com</p>
<p>Confidential Deliverables/Products</p> <p>California Energy Commission Contracts, Grants, and Loans Officer 1516 Ninth Street, MS-18 Sacramento, CA 95814 Phone: (916) 654-4381 Fax: (916) 654-4423</p>	<p>Administrator:</p> <p>Tommy Ta Antelope Valley Water Storage, LLC 1672 W Avenue J, Suite 207 Lancaster, CA 93534 Phone: (323) 860-9523 Fax: (661) 945-4554 e-mail: tta@cimgroup.com</p>
<p>Invoices, Progress Reports and Non-Confidential Deliverables to:</p> <p>California Energy Commission Accounting Officer 1516 Ninth Street, MS-2 Sacramento, CA 95814</p>	<p>Accounting Officer:</p> <p>Kevin Yang Antelope Valley Water Storage, LLC 4700 Wilshire Boulevard Los Angeles, CA 90010 Phone: (323) 860-1708 Fax: (323) 860-4901 e-mail: kyang@cimgroup.com</p>
<p>Legal Notices:</p> <p>Tatyana Yakshina Grants Manager 1516 9th Street, MS-18 Sacramento, CA 95814 Phone: (916) 654-4204 Fax: (916) 654-4423 e-mail: tatyana.yakshina@energy.ca.gov</p>	<p>Legal Notices:</p> <p>Sahil Amin Antelope Valley Water Storage, LLC 4700 Wilshire Boulevard Los Angeles, CA 90010 Phone: (323) 860-7483 Fax: (323) 860-4901 e-mail: samin@cimgroup.com</p>