



**California Energy Commission
June 22, 2026 Business Meeting
Backup Materials for Aspen Environmental Group (Aspen)**

The following backup materials for the above-referenced agenda item are available in this PDF packet as listed below:

1. Proposed Resolution
2. Contract Request Form
3. Scope of Work

CALIFORNIA ENERGY COMMISSION

PROPOSED RESOLUTION: Aspen Environmental Group (Aspen)

RESOLUTION NO: 26-0622-XX

RESOLVED, that the State Energy Resources Conservation and Development Commission (CEC) adopts the staff CEQA findings contained in the Agreement or Amendment Request Form (as applicable); and

RESOLVED, that the CEC approves Agreement 300-25-009 with Aspen, for a contract of up to \$694,642. Aspen will assist the CEC in identifying, validating, and stress-testing revenue pathways and financing structures that can support the deployment of long-duration energy storage technologies that provide approximately 8 to 12 hours and longer durations of service to the California grid; and

FURTHER BE IT RESOLVED, that the Executive Director or their designee shall execute the same on behalf of the CEC.

APPROVED AND ADOPTED this 22 day of June 2026, by the following vote:

AYE:

NAY:

ABSENT:

ABSTAIN:

CERTIFICATION

The undersigned Secretariat to the CEC does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly approved and adopted by affirmative vote of the CEC at a meeting held on June 22, 2026.

Kim Todd
Secretariat



CONTRACT REQUEST FORM (CRF)

A. New Agreement Number

IMPORTANT: New Agreement # to be completed by Contracts, Grants, and Loans Office.

New Agreement Number: 300-25-009

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Mike Gravely
3. MS-51
4. Phone Number: 916-704-4339

C. Contractor's Information

1. Contractor's Legal Name: Aspen Environmental Group

D. Title of Project

Title of project: Assessing New Electricity Rate Structures to Support LDES systems that operate for 8 to 12 hours and longer.

E. Term and Amount

1. Start Date: 6/30/2026
2. End Date: 3/31/2028
3. Amount: \$694,642

F. Business Meeting Information

1. Operational agreement to be approved by Executive Director? No
2. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
3. The Proposed Business Meeting Date: 6/22/2026
4. Consent or Discussion? Consent
5. Business Meeting Presenter Name: Mike Gravely
6. Time Needed for Business Meeting: N/A
7. The email subscription topic is: Long Duration Energy Storage (LDES).

Project Description:

Aspen Environmental Group (Aspen). Proposed resolution approving agreement 300-25-009 with Aspen, for a contract of up to \$694,642, and adopting staff's recommendation that this action is exempt from CEQA. Aspen will assist the California Energy Commission in identifying, validating, and stress-testing revenue pathways and financing structures that can support the deployment of long-duration energy storage technologies that provide approximately 8 to 12 hours and longer durations of service to the California grid.

G. California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?

Yes

If yes, skip to question 2.

If no, complete the following (PRC 21065 and 14 CCR 15378) and explain why Agreement is not considered a "Project":



Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because: If Agreement is considered a "Project" under CEQA skip to question 2. Otherwise, provide explanation.

2. If Agreement is considered a "Project" under CEQA answer the following questions.

a) Agreement **IS** exempt?

Yes

Statutory Exemption?

No

If yes, list PRC and/or CCR section number(s) and separate each with a comma. If no, enter "None" and go to the next question.

PRC section number: None

CCR section number: None

Categorical Exemption?

Yes

If yes, list CCR section number(s) and separate each with a comma. If no, enter "None" and go to the next question.

CCR section number: Cal. Code Regs., tit. 14, § 15306 ;

California Code of Regulations, tit. 14, sec. 15306 provides that projects which consist of basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource are categorically exempt from CEQA. The project will include reviewing the active energy storage rate structures that are used today in California's grid management system such as: resource adequacy, spinning reserve, frequency response and other state revenue opportunities for energy storage systems to be paid for their services. Since most of these opportunities are designed for energy storage durations of four hours or less, this research will assess how long duration energy storage systems that provide energy storage durations of 8-12 hours or longer can optimize their revenue potential using the existing suite of options. This data will be collected from the California utilities, CCAs, CPUC, CAISO and other entities knowledgeable on how the system currently works. Next the research team will assess how these existing revenue options could be modified to maximize the use of longer duration energy storage systems and demonstrate how these new longer energy storage duration options could provide a better value to the state as the grid management system meets all the requirements of SB-100 by 2045. The results of this research will be provided to the CPUC, CAISO and other key utility management entities in reports and documents for them to consider as options on how to cost effectively integrate long duration energy storage into the California grid energy management system. This work will not result in a serious or major disturbance to an environmental resource. For this reason, the proposed project will not have a significant effect on the environment and is categorically exempt from CEQA under California Code of Regulations, tit. 14, sec.15306.

The project does not involve impacts on any particularly sensitive environment; will not impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies; does not involve any cumulative impacts of successive projects of the same type in the same place that might be considered significant;



does not involve unusual circumstances that might have a significant effect on the environment; will not result in damage to scenic resources within a highway officially designated as a state scenic highway; the project site is not included on any list compiled pursuant to Government Code section 65962.5; and the project will not cause a substantial adverse change in the significance of a historical resource. Therefore, none of the exceptions to categorical exemptions listed in CEQA Guidelines section 15300.2 apply to this project, and this project will not have a significant effect on the environment.

Common Sense Exemption? 14 CCR 15061 (b) (3)

No

If yes, explain reason why Agreement is exempt under the above section. If no, enter "Not applicable" and go to the next section.

b) Agreement **IS NOT** exempt.

IMPORTANT: consult with the legal office to determine next steps.No.

If yes, answer yes or no to all that applies. If no, list all as "no" and "None" as "yes".

Additional Documents	Applies
Initial Study	No
Negative Declaration	No
Mitigated Negative Declaration	No
Environmental Impact Report	No
Statement of Overriding Considerations	No
None	Yes

H. Is this project considered "Infrastructure"?

No

I. Subcontractors

List all Subcontractors listed in the Budget (s). Insert additional rows if needed. If no subcontractors to report, enter "No subcontractors to report" and "0" to funds. **Delete** any unused rows from the table.

Subcontractor Legal Company Name	Budget
Michael Firenze Inc	\$ 592,625

J. Key Partners

List all key partner(s). Insert additional rows if needed. If no key partners to report, enter "No key partners to report." **Delete** any unused rows from the table.

Key Partner Legal Company Name
No key partners to report



K. Budget Information

Include all budget information. Insert additional rows if needed. If no budget information to report, enter "N/A" for "Not Applicable" and "0" to Amount. **Delete** any unused rows from the table.

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
GGRF	23-24	303.201	\$694,642

TOTAL Amount: \$694,642

R&D Program Area: ESTB: ETSI

Explanation for "Other" selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #: Not applicable

L. Contractor's Contact Information

1. Contractor's Administrator/Officer

Name: Neda Rastegar

Address: 5020 Chesebro Rd Ste 200

City, State, Zip: Agoura Hills, CA 91301-2285

Phone: 818-338-6739

E-Mail: nrastegar@aspeneg.com

2. Contractor's Project Manager

Name: Tom Murphy

Address: 8801 Folsom Blvd Ste 275

City, State, Zip: Sacramento, CA 95826-3250

Phone: 916-379-0350

E-Mail: tmurphy@aspeneg.com



M. Selection Process Used

There are three types of selection process. List the one used for this CRF.

Selection Process	Additional Information
Competitive Solicitation #	Not applicable
Non Competitive Bid (<i>Attach DGS-GSPD-09-007</i> https://www.dgs.ca.gov/PD/Forms)	Not applicable
Exempt	This is a direct contract for a LDES project. The LDES program permits noncompetitive awards under Public Resources Code section 25643(d)(3). Here, the contractor’s services are unique, and a competitive solicitation would frustrate the obtainment of necessary services in a timely manner, and it is in the best interest of the state to do so.

N. Contractor Entity Type

Contractor Entity Type	Yes or No?
Private Company (<i>including non-profits</i>)	Yes
CA State Agency (<i>including UC and CSU</i>)	No
Government Entity (<i>i.e. city, county, federal government, air/water/school district, joint power authorities, university from another state</i>)	No

O. Is Contractor a certified Small Business (SB), Micro Business (MB) or Disabled Veterans Business Enterprise (DVBE)?

The contractor is not a certified Small Business.

P. Civil Service Considerations

- a. Not Applicable (Agreement is with a CA State Entity or a membership/co-sponsorship)? Yes
- b. Public Resources Code 25620, et seq., authorizes the Commission to contract for the subject work. (PIER) No
- c. The Services Contracted: No.

If no, go to the next question. If yes, which of the following applies to the contract? More than one can apply, list each answer choice, and separate them with a comma:

- are not available within civil service cannot be performed satisfactorily by civil service employee
- are of such a highly specialized or technical nature that the expert knowledge, expertise, and ability are not available through the civil service system



The following applies to the contract: Not applicable.

- d. The Services are of such an urgent, temporary, or occasional nature that the delay to implement under civil service would frustrate their very purpose?

Not applicable.

Justification:

Not applicable.

Q. Payment Method

1. Is the payment method Reimbursement, Advanced Payment, or Other?

Reimbursement.

If Other, explain: Not applicable.

2. If Reimbursement, is it in arrears based on Itemized Monthly, Itemized Quarterly, Flat Rate, or One-time?

Itemized Monthly.

R. Retention

Is Agreement subject to retention? Yes.

If Yes, Will retention be released prior to Agreement termination? Yes

S. Justification of Rates

Rate structure based on previous approved CEC EPIC and LDES grants and contracts with a reasonable annual cost of inflation adjustment for rates over two years old.

T. Disabled Veteran Business Enterprise Program (DVBE)

Provide requested additional information.

1. Exempt (Interagency/Other Government Entity) No.
2. Meets DVBE Requirements DVBE No
Amount: \$ 0 DVBE %:
3. Is the Contractor Certified DVBE or Subcontracting with a DVBE? If subcontracting with a DVBE, provide the name of the DVBE company. If none applies, enter "Not Applicable".
No
4. Contractor selected through CMAS or MSA with no DVBE participation No.
5. Requesting DVBE Exemption (attach CEC 95) No.

U. Miscellaneous Agreement Information

1. Will there be Work Authorizations? No.
2. Is the contractor providing confidential information? No.
3. Is the contractor going to purchase equipment? No.
4. What is the check frequency of the progress reports? Monthly, Quarterly, or Other? If Other, please provide explanation.

Monthly

5. Will a final report be required? Yes.
6. Is the Agreement, with amendments, longer than three years? If yes, why?

Yes. The Department of General Services has agreed to give the Commission blanket authority to execute multi-year contracts to support the Commission's RD&D Programs.



V. The following items should be attached to this CRF (as applicable)

List all items that should be attached to this CRF by entering “Yes” or “No”.

Item Number	Item Name	Attached
1	Exhibit A, Scope of Work/Schedule	Yes
2	Exhibit B, Budget Detail	Yes
3	DGS-GSPD-09-007, NCB Request	No
4	CEC 95, DVBE Exemption Request	No
5	Awardee CEQA Documentation	No
6	Resumes	Yes
7	CEC 105, Questionnaire for Identifying Conflicts	Yes

Approved By

Individuals who approve this form must enter their full name and approval date in the MS Word version.

Agreement Manager: Mike Gravely

Approval Date: 3/20/2026

Office Manager: Cody Taylor

Approval Date: 5/15/2026

Deputy Director: Cody Taylor for Jonah Steinbuck

Approval Date: 5/15/2026

**Exhibit A
Scope of Work
Aspen Environmental Group**

I. TASK ACRONYM/TERM LISTS

TASK LIST

Task #	CPR	Task Name
1		General Project Tasks
2	X	Identifying and Validating Revenue Streams Available to Support LDES Projects
3		Defining Why Existing Revenue Structures and Financial Instruments Do Not Adequately Support 8-12-Hour and Longer Duration LDES Projects
4	X	Developing and Vetting Market-Based Financing Approaches to Mobilize Private Investment in LDES Projects

ACRONYMS/GLOSSARY

Specific acronyms and terms used throughout this scope of work are defined as follows:

Acronym	Definition
CAM	Commission Agreement Manager
CAISO	California Independent System Operator
CCA	Community Choice Aggregator
CEC	California Energy Commission
Contractor	Aspen Environmental Group
CPUC	California Public Utilities Commission
LDES	Long Duration Energy Storage

II. PURPOSE OF AGREEMENT, PROBLEM/SOLUTION STATEMENT, AND GOALS AND OBJECTIVES

A. Purpose of Agreement

The purpose of this contract is for Aspen Environmental Group (the Contractor) to assist the California Energy Commission (CEC) in identifying, validating, and stress-testing revenue pathways and financing structures that can support the deployment of long-duration energy storage technologies that provide approximately 8 to 12 hours and longer durations of service to the California grid.

The work under this Agreement shall emphasize activities that require direct market engagement, stakeholder convening, and California-specific design refinement.

The project shall focus on determining which revenue streams are realistically available to Long Duration Energy Storage (LDES) projects, which of those revenue streams are viewed by market participants as durable and financeable, and how those revenue streams can be leveraged through public-support mechanisms to finance projects and bring in private capital.

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B. Problem / Solution Statement

High upfront capital costs, technology and performance perceptions, and uncertain revenue streams continue to deter private investment in LDES projects. Many of the currently envisioned LDES technologies have life expectancies of 20-30 years and to be a viable project, must have the ability to obtain revenue for the duration of that timeframe. Publicly available sources can identify potential revenue streams or precedent programs at a high level, but they do not reveal which structures are actually regarded as bankable by off-takers, lenders, investors, insurers, and developers, nor what contract terms and risk allocations are needed to convert theoretical value into financeable cash flow. When the Legislature approved the over \$250M in funding for the CEC to demonstrate emerging LDES technologies, the CEC was able to successfully develop projects that can successfully demonstrate the full technical capabilities of these LDES technologies, however since all these systems provide energy durations over 4 hours, they are currently not able to fully capture their full revenue potential, and the CEC is still evaluating the full financial options available to them.

This project seeks to fill this gap by convening project developers, utilities and Community Choice Aggregators (CCAs), California Independent System Operator (CAISO), investors, lenders, insurers, and other stakeholders that have direct experience with short duration (four hours and less) and LDES project development, contracting, and financing. Their input is needed to determine which revenue opportunities are real and durable enough to support financing, and what barriers still prevent private capital from participating due to the current uncertainty of these revenue streams.

To stretch public funding by stimulating private investment, the CEC may explore new approaches to support LDES projects. The U.S. Department of Energy's loan guarantee program and the United Kingdom's cap and floor scheme are some examples. For example, the CEC could explore a revenue-floor or insurance-style structure to support a limited set of projects, where public funding is only deployed if project revenues fall below an agreed threshold—rather than providing upfront grants.

There may be other financial structures that could achieve a similar multiplier effect for public funds in California. Significant California-specific analysis and stakeholder vetting are needed to determine which structures would be workable in practice and how they should be designed.

C. Goals and Objectives of the Agreement

The goal of this Agreement is to produce stakeholder-vetted recommendations and pilot concepts that identify how California LDES projects can monetize available revenue streams and how public funding can leverage those revenue streams to finance projects and mobilize private capital.

The objectives of this Agreement are to determine:

- Which current and emerging revenue streams are available to California LDES projects and which of those streams are viewed by off-takers, lenders, investors, insurers, and developers as financeable in practice.
- What contract terms, counterparties, credit enhancements, and risk-allocation features are needed to convert those revenue streams into financeable cash flows for LDES projects with 8 to 12 hours and longer times of duration as well as multi-day LDES projects.
- What market-based approaches could bring in private investment and create a multiplier effect for CEC program dollars, including revenue-floor or insurance-style mechanisms and other credit-enhancement or risk-sharing structures. What California-specific pilot design elements, implementation steps, and

**Exhibit A
Scope of Work
Aspen Environmental Group**

additional legal or policy questions should be considered before the CEC advances any such market-based approach. Additionality is important to determine how these new revenue ideas can be integrated into the California Public Utilities Commission (CPUC) and CAISO market structures.

III. TASK 1: GENERAL PROJECT TASKS

Task 1 (General Project Tasks), including administrative requirements, deliverable procedures, meetings, progress reports, TAC provisions, and final report requirements, shall remain substantially as set forth in the baseline Exhibit A, subject to conforming edits needed to reflect the revised task titles, deliverables, and schedule.

DELIVERABLES

Subtask 1.1 Deliverables

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

The Contractor shall:

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

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

For deliverables that require a final version only

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

For all deliverables

- Submit all data and documents required as deliverables in accordance with the following:

Exhibit A
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Aspen Environmental Group

Instructions for Submitting Electronic Files and Developing Software:

○ **Electronic File Format**

Submit all data and documents required as deliverables under this Agreement in an electronic file format that is fully editable and compatible with the CEC'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 CEC as deliverables under this Agreement, and establishes the software versions that will be required to review and approve all software deliverables:

- 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 Contractor 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 CEC's Information Technology Services Branch to determine whether the exceptions are allowable.

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.

Exhibit A
Scope of Work
Aspen Environmental Group

The Contractor shall:

- Attend a “Kick-off” meeting with the CAM, the Commission Agreement Officer (CAO), and any other CEC staff relevant to the Agreement. The Contractor 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;
- Deliverables (subtask 1.1);
- CPR meetings (subtask 1.3);
- 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;
 - Deliverables (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 Schedule of Deliverables, 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 Contractor a Kick-off Meeting Agenda.

Contractor Deliverables:

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

CAM Deliverable:

- Kick-off Meeting Agenda

Exhibit A
Scope of Work
Aspen Environmental Group

Subtask 1.3 Critical Project Review (CPR) Meetings

The goal of this subtask is to determine if the project should continue to receive CEC funding, and if so whether any modifications must be made to the tasks, deliverables, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the CEC and the Contractor. 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 Contractor, and may include the CAISO and any other individuals selected by the CAM to provide support to the CEC.

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 Contractor, but the overall Agreement amount will not increase. CPR meetings generally take place at the CEC, but they may take place at another location, or may be conducted via electronic conferencing (e.g., WebEx) as determined by the CAM.

The Contractor 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 Deliverables* 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 deliverables 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 Contractor's input.
- Send the Contractor 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 Contractor 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, deliverables, 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 Contractor with a *Progress Determination* on continuation of the project, in accordance with the schedule. The Progress Determination may include a requirement that the Contractor revise one or more deliverables.

Contractor Deliverables:

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

Exhibit A
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CAM Deliverables:

- 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 Contractor shall:

- Meet with CEC 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 Contractor 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 CEC's interest in patented technology.
 - The CEC's request for specific "generated" data (not already provided in Agreement deliverables).
 - Need to document the Contractor's disclosure of "subject inventions" developed under the Agreement.
 - "Surviving" Agreement provisions such as repayment provisions and confidential deliverables.
 - Final invoicing and release of retention.
 - Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Contractor and Commission staff during the meeting.
 - Prepare a *Schedule for Completing Agreement Closeout Activities*.
 - Provide *All Draft and Final Written Deliverables* on a CD-ROM or USB memory stick, organized by the tasks in the Agreement.

Deliverables:

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

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Aspen Environmental Group**

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.

The Contractor 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, deliverables, 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.

Deliverables:

- 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 Contractor must use the CEC Style Manual provided by the CAM.

Subtask 1.6.1 Final Report Outline

The Contractor shall:

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

Contractor Deliverables:

- Final Report Outline (draft and final)

CAM Deliverables:

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

Exhibit A
Scope of Work
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Subtask 1.6.2 Final Report

The Contractor shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, CEC 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)
 - 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 Contractor on the draft deliverable within 15 days of receipt.
- Consider incorporating all CAM comments into the Final Report. If the Contractor disagrees with any comment, provide a written response explaining why the comment was not incorporated into the final deliverable.
- 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*.

Deliverables:

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

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CAM Deliverable:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtasks 1.7-1.8 are not applicable on this Contract.

Subtask 1.9 Subcontracts (to be included *only if needed to comply with the Contract*)

The goals of this subtask are (if needed) 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 Contractor 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 CEC 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).

Deliverables:

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

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.

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- Review deliverables and provide recommendations for needed deliverable 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 deliverables.

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 (e.g., NYSERDA) relevant to the project.
- Public interest environmental groups;
- Utility representatives;
- Air district staff; and
- Members of relevant technical society committees.

The Contractor 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 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.

Deliverables:

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

Subtask 1.9 Subcontracts (to be included *only if needed to comply with the Contract*)

The goals of this subtask are (if needed) 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.

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The Contractor 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 CEC 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).

Deliverables:

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

TECHNICAL ADVISORY COMMITTEE

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 Contractor 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.

Deliverables:

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

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IV. TECHNICAL TASKS

TASK 2: IDENTIFYING AND VALIDATING REVENUE STREAMS AVAILABLE TO SUPPORT LDES PROJECTS

The goal of this task is to: (1) identify the revenue streams currently and potentially available to California LDES projects; and (2) determine, through direct stakeholder engagement, which revenue streams are considered durable and financeable enough to support project financing and propose recommendations on how these revenue opportunities can be integrated into the CPUC and CAISO operations.

The Contractor shall:

- Work with the CAM to develop a stakeholder map and prioritized *List of Proposed Organizations and Individuals to Be Contracted* and to engage (e.g. utilities, CCAs, CAISO, developers, investors, lenders, insurers, advisors, and other relevant market participants).
- Prepare a *Stakeholder Engagement Plan* in consultation with the CAM that potentially includes interview protocols, key questions, proposed working sessions, and an approach for handling confidential or commercially sensitive information.
- Conduct stakeholder engagement (e.g. through structured interviews and, as appropriate, small working sessions) with selected stakeholders to understand how LDES projects are or could be financed, what revenue streams are available, and what contractual or market conditions are required for those revenue streams to be monetized.
- Prepare a *Revenue Streams and Bankability Summary Memorandum* identifying the principal revenue streams available to LDES projects and the conditions under which those revenue streams may be considered bankable or financeable.
- Provide routine meetings and briefings to CEC LDES staff on information gained and how that information will be used to meet the goals and objectives of this Agreement, including updates through Monthly Progress Reports under Subtask 1.5.
- Prepare a CPR Report #1 in accordance with Subtask 1.3 (CPR Meetings). Stakeholder Engagement Plan and List of Proposed Organizations and Individuals to Be Contacted
- Participate in a CPR meeting.

Deliverables:

- List of Proposed Organizations and Individuals to Be Contacted and Stakeholder Engagement Plan
- Revenue Streams and Bankability Summary Memorandum
- CPR Report #1

TASK 3: DEFINING WHY EXISTING REVENUE STRUCTURES AND FINANCIAL INSTRUMENTS DO NOT ADEQUATELY SUPPORT 8-12-HOUR AND LONGER DURATION LDES PROJECTS

The goal of this task is to: (1) develop a clear and stakeholder-informed statement of the extent to which current revenue structures and financial instruments do not adequately support LDES projects in the 8 to 12 hour and longer in duration range; and (2) identify the commercial conditions that would need to change for those projects to become financeable.

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The Contractor shall:

- Work with the CAM to develop a report, drawing on stakeholder input, addressing the reasons why existing revenue structures and financial instruments do not adequately compensate LDES projects leveraging intra-day as well as multi-day storage technologies, and the changes needed to address these shortcomings. Prepare a *Financing Barriers and Required Conditions Memorandum*.
- Identify the key barriers identified by stakeholders to monetizing multiple value streams.
- Work with CEC LDES Program grantees to identify the project capabilities and commercial requirements that must be reflected in future financing or contracting approaches in order to support long-term project viability.
- Conduct at least one validation session or workshop with selected stakeholders to test draft findings and refine the statement of barriers and required conditions.
- Schedule routine meetings with the CEC LDES Staff to update them on progress, new issues identified and proposed next steps to meet the goals of this task.
- Provide a *Project Status Summary Document* for CEC LDES Staff on information learned and next steps needed to meet the goals of this task.

Deliverables:

- Financing Barriers and Required Conditions Memorandum
- Project Status Summary Document

TASK 4: DEVELOPING AND VETTING MARKET-BASED FINANCING APPROACHES TO MOBILIZE PRIVATE INVESTMENT IN LDES PROJECTS

The goal of this task is to develop a limited number of financing approaches that could improve the finance ability of LDES projects, stimulate private investment, and create a multiplier effect for public funding for LDES in California.

The Contractor shall:

- Using the information learned in Tasks 2 and 3, develop a short list of candidate approaches such as a revenue-floor or insurance-style mechanism, upside-sharing or phased grant repayment arrangements, guarantees, reserve or first-loss structures, and other credit-enhancement or risk-sharing approaches to stretch public funding for LDES in California to improve the finance ability of LDES projects
- Vet the candidate structures with key stakeholder groups such as utilities, CCAs, CPUC, CAISO as appropriate, developers, lenders, investors, insurers, and other affected entities, and document the conditions under which those structures would be workable in practice.
- Conduct a targeted baseline review of selected precedent programs, including programs analogous to federal credit support mechanisms or market-based approaches used in other jurisdictions. Prepare a *Market-Based Approaches for LDES in California Report*.
- Develop one or more California pilot concepts, including proposed eligibility criteria, key commercial terms, administration approach, monitoring and verification considerations, repayment or revenue-sharing terms where applicable, and roles and responsibilities for participating entities.
- Prepare a *Roadmap for private capital mobilization* that identifies next steps, data needs, prospective partners, and issues for further legal, regulatory, or policy review.
- Prepare a report on how expanding the use of LDES in California will result in improved GGRF benefits (as defined by the GGRF program) and help California meet the goals of SB-100.

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- Prepare a CPR Report #2 in accordance with Subtask 1.3 (CPR Meetings).
- Participate in a CPR meeting.

Deliverables:

- Market-Based Approaches for LDES in California Report
- Roadmap for private capital mobilization
- Report on the value of LDES in meeting identified GGRF benefits.
- CPR Report #2

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.