California Energy Commission
September 10, 2025 Business Meeting
Backup Materials for Electrochemistry Foundry, Inc.

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

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

[PROPOSED]

RESOLUTION NO: 25-0910-06

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: Electrochemistry Foundry, Inc.

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 EPC-25-011 with Electrochemistry Foundry, Inc. for a $28,000,000 grant. This project will launch and operate a shared-use, nonprofit battery pilot manufacturing facility in Hayward to provide critical infrastructure to accelerate the commercialization of next-generation battery and battery component technologies and advance inclusive workforce development across the clean energy sector; and

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

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 adopted at a meeting of the CEC held on September 10, 2025.

AYE:
NAY:
ABSENT:
ABSTAIN:

Dated:

_____
Kim Todd
Secretariat

STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

CEC-270 (Revised 01/2024)

GRANT REQUEST FORM (GRF)

A. New Agreement Number

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

New Agreement Number: EPC-25-011

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Joshua Croft
3. MS-:51
4. Phone Number: 925-452-7638

C. Recipient's Information

1. Recipient's Legal Name: Electrochemistry Foundry, Inc.
2. Federal ID Number: 33-1527614

D. Title of Project

Title of project: The Electrochemistry Foundry: A Catalyst for the Battery Ecosystem

E. Term and Amount

1. Start Date: 9/15/2025
2. End Date: 3/31/2029
3. Amount: $28,000,000.00

F. Business Meeting Information

1. Are the ARFVTP agreements $75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 9/10/2025.
3. Consent or Discussion? Discussion
4. Business Meeting Presenter Name: Phillip Healy
5. Time Needed for Business Meeting: 10 minutes.
6. The email subscription topic is: Electric Program Investment Charge (EPIC)

Agenda Item Subject and Description:
ELECTROCHEMISTRY FOUNDRY, INC. Proposed resolution approving agreement EPC-25-011 with Electrochemistry Foundry, Inc. for a $28,000,000 grant, and adopting staff's recommendation that this project is exempt from CEQA. This project will launch and operate a shared-use, nonprofit battery pilot manufacturing facility in Hayward to provide critical infrastructure to accelerate the commercialization of next-generation battery and battery component technologies and advance inclusive workforce development across the clean energy sector. (EPIC funding) Contact: Phillip Healy

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":

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

a) Agreement **IS** exempt?

Yes

Statutory Exemption?
None.
PRC section number:

CCR section number: CCR section number 1, CCR section number 2. Or, 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; Cal. Code Regs., tit 14, § 15303

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.

Under agreement EPC-25-011, the CEC would provide a $28 million grant to Electrochemistry Foundry, Inc. (ECF) to launch and operate a shared-use, nonprofit battery pilot manufacturing facility in Hayward. ECF will remodel a portion of a building (about 20,000 sq. ft.) in an Industrial Park zoning area that formerly was used for pharmaceutical manufacturing, and is now vacant. The site is in the General Plan designation of Industrial Corridor. The concept is that ECF will install the basic equipment needed for "pilot" manufacturing of batteries of many different types. The pilot line will accommodate all critical manufacturing stages: electrode coating, cell assembly, electrolyte filling, formation, conditioning, and performance testing.

Entrepreneurs with various battery technologies will pay ECF for the opportunity to build a "pilot" sample of their batteries, in order to advance each technology and its manufacturing process toward commercialization. Outside the building, ECF will replace about 20 paved parking area with a small equipment yard for the Dry Room and (tentatively) an outdoor battery testing enclosure. In this secure outdoor enclosure, located approximately 50 feet from the main building to reduce indoor

hazard risks, batteries will be subjected to safety tests, such as thermal runaway and overcharge events.

ECF represents that it will not treat, store beyond regulatory thresholds, or dispose of hazardous waste onsite. Further, all hazardous waste will be properly accumulated, labeled, and removed by a licensed hauler in accordance with generator requirements. Regarding air quality and emissions, ECF anticipates that the coating operations and abatement systems will require an Authority to Construct (ATC) and subsequent Permit to Operate (PTO). ECF states that even with the removal of some parking stalls, the building will still have sufficient parking to meet City requirements. Finally, the site underwent a Phase I environmental site assessment by Stellar Environmental Services in April 2019, and this did not reveal any Recognized Environmental Conditions (RECs).

In response to ECF's zoning verification inquiry to the City of Hayward, the Hayward Planning Division's Development Services Department staff responded in an August 19, 2025 letter that the proposed use would conform to the zoning. The Planning Division staff consider the described ECF use as "general manufacturing," which means the land use is acceptable "by right" (i.e., no discretionary land use permit or zoning decision needed) in the Industrial Park. Further, the quantities of hazardous materials ECF described would fall under the thresholds which require a Use Permit pursuant to the Hayward Municipal Code.

The primary function of the grant project will be to provide a Battery Pilot Line where entrepreneurs can research improvements to their batteries and research how to manufacture their batteries. Cal. Code Regs., tit. 14, Section 15306 provides that projects which consist of basic data collection, research, experimental management, and resource evaluation activities, and which do not result in a serious or major disturbance to an environmental resource are categorically exempt from the provisions of the California Environmental Quality Act. This project falls within these parameters.

The outdoor battery testing enclosure and the small equipment yard are "small structures" under CEQA regulations. Cal. Code Regs., tit. 14, Section 15303 provides that projects which consist of construction and location of limited numbers of new, small facilities or structures and/or installation of small new equipment and facilities in small structures, are exempt from CEQA. This project falls within these parameters.

This project does not involve impacts on any particularly sensitive environment; 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 sites are 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.

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) (major and minor). 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	CEC Funds	Match Funds
The Regents of the University of California on behalf of the Riverside campus	$ 1,000,000	**$**1,000**,**000
Catalyst Innovation Group LLC	$ 600,300	$0
The Regents of the University of California on behalf of the Santa Barbara campus	$ 358,968	$177,610
Volta Foundation	$ 279,500	$261,017
The Regents of the University of California on behalf of the Berkeley campus	$ 105,664	$105,624
Top Material Corp.	$ 0	$2,793,000

J. Vendors and Sellers for Equipment and Materials/Miscellaneous

List all Vendors and Sellers listed in Budget(s) for Equipment and Materials/Miscellaneous. Insert additional rows if needed. If no vendors or sellers to report, enter "No vendors or sellers to report" and "0" to funds. **Delete** any unused rows from the table.

Vendor/Seller Legal Company Name	CEC Funds	Match Funds
Tarlton Properties	$0	$1,129,464
Top Material Corp.	$8,330,000	$
TBD - Facility construction and renovation	$1,452,500	$0
TLB FIRE PROTECTION ENGINEERING, INC.; Safety and Compliance LLC	$50,000	$0
BenTyler Enterprises, Inc.	$50,000	$0
Veolia ES Technical Solutions, L.L.C.	$50,000	$0
Greg Less (Individual)	$15,000	$0
Cognition Consulting LLC	$95,000	$0
Athena Technology, Inc.	$45,000	$45,000
TBD Insurance	$46,190	$0
Hannah Totte (Individual)	$1,500	$0
TBD Marketing	$10,000	$0
Sylvatex, Inc.	$0	$50,000
Project K Energy, Inc.	$0	$50,000
Liminal Insights, Inc.	$0	$86,200
SirenOpt Inc.	$0	$147,000
Anthro Energy, Inc.	$0	$32,000
Sepion Technologies, Inc.	$0	$100,000
The Regents of the University of California as Management and Operating Contractor for the Ernest Orlando - Lawrence Berkeley National Laboratory	$90,000	$0
Arkema, Inc.	$0	$30,000
Mark Martin (Individual)	$0	$12,000
Valence Law Group, PC	$7,500	$0

K. 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

L. 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
EPIC	24-25	301.001L	$ 28,000,000

TOTAL Amount: $ 28,000,000

R&D Program Area: TIEB: EDMF

Explanation for "Other" selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #:

M. Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Brenna Teigler

Address: 116 Fairwood Ct

City, State, Zip: Danville, CA 94506-4406

Phone: (303) 870-8101

E-Mail: brenna@ecfoundry.org

2. Recipient's Project Manager

Name: Brenna Teigler

Address: 116 Fairwood Ct

City, State, Zip: Danville, CA 94506-4406

Phone: (303) 870-8101

E-Mail: brenna@ecfoundry.org

N. Selection Process Used

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

Selection Process	Additional Information
Competitive Solicitation #	GFO-24-304
First Come First Served Solicitation #	Not applicable
Other	Not applicable

O. Attached Items

1. List all items that should be attached to this GRF 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	CEC 105, Questionnaire for Identifying Conflicts	Yes
4	Recipient Resolution	No.
5	Awardee CEQA Documentation	No.

Approved By

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

Agreement Manager: Joshua Croft

Approval Date: 7/16/2025

Branch Manager: Anthony Ng

Approval Date: 7/23/2025

Director: Jonah Steinbuck *(delegated to Branch Manager)*

Approval Date: n/a

Exhibit A
Scope of Work
Electrochemistry Foundry, Inc.

I. TASK AND ACRONYM/TERM LISTS

A. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2		Facility Build-Out and Readiness
3		Equipment Procurement, Installation and Integration
4		Establish Pilot Line User Base
5		Establish R&D Capabilities
6	X	Operational Ramp-Up to Steady State Operations
7		Build Out Ancillary Services
8		Establish the Infrastructure to Build and Scale Workforce Development Initiatives
9		Develop Curriculum for Students
10		Develop Curriculum for Workers
11		Build Training and Professional Opportunities with Industry
12		Build Sustainable Lithium Supply Chain and Beyond Li-Ion
13		Open-Sourced Knowledge for the Industry
14		Evaluation of Project Benefits
15		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
BWWG	Battery Workforce Working Group
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEC	California Energy Commission
CPR	Critical Project Review
ECF	Electrochemistry Foundry
R&D	Research and Development
SOPs	Standard Operating Procedures
TAC	Technical Advisory Committee
WDB	Workforce Development Board

[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.

Exhibit A
Scope of Work
Electrochemistry Foundry, Inc.

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

A. Purpose of Agreement

The purpose of this Agreement is to fund the launch and operation of a shared-use, nonprofit battery pilot manufacturing facility in California. This facility will provide critical infrastructure to accelerate the commercialization of lithium-ion and next-generation battery technologies while advancing inclusive workforce development across the clean energy sector.

B. Problem/ Solution Statement

Problem

California leads in battery innovation but lacks open-access pilot manufacturing infrastructure to transition technologies from the lab scale to commercialization and adoption. Without access to pilot-scale equipment and technical expertise, startups and researchers face long delays and steep cost barriers that cause many promising battery innovations—especially in underserved sectors like heavy-duty transportation, industrial electrification, and stationary storage—to stall before reaching the market. Companies currently have limited access to overbooked facilities—often located a plane ride away—for initial testing, which significantly slows the pace of iteration. Others attempt to overcome scale-up hurdles by funding their own pilot manufacturing lines, which require immense capital expenditures, substantial engineering expertise, and long timelines—resources often beyond the capabilities and risk tolerance of startups. This gap in the California innovation ecosystem is only growing as battery production involves sophisticated and expensive manufacturing processes not yet found in California.

Solution

By providing open-access, state-of-the-art pilot manufacturing capabilities and expertise alongside comprehensive ecosystem support—including workforce training, corporate partnerships, and company incubation— this shared-user non-profit battery pilot manufacturing facility will serve as a cornerstone for battery innovation. This pilot manufacturing line addresses a critical barrier by bridging the gap between early-stage component innovation and the fully integrated battery cells required by end users. By providing shared, full-service fabrication and testing capabilities, the facility will remove major scale-up hurdles, reduce inefficiencies, and accelerate the commercialization of next-generation battery technologies developed in California. The agreement concurrently develops the people needed to manufacture and test these batteries—advancing both the technology and the talent pipeline.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Establish a pilot battery manufacturing facility in a disadvantaged community in the greater California Bay Area that is capable of producing 10,000 battery cells per year in pouch and cylindrical formats, and of thoroughly testing those cells through performance characterization, battery cycling, abuse testing, and failure mode analysis.

- Build workforce development programs, in collaboration with labor and academic organizations, that benefit the local community and the broader California domestic battery manufacturing ecosystem.

Ratepayer Benefits:[2] This Agreement will result in the ratepayer benefits of greater electricity reliability, lower costs, and increased safety by enabling increased deployment of next-generation Lithium-ion technologies. Reliability will be improved through the development and deployment of advanced in-line quality control tools that help detect and eliminate battery defects early in the manufacturing process. Costs will be reduced by lowering the expense of technology development, especially for emerging non-Lithium chemistries like sodium-ion and potassium-ion, by providing shared pilot manufacturing infrastructure. This access helps companies avoid the need to invest $10 million or more to build their own pilot production lines. Safety will be enhanced by supporting the development of inherently safer batteries, including those using non-flammable electrolytes and non-oxide cathodes. Ultimately, the pilot line will benefit Investor-Owned Utility ratepayers through the increased probability of commercialization and deployment of a portfolio of battery technologies that allows for demand response, peak shaving, grid stabilization, and deferred transmission costs through cheaper and more efficient technology commercialization.

Technological Advancement and Breakthroughs:[3] 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 enabling cost-effective deployment of next-generation storage technologies by supplying critical equipment, expertise, and workforce. By providing shared, full-service fabrication and testing capabilities, the facility will accelerate the time to market for advanced battery technology that is cheaper and has better performance and safety.

Agreement Objectives

The objectives of this Agreement are to:

- Build and commission a shared-use battery pilot manufacturing facility in the greater Bay Area capable of producing 10,000 lithium-ion battery cells per year in both pouch and cylindrical formats at a yield of 60%.
- Maintain battery testing services including formation and electrochemical testing, conductivity testing, hi-pot testing, in-line process monitoring, and overheat, overcharge, and nail penetration testing.
- Reach pilot line utilization of 55% or greater during the period of performance to move toward a self-sustaining operating model.
- Train a minimum of 100 individuals to support the development of a skilled workforce.

[2] 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).

[3] 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.

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).** All products submitted which will be viewed by the public, must comply with the accessibility requirements of Section 508 of the federal Rehabilitation Act of 1973, as amended (29 U.S.C. Sec. 794d), and regulations implementing that act as set forth in Part 1194 of Title 36 of the Federal Code of Regulations**.** All technical tasks should include product(s). 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.

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 California Energy Commission's (CEC) 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.

The following describes the accepted formats for electronic data and documents provided to the CEC 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.
- 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.

The Recipient shall:

- Attend a "Kick-off" meeting with the CAM, and other CEC staff relevant to the Agreement. The Recipient's Project Manager and any other individuals deemed necessary by the CAM or the Project Manager shall participate in 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., Teams, Zoom), with approval of the CAM.

  The Kick-off meeting will include discussion of the following:
  - The CAM's expectations for accomplishing tasks described in the Scope of Work;
  - An updated Project Schedule;
  - Terms and conditions of the Agreement;
  - Invoicing and auditing procedures;
  - Travel;

- Equipment purchases;
- Administrative and Technical products (subtask 1.1);
- CPR meetings (subtask 1.3);
- Monthly Calls (subtask 1.5)
- Quarterly Progress reports (subtask 1.6)
- Final Report (subtask 1.7)
- Match funds (subtask 1.8);
- Permit documentation (subtask 1.9);
- Subawards(subtask 1.10);
- Technical Advisory Committee meetings (subtasks 1.11 and 1.12);
- Agreement changes;
- Performance Evaluations; and
- Any other relevant topics.

- Provide *Kick-off Meeting Presentation* to include but not limited to:
  - Project overview (i.e. project description, goals and objectives, technical tasks, expected benefits, etc.)
  - Project schedule that identifies milestones
  - List of potential risk factors and hurdles, and mitigation strategy

- Provide an *Updated Project Schedule, Match Funds Status Letter,* and *Permit Status Letter*, 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:
- Kick-off Meeting Presentation
- Updated Project Schedule *(if applicable)*
- Match Funds Status Letter (subtask 1.7) *(if applicable)*
- Permit Status Letter (subtask 1.8) *(if applicable)*

CAM Product:
- Kick-off Meeting Agenda

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, products, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the CEC 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 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 may 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 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 Recipient shall:

- Prepare and submit 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.
- 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* with a list of expected CPR participants in advance of the CPR meeting. If applicable, the agenda may 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. A determination of unsatisfactory progress This may result in project delays, including a potential Stop Work Order, while the CEC determines whether the project should continue.
- 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)

CAM Products:

- CPR Agenda(s)
- 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 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 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 of the following Agreement closeout items:
    - Disposition of any procured equipment.
    - The CEC'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 copies of *All Final Products* organized by the tasks in the Agreement.

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

MONTHLY CALLS, REPORTS AND INVOICES

Subtask 1.5 Monthly Calls

The goal of this task is to have calls at least monthly between the CAM and Recipient to verify that satisfactory and continued progress is made towards achieving the objectives of this Agreement on time and within budget.

The objectives of this task are to verbally summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, to verify match funds are being proportionally spent concurrently or in advance of CEC funds or are being spent in accordance with an approved Match Funding Spending Plan, to form the basis for determining whether invoices are consistent with work performed, and to answer any other questions from the CAM. Monthly calls might not be held on those months when a quarterly progress report is submitted or the CAM determines that a monthly call is unnecessary.

The CAM shall:

- Schedule monthly calls.
- Provide questions to the Recipient prior to the monthly call.
- Provide call summary notes to Recipient of items discussed during call.

The Recipient shall:

- Review the questions provided by CAM prior to the monthly call
- Provide verbal answers to the CAM during the call.

Product:

- Email to CAM concurring with call summary notes.

Subtask 1.6 Quarterly 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 Recipient shall:

- Submit a *Quarterly 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 reporting period, 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. Progress reports are due to the CAM the 10th day of each January, April, July, and October. The Quarterly Progress Report template can be found on the ECAMS Resources webpage available at: https://www.energy.ca.gov/media/4691
- Submit a monthly or quarterly *Invoice* on the invoice template(s) provided by the CAM.

Recipient Products:

- Quarterly Progress Reports
- Invoices

CAM Product:

- Invoice template

Subtask 1.7 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. When creating the Final Report Outline and the Final Report, the Recipient must use the CEC Style Manual provided by the CAM.

Subtask 1.7.1 Final Report Outline

The Recipient shall:

- Prepare a *Final Report Outline* in accordance with the *Energy Commission Style Manual* provided by the CAM.

Recipient Products:

- Final Report Outline (draft and final)

CAM Products:

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

Subtask 1.7.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Energy Commission 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)
- Submit a draft of the Executive Summary to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments on Draft Final Report* received on the Executive Summary. For each comment received, the Recipient will identify in the summary the following:
  - Comments the Recipient proposes to incorporate.
  - Comments the Recipient does propose to incorporate and an explanation for why.
- 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.
- Incorporate all CAM comments into the *Final Report*. If the Recipient disagrees with any comment, provide a *Written Responses to Comments* explaining why the comments were not incorporated into the final product.
- Submit the revised *Final Report* electronically with any Written Responses to Comments within 10 days of receipt of CAM's Written Comments on the Draft Final Report, unless the CAM specifies a longer time period or approves a request for additional time.

Products:

- Summary of TAC Comments on Draft Final Report
- Draft Final Report
- Written Responses to Comments *(if applicable)*
- Final Report

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBAWARDS

Subtask 1.8 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. 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 application that led to the CEC 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 application that led to the CEC 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 1.9 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.

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 1.10 Obtain and Execute Subawards and Agreements with Site Hosts
The goals of this subtask are to: (1) procure and execute subrecipients and site host agreements, as applicable, required to carry out the tasks under this Agreement; and (2) ensure that the subrecipients and site host agreements are consistent with the Agreement terms and conditions and the Recipient's own contracting policies and procedures.

The Recipient shall:

- Execute and manage subawards and coordinate subrecipients activities in accordance with the requirements of this Agreement.
- Execute and manage site host agreements and ensure the right to use the project site throughout the term of the Agreement, as applicable. A site host agreement is not required if the Recipient is the site host.
- Notify the CEC in writing immediately, but no later than five calendar days, if there is a reasonable likelihood the project site cannot be acquired or can no longer be used for the project.

- Incorporate this Agreement by reference into each subaward.
- Include any required Energy Commission flow-down provisions in each subaward, in addition to a statement that the terms of this Agreement will prevail if they conflict with the subaward terms.
- Submit a *Subaward and Site Letter* to the CAM describing the subawards and any site host agreement needed or stating that no subawards or site host agreements are required.
- If requested by the CAM, submit a draft of each *Subaward* and any *Site Host Agreement* required to conduct the work under this Agreement.
- If requested by the CAM, submit a final copy of each executed *Subaward* and any *Site Host Agreement*.
- Notify and receive written approval from the CAM prior to adding any new subrecipient (see the terms regarding subrecipient additions in the terms and conditions).

Products:

- Subaward and Site Letter
- Draft Subawards *(if requested by the CAM)*
- Draft Site Host Agreement *(if requested by the CAM)*
- Final Subawards *(if requested by the CAM)*
- Final Site Host Agreement *(if requested by the CAM)*

TECHNICAL ADVISORY COMMITTEE

Subtask 1.11 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.
- 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, to the extent the TAC members feel is appropriate, 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 ensure a long-term perspective on decision-making and progress toward the project's strategic goals.

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 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 1.12.
- 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.

Products:

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

Subtask 1.12 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* for each TAC Meeting 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 ensure a long-term perspective on decision-making and progress toward the project's strategic goals.
- Review and provide comments to proposed project performance metrics.
- Review and provide comments to proposed project Draft Technology Transfer Plan.

Products:

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

Subtask 1.13 Project Performance Metrics

The goal of this subtask is to finalize key performance targets for the project based on feedback from the TAC and report on final results in achieving those targets. The performance targets should be a combination of scientific, engineering, techno-economic, and/or programmatic metrics that provide the most significant indicator of the research or technology's potential success.

The Recipient shall:

- Complete and submit the project performance metrics section of the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task, to the CAM.
- Present the draft project performance metrics at the first TAC meeting to solicit input and comments from the TAC members.
- Develop and submit a *TAC Performance Metrics Summary* that summarizes comments received from the TAC members on the proposed project performance metrics. The *TAC Performance Metrics Summary* will identify:
    - TAC comments the Recipient proposes to incorporate into the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
    - TAC comments the Recipient does not propose to incorporate with and explanation why.

- Develop and submit a *Project Performance Metrics Results* document describing the extent to which the Recipient met each of the performance metrics in the *Final Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
- Discuss the *Project Performance Metrics Results* at the Final Meeting.

Products:

- TAC Performance Metrics Summary
- Project Performance Metrics Results

Exhibit A
Scope of Work
Electrochemistry Foundry, Inc.

IV. TECHNICAL TASKS

*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.* ***Subtask 1.1 (Products)*** *describes the procedure for submitting products to the CAM.*

TASK 2: FACILITY BUILD-OUT AND READINESS

The goal of this task is to design, procure, and construct a fully operational facility for the pilot line. This includes facility design, procurement of construction materials, and the installation of mechanical, electrical, and plumbing (MEP) systems to support manufacturing operations, including the dry room. The task ensures that the facility is prepared to house and operate the pilot line in compliance with safety and regulatory standards.

The Recipient shall:

- Develop and finalize the facility design to accommodate the pilot line operations.
- Procure necessary construction materials and MEP equipment to support the build-out, including the dry room.
- Construct and condition the facility, including the installation of essential utilities and infrastructure.
- Ensure compliance with environmental, health, and safety regulations for facility readiness.
- Prepare a *Facility Readiness Report* that is 10-15 pages, includes graphics and figures, and has an executive summary that is written for a non-technical audience. This report will detail:
    - Overview of facility design and modifications
    - Procurement and installation of key infrastructure elements
    - Compliance with regulatory requirements
    - Readiness assessment for operations

Products:

- Facility Readiness Report

TASK 3: EQUIPMENT PROCUREMENT, INSTALLATION, AND INTEGRATION

The goal of this task is to acquire, install, and integrate the manufacturing equipment necessary for battery production. This includes tool selection, procurement, commissioning, and implementation of production data and quality control systems.

The Recipient shall:

- Finalize the technical requirements and select the optimal tools for the pilot line through a structured engineering and stakeholder alignment process that includes:
    - Process Mapping and Technical Specifications Finalization:
        - Finalize target cell formats, chemistries, and performance metrics.
        - Map process flow from slurry mixing to formation/testing.
        - Document detailed equipment and facility requirements.
    - Vendor Coordination and Equipment Optimization:
        - Review available tooling options and performance specs.
        - Evaluate tradeoffs for cost, footprint, flexibility, and in-line metrology.
    - Stakeholder Input and Future-Proofing:

        - Incorporate feedback from industry partners and academic stakeholders on use cases.
        - Ensure equipment selection supports multiple chemistries and flexibility, while producing high quality cells.
    - Final Review and Procurement Planning:
        - Validate final specs through technical review.
        - Align equipment procurement and installation timeline with construction milestones.
- Select and procure tools and equipment, ensuring alignment with production goals and budget constraints.
- Oversee delivery, installation, and commissioning of equipment at the facility.
- Perform initial operational checks and system calibrations
- Implement production data integration, quality control, and line management systems.
- Establish verification and testing methods to ensure:
    - Proper installation and functionality of equipment
    - Calibration and performance validation against industry standards
    - Data integrity and process monitoring capabilities
- Complete installation and validate the site acceptance testing.
- Develop an *Equipment Integration Report* that is 20-30 pages, includes graphics and figures, and has an executive summary that is written for a non-technical audience. This report will detail:
    - Summary of selected equipment, specifications, and intended function
    - Installation and commissioning results
    - Quality control measures and system implementation
    - Identification of any technical challenges and mitigation strategies

Products:

- Equipment Integration Report

TASK 4: ESTABLISH PILOT LINE USER BASE

The goals of this task are to prepare for pilot line users by building the infrastructure (e.g., services, tools and systems, documentation) for them to access the capabilities, and to recruit users.

The Recipient shall:

- Develop *User Agreement* which will govern the relationship between a facility user and the pilot line facility. Elements of the User Agreement shall include, but are not limited to:
    - Technical services provided by the pilot line, including but not limited to:
        - Anode electrode production
        - Cathode electrode production
        - Pouch cell assembly
        - Cylindrical cell assembly
        - Test services (electrical cycling, safety, analytical)
    - Technical consulting to support the above
    - Intellectual property rights and safeguards for facility users
    - Different user models (e.g., user, member) and the expectations of each, including but not limited to:
        - Pricing models
        - Operational models (e.g., user access vs. contract manufacturing)

    - Consequences for users who breach the user agreement
- Prepare for pilot line users:
    - Implement and maintain any needed physical privacy and confidentiality infrastructure
    - Develop data privacy and security infrastructure, including but not limited to:
        - Tools and systems for segregating and sharing user data (e.g., manufacturing, cell cycling, cell testing accessed)
        - Standard operating procedures (SOPs) for data management
- Publicize pilot line services and pursue business development with customers to establish a sustainable user base through channels including, but not limited to:
    - Speaking engagements
    - Channel partners
    - Advisors
    - Leveraging social media and industry forums such as LinkedIn and X
- Prepare a *Battery Line Outreach and Engagement Report* that is 10-15 pages, includes graphics and figures, and has an executive summary that is written for a non-technical audience. This report will detail:
    - Specific tactics used to reach users
    - Estimation of the effectiveness of each tactic

Products:
- User Agreement
- Battery Line Outreach and Engagement Report

TASK 5: ESTABLISH R&D CAPABILITIES
The goal of this task is to develop and validate Research and Development (R&D) capabilities at the pilot line to support academic and early-stage startup users that have not yet scaled up their material production and technology maturity to a level sufficient to leverage the core capabilities of the pilot line.

The Recipient shall:
- Install and commission R&D-scale materials processing and electrode fabrication equipment including, but not limited to:
    - Slurry mixing, benchtop coating, drying, and calendering equipment
- Develop protocols/recipes for baseline materials
- Validate pilot line-produced electrode quality with basic cycling repeatability experiments
- Install and commission R&D-scale pouch cell fabrication equipment including, but not limited to:
    - Electrode notching, cell stacking/winding, welding, pouch sealing and filling
- Develop baseline protocols for building coin and multi-layer R&D pouch cells
- Validate cell quality with basic cycling repeatability experiments
- Install and commission R&D test equipment for electrodes and cells including, but not limited to:
    - Analytical equipment: viscometer, thickness probe, optical microscope, conductometer, Karl Fischer titrator, coin cell cyclers and temperature chambers, low-power pouch cell cyclers and temperature chambers
- Prepare an *R&D Capabilities Report* that is 10-15 pages, includes graphics and figures, and has an executive summary that is written for a non-technical audience. This report will detail:

- Installed equipment for R&D-scale work
- Protocols/recipes for R&D-scale materials processing, electrode fabrication, cell fabrication, and testing for electrodes and cells

Products:
- R&D Capabilities Report

TASK 6: OPERATIONAL RAMP-UP TO STEADY STATE OPERATIONS
The goal of this task is to establish a fully operational prototyping line capable of producing high-quality, low-volume battery samples for a diverse customer base. This includes scaling from initial setup to steady state production, ensuring the team is trained, workflows are refined, and the facility can reliably deliver prototype units that meet customer requirements.

The Recipient shall:
- Recruit and train a specialized workforce to operate the prototyping line, ensuring expertise in production techniques and process troubleshooting is transferred to the new workforce.
- Develop and document SOPs for all critical steps in the manufacturing process, ensuring consistency and repeatability.
- Develop a comprehensive environmental, health, and safety program and associated training materials, ensuring workplace safety and compliance
- Conduct initial production runs to validate equipment performance, optimize process parameters, and refine workflows based on customers' requirements and chemistries.
- Develop a scalable production framework that allows for adjustments in capacity and process flexibility to meet varied customer needs.
- Pilot the production framework with initial users.
- Monitor key performance indicators (KPIs) such as production rate and yield to assess progress toward steady-state operations.
- Develop and deploy digital battery line reporting tools to monitor and ensure consistency across prototype battery cells. This will include:
    - Real-time data collection from line metrology tools (e.g., beta gauge, 4-point probe, hi-pot tester, stacker, winder).
    - Line-side statistical process control (SPC) charts.
    - Traceability from raw materials through final testing to support root-cause analysis and continuous improvement.
    - Integration with the Manufacturing Execution System to enable feedback loops between production and testing.
    - Dashboards reporting key quality indicators such as yield and throughput.
- Establish disposal and recycling processes in compliance with sustainability best practices.
- Prepare an *Operational Readiness Report* that is 10-15 pages, includes graphics and figures, and has an executive summary that is written for a non-technical audience. This report will detail:
    - Workforce training and skill development activities.
    - Documented SOPs and production workflows.
    - Performance benchmarks and process refinement strategies.
    - Customer sample qualification process and lessons learned from initial runs.
- Prepare a Task 6 CPR Report and participate in a CPR Meeting, per subtask 1.3.

Products:
- Operational Readiness Report
- Task 6 CPR Report

TASK 7: BUILD OUT ANCILLARY SERVICES
The goal of this task is to develop the support offerings that range from highly technical to entrepreneurial business support for the Li-ion battery community and that leverage, but extend beyond, the standard manufacturing pilot line use cases of:
- Electrode manufacturing
- Pouch cell assembly
- Cylindrical cell assembly
- Electrode and cell testing
- R&D capabilities (e.g., R&D-scale materials processing and electrode fabrication, coin and pouch cell fabrication (including multi-layer), and electrode and cell testing)

The Recipient shall:
- Establish partnerships with complementary organizations to coordinate and collaborate on efforts, including but not limited to:
    - Entrepreneurial support organizations: Explore hosting pitch events, office hours for advising assistance, and other supports for entrepreneurs.
    - Universities: Explore hosting academic-sponsored research.
    - Corporates: Explore hosting corporate-sponsored research.
- Interview user base to establish high-priority services and supports to build a *High - Priority Ancillary Service List*, which may include, for example:
    - Office hours with service providers and suppliers
    - User training on battery manufacturing (e.g., to help use the line)
    - Networking events
    - Incubator-like space for rent: offices, desks, and lab space
    - Connections to partners such as corporates and investors
    - Startup and corporate industry speaker series
    - Technology scouting engagements and facility tours for corporates
    - 3rd-party technology validation services for corporates
    - Consulting services to companies who are beginning to undergo the scaling journey
    - Venture studio
- Build and pilot high-priority services and supports that are deemed additive to the ecosystem, supportive of a long-term sustainable operational business model, and where the benefit (both impact and revenue) is greater than the cost (both time and money) of developing.
- Additions,subtractions and/or new locations to the list of services and supports must first be approved by the CAM in writing prior to enactment.
- Prepare a *High-Priority Services and Supports Report* that details each of the piloted services and supports, their results, whether they will be continued based on the cost/benefit analysis, and whether they contribute to a sustainable operational model.

Products:
- High-Priority Ancillary Service List
- High-Priority Services and Supports Report

TASK 8: ESTABLISH THE INFRASTRUCTURE TO BUILD AND SCALE WORKFORCE DEVELOPMENT INITIATIVES

The goal of this task is to establish the cross-cutting partnerships and knowledge needed to ensure that California companies in the battery sector have the skilled employees they need to make the state a world leader in battery technology.

The Recipient shall:

- Establish the Battery Workforce Working Group (BWWG) by determining members (to create a *BWWG Member List*), meeting cadence, and goals of the group, including:
    - Determining how and when to pursue apprenticeship(s) based on the student and professional training developed in this scope of work.
    - Determining how and when to pursue credentialing and/or certification programs.
    - Determining the high-impact outreach efforts that support inclusive knowledge, training, and opportunity dissemination–including when translation is necessary.
    - Coordinating and communicating activities across the education pathway (from certificate - associate - BS - MS - PhD, as well as apprenticeship and certifications) and battery value chain when relevant – specifically with the Lithium Valley region – to share resources and prevent the duplication of efforts.
- Develop an *Education Organization Partner List of* organization partners—supported by the BWWG—across California to stay up to date on workforce activities, coordinate efforts, and identify potential partners for pilot programs.
    - Convene an educational network of partners (universities, community colleges, adult education, K-12, and other non-profit training providers) that collectively share and develop curriculum and course offerings. Work with educational partners to distribute curriculum to educators throughout the state.
- Map out the career pathways infrastructure required to train the employees needed by the battery sector, including but not limited to the following pathways:
    - Incorporating curriculum into existing programs.
    - Develop new programs (including apprenticeships for skilled trades careers in the battery industry).
    - Using or building communication channels to ensure Californians are aware of the opportunities in the battery sector.
- Conduct a research initiative with workforce partners and companies across the battery ecosystem to identify the skill sets and gaps for key occupations seen in the battery workforce to produce the *Industry-Serving Workforce Skill Sets and Gaps Report* that is 10-15 pages, includes graphics and figures, and has an executive summary that is written for a non-technical audience. This report will detail:
    - A list of key occupations explored including, but not limited to: engineers (electrical, mechanical, manufacturing, chemical), researchers (materials, chemistry), technicians (manufacturing, electronics, maintenance, quality control, test), and production personnel.
    - The skill sets required for key occupations, the current pathways individuals use to acquire them, and the existing gaps in skills or training.
    - A summary of the industry input collected using such processes as DACUM (Developing a Curriculum), a widely used method of job analysis.
- Provide a *Curriculum Package #1* that includes a copy of all curricula developed and update as curriculum is adjusted.

- Provide a *Curriculum Package #2* that provides an updated copy of all curricula developed

Products:
- BWWG Member List
- Education Organization Partner List
- Industry-Serving Workforce Skill Sets and Gaps Report
- Curriculum Package #1
- Curriculum Package #2

TASK 9: DEVELOP CURRICULUM FOR STUDENTS
The goal of this task is to curate, develop, and distribute to educational organizations the curricula needed to train Californians in the skills required for the battery sector. This will include universities, community colleges, adult education, K-12, workforce development board (WDB) training providers, as well as community-based organizations. These curricula will be accessible by all Californians throughout the state.

The Recipient shall:
- Support partners with aligning classroom curricula with industry standards and technological advancements, using the Industry-Serving Workforce Skill Sets and Gaps Report. This support will include, but will not be limited to:
    - Development and curation of skilled technician curriculum for the California Community Colleges.
    - The creation of battery and electrochemical engineering courses, and development of the applied battery small-scale project laboratory for higher education.
- Develop *Hands-on Curriculum Plan* for students using the pilot line facility:
    - Build the hands-on components of the community college and higher education curriculum, respectively, to be held at the pilot line.
    - Determine process for integrating hands-on curriculum into pilot line operations.
- Pilot the *Hands-on Curriculum Plan* for students at the pilot line.
    - Recruit pilot community college partner.
    - Pilot hands-on training with community college and higher education students.
- Iterate on curriculum and expand.
    - Evaluate effectiveness of hands-on curriculum and ability to integrate into pilot line operations and iterate on content or process as needed to finalize the Hands-on Curriculum Plan. Build in additional audiences (e.g., K-12, WDBs) when possible.
    - Identify the successful and scalable aspects of the curriculum to build the *Scalable Curriculum Package* to expand to other community colleges, universities, and institutions throughout the Bay Area and across California.
    - Make relevant information public via centers such as the Battery Education Resource Center (BERC).

Products:
- Hands-on Curriculum Plan
- Scalable Curriculum Package

TASK 10: DEVELOP CURRICULUM FOR WORKERS
The goal of this task is to develop, pilot, and communicate training for both staff members and users of the pilot manufacturing line facility.

The Recipient shall:

- Conduct a *Workforce Assessment* in partnership with labor, battery manufacturing, and relevant BWWG member partners to evaluate pilot line staff and user training needs, including job quality and standards (i.e., high-road jobs).
    - Evaluate whether a pre-employment program is needed.
- Develop, or curate, needed training for staff to develop the *Staff Training Plan*.
- Develop the *User Training Plan*.
- Support, as appropriate, finalizing a first collective-bargaining agreement to unionize the relevant pilot line workforce.
- Pilot staff training for new, and existing as needed, employees.
    - Publicly post open position(s).
    - Advertise opportunity to displaced or unplaced union members and/or individuals within the local, disadvantaged community.
    - Hire new staff for open position(s).
    - Train new staff members using the *Staff Training Plan*.
- Pilot user training.
- Iterate on training and improve training by:
    - Evaluate effectiveness of *Staff Training Plan* and iterate on training materials and/or process as needed to finalize.
    - Evaluate effectiveness of *User Training Plan* and iterate on training materials and/or process as needed to finalize.
    - Produce a *Write Up of the Workforce Pilot Training Learnings*, including successes and lessons that will detail the workforce assessment process and outcomes, the resulting training developed and implemented, evaluation of the effectiveness, and any iteration.
    - Disseminate the Write Up of the Workforce Pilot Training Learnings publicly.

Products:

- Workforce Assessment
- Staff Training Plan
- User Training Plan
- Write Up of the Workforce Pilot Training Learnings

TASK 11: BUILD TRAINING AND PROFESSIONAL OPPORTUNITIES WITH INDUSTRY
The goal of this task is to connect individuals trained through student and workforce initiatives with industry to further education, build networks, and ultimately connect the pipeline of trained workers with the companies that need them.

The Recipient shall:

- Host different kinds of events, at the pilot line and virtually as relevant, to support professional growth for both current industry professionals and aspiring workers, to connect those trained through the pilot line's workforce initiatives with industry (and vice versa), and to engage with the local community.

- Produce a *List of Types of Events Piloted and an Assessment of Effectiveness* document with the following events unless otherwise approved by the CAM in writing:
    - Industry Speaker Sessions (in partnership with battery companies across the ecosystem)
    - "How-to" Lunch and Learns
    - Public workshops to highlight clean energy careers
    - Office Hours with Professional Service Providers
    - Facility tours
    - Classroom visits by pilot line staff
    - Job fair (in partnership with relevant entities that hold job fairs in adult education and/or the battery ecosystem)
- Support placement of students into internships to bridge the gap between education and industry employment
    - Pilot local chapters of student bodies and professionals to establish a pipeline of skill set development and targeted industry placements through academia-industry micro-mentorship and training. Efforts would be coordinated with industry partners.
    - Facilitate placements of students into industry internships, where possible, leveraging relationships with battery companies across the ecosystem.
    - Scope an internship program hosted by Recipient.
- Host job openings of member companies on a job board on the pilot line's website.

Products:

- List of Types of Events Piloted and an Assessment of Effectiveness

TASK 12: BUILD SUSTAINABLE LITHIUM SUPPLY CHAIN AND BEYOND LI-ION

The goal of this task is to develop manufacturing technologies to create a sustainable lithium supply chain from the Lithium Valley (the Salton Sea Known Geothermal Resource Area in Imperial County, California that has been identified as a potential domestic U.S. resource of lithium) and accelerate the lab-to-market transition of beyond lithium-ion technologies such as solid-state and lithium-sulfur batteries in partnership with universities.

The Recipient shall:

- Establish a partnership between the pilot line and the Lithium Valley.
    - Enable communication between colleges, county officials, technologists, and government.
    - Hold an inaugural workshop to establish a *Roadmap for Collaboration and Goals Report* that outlines key partners and activities.
    - Leverage lithium battery materials, manufacturing, and electrochemistry expertise to create sustainable lithium separation technology tailored for extraction from the Lithium Valley.
    - Create the new *Curriculum for BA Chemical Technician*. Two upper division technical elective courses will be created specifically to focus on Li extraction and separation and battery materials chemistry for the new Chemical Technician Bachelor of Art (BA) degree.
    - Create a lithium separation technology, living laboratory demonstration platform at an existing community college or other educational facility where students, technicians, and engineers learn through hands-on experience.

    - Establish a talent pipeline between graduating students and careers in lithium separation.
- Leverage experience and expertise with university partners to create beyond lithium-ion battery manufacturing and testing capabilities.
    - Build and implement a dry room facility for prototype-scale manufacturing beyond lithium-ion batteries such as solid-state and Li-S batteries. This facility will enable advanced battery manufacturing research and education.
        - Prepare a *Beyond Li-ion Prototyping Facility Readiness Report* that is 10-15 pages, includes graphics and figures, and has an executive summary that is written for a non-technical audience. This report will detail:
            - Overview of facility design and modifications
            - Procurement and installation of key infrastructure elements
            - Compliance with regulatory requirements
            - Readiness assessment for operations
    - Establish a solid-state battery manufacturing and testing facility with a focus on ceramic electrolytes and mechano-electrochemical testing protocol.
        - Prepare a *Solid-State Facility Readiness Report* that is 10-15 pages, includes graphics and figures, and has an executive summary that is written for a non-technical audience. This report will detail:
            - Overview of facility design and modifications
            - Procurement and installation of key infrastructure elements
            - Compliance with regulatory requirements
            - Readiness assessment for operations
- Co-develop research and workforce training units on advanced battery manufacturing and testing.
    - Create *List of Teaching Units and Syllabi* for universities
    - Establish teaching units on lithium extraction and advanced battery research, development, manufacturing, and testing.
    - Initiate quarterly class units on lithium extraction and advanced battery research, development, manufacturing, and testing. This will integrate the lithium extraction technology developed in the first two years of the pilot line.
    - Establish a talent pipeline between graduating students and careers in advanced battery design, development, manufacturing, and implementation.

Products:
- Roadmap for Collaboration and Goals Report
- List of Teaching Units and Syllabi
- Curriculum for BA Chemical Technician
- Beyond Li-ion Prototyping Facility Readiness Report
- Solid-State Facility Readiness Report

TASK 13: OPEN-SOURCED KNOWLEDGE TRANSFER FOR THE INDUSTRY
The goal of this task is to support the development of a successful domestic battery manufacturing industry in California through the open sharing of knowledge and resources.

The Recipient Shall:
- Develop and publish open-source manufacturing and test data systems and cell formats

- Develop and publish a library of reference cell materials (e.g., cathode, anode, separator, electrolyte, cell casing, tabs) from U.S. and international suppliers
- Develop and publish open-source pouch and cylindrical cell reference designs
- Develop and publish battery pilot line equipment specifications, line designs, and capabilities
- Develop and publish SOPs for electrode and cell manufacturing
- Qualify and publish a list of industry experts, consultants, and service providers
- Define and publish industry standards for battery cell manufacturing and testing, ensuring that pilot line outputs align with industry needs and best practices.
- Collaborate with universities and key investors to conduct standardized cell teardowns and performance benchmarking of newly released battery cells.
- Produce an *Open-Sourced Knowledge Transfer Report* that is 10-15 pages, includes graphics and figures, and has an executive summary that is written for a non-technical audience. This report will detail:
    - Open-sourced data systems and cell reference designs
    - Pilot line equipment, designs, and SOPs for manufacturing use
    - Industry standards for manufacturing and testing, including performance benchmarking

Products:
- Open-Sourced Knowledge Transfer Report

TASK 14: EVALUATION OF PROJECT BENEFITS
The goal of this task is to report the benefits resulting from this project.

The Recipient shall:
- Complete the *Initial Project Benefits Questionnaire*. The Initial Project Benefits Questionnaire shall be initially completed by the Recipient with 'Kick-off' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Complete the *Annual Survey* by January 31st of each year. The Annual Survey includes but is not limited to the following information:
    - Technology commercialization progress
    - New media and publications
    - Company growth
    - Follow-on funding and awards received
- Complete the *Final Project Benefits Questionnaire*. The Final Project Benefits Questionnaire shall be completed by the Recipient with 'Final' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Respond to CAM questions regarding the questionnaire drafts.
- Complete and update the project profile on the CEC's public online project and recipient directory on the Energize Innovation website (www.energizeinnovation.fund), and provide *Documentation of Project Profile on EnergizeInnovation.fund*, including the profile link.
- If the Prime Recipient is an Innovation Partner on the project, complete and update the organizational profile on the CEC's public online project and recipient directory on the Energize Innovation website (www.energizeinnovation.fund), and provide

Documentation of Organization Profile on EnergizeInnovation.fund, including the profile link.

Products:

- Initial Project Benefits Questionnaire
- Annual Survey(s)
- Final Project Benefits Questionnaire
- Documentation of Project Profile on EnergizeInnovation.fund
- Documentation of Organization Profile on EnergizeInnovation.fund

TASK 15: TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to ensure the technological learning that resulted from the demonstration(s) is captured and disseminated to the range of professions that will be responsible for future deployments of this technology or similar technologies.

The Recipient Shall:

- Develop and submit a *Project Case Study Plan* that outlines how the Recipient will document the planning, construction, commissioning, and operation of the technology or system being demonstrated. The Project Case Study Plan should include:
    - An outline of the objectives, goals, and activities of the case study.
    - The organization that will be conducting the case study and the plan for conducting it.
    - A list of professions and practitioners involved in the technology's deployment.
    - Specific activities the recipient will take to ensure the learning that results from the project is disseminated to those professions and practitioners.
    - Presentations/webinars/training events to disseminate the results of the case study.
- Present the draft *Project Case Study Plan* to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the draft *Project Case Study Plan*. This document will identify:
    - TAC comments the Recipient proposes to incorporate into the final *Technology Transfer Plan*.
    - TAC comments the Recipient does not propose to incorporate with and explanation why.
- Submit the final *Project Case Study Plan* to the CAM for approval.
- Execute the final Project Case Study Plan and develop and submit a *Project Case Study*.
- When directed by the CAM, develop presentation materials for a CEC sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California CEC.
- 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.

Products:

- Project Case Study Plan (draft and final)
- Summary of TAC Comments
- Project Case Study (draft and final)
- High Quality Digital Photographs

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.