



**CALIFORNIA
ENERGY COMMISSION**



**California Energy Commission
July 10, 2024 Business Meeting
Backup Materials for Current Ways, 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: 24-0710-13h

STATE OF CALIFORNIA

**STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

RESOLUTION: Current Ways, 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-24-009 with Current Ways, Inc. for a \$2,191,398 grant. This agreement will fund the design and build-out of an LRIP line to manufacture a high-performance onboard bidirectional EV charger in Ventura County; 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 July 10, 2024.

AYE:

NAY:

ABSENT:

ABSTAIN:

Dated:

Kristine Banaag
Secretariat



GRANT REQUEST FORM (GRF)

A. New Agreement Number

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

New Agreement Number: EPC-24-009

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Kaitlin Choo
3. MS-:51
4. Phone Number: 916-232-8863

C. Recipient's Information

1. Recipient's Legal Name: Current Ways, Inc.
2. Federal ID Number: 27-1888106

D. Title of Project

Title of project: Accelerating the Low-rate Initial Production Of CWUBIC, Current Ways' Next Generation Bidirectional OBC

E. Term and Amount

1. Start Date: 7/30/2024
2. End Date: 3/31/2029
3. Amount: \$2,191,398.00

F. Business Meeting Information

1. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 7/10/2024 .
3. Consent or Discussion? Discussion
4. Business Meeting Presenter Name: Benson Gilbert
5. Time Needed for Business Meeting: 5 minutes.
6. The email subscription topic is: EPIC (Electric Program Investment Charge).

Agenda Item Subject and Description:

Current Ways, Inc. Proposed resolution approving agreement EPC-24-009 with Current Ways, Inc. for a \$2,191,398 grant, and adopting staff's determination that this action is exempt from CEQA. This agreement will fund the design and build-out of an LRIP line to manufacture a high-performance onboard bidirectional EV charger in Ventura County. (EPIC funding) Contact: Kaitlin Choo

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:

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, § 15301 ;

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.

California Code of Regulations, title 14, section 15301 provides that projects which consist of the operation, repair, maintenance, permitting, licensing, leasing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, and which involve negligible or no expansion of use beyond that existing at the time of the lead agency’s determination, are categorically exempt from the provisions of CEQA. The project consists of the design and build-out of a low-rate initial production pilot line to manufacture high performance onboard EV chargers. The chargers will be manufactured, assembled, tested, packaged, and shipped from an existing commercial manufacturing facility in Ventura County. The project will introduce minor new equipment inside of the existing facility, with space designated for an electronics lab and office.

Cal. Code Regs., tit. 14, sect. 15304 provides that projects which consist of minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry and agricultural purposes are categorically exempt from the provisions of CEQA. This project involves the installation of minor equipment for assembly of the onboard chargers and electronics testing at an existing manufacturing facility in Ventura County and does not involve any new construction of buildings. One EV charging station with a small footprint may be installed to test the product if the existing facility does not already have a charging station readily available. Otherwise, the facility’s



parking lot and surrounding area will not involve the construction of any new structures or other alterations to the land. There will be no removal of healthy nature or scenic nature, and no toxins or harmful waste will be released during this process.

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

For these reasons, the proposed work will not have any significant effect on the environment and falls under sections 15301 and 15304.

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
Moorpark USD	\$ 60,000	\$0
TBD	\$ 53,000	\$0

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
To Be Determined – Product Validation	\$220,000	\$30,000
To Be Determined – House Tooling	\$200,000	\$35,867
To Be Determined – Engineering Consultation	\$29,700	\$69,300

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	23-24	301.001K	\$ 2,191,398

TOTAL Amount: \$ 2,191,398

R&D Program Area: TIEB: EDMF

Explanation for “Other” selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #: Not applicable

M. Recipient’s Contact Information

1. Recipient’s Administrator/Officer

Name: Gana Kasina

Address: 791 Chambers Ln Ste 100 Suite 100



STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

Grant Request Form
CEC-270 (Revised 01/2024)

City, State, Zip: Simi Valley, CA 93065-0975

Phone: 805-422-8300

E-Mail: gana.kasina@currentways.com

3. Recipient's Project Manager

Name: Gana Kasina

Address: 791 Chambers Ln Ste 100

City, State, Zip: Simi Valley, CA 93065-0975

Phone: 805-422-8300

E-Mail: Gana.kasina@currentways.com

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-21-304R2
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	Yes

Approved By

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

Agreement Manager: Kaitlin Choo

Approval Date: 05/24/2024

Branch Manager: Yu Hou



STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

Grant Request Form
CEC-270 (Revised 01/2024)

Approval Date: 05/29/2024

Director: Yu Hou for Cammy Peterson

Approval Date: 05/29/2024

**Exhibit A
Scope of Work
Current Ways, Inc**

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Project Implementation Plan
3		Pilot Line Design Development
4	X	Construct and Test Run Production Line
5		Start of Production
6		Evaluation of Project Benefits
7		Technology/Knowledge Transfer Activities
8		Engage Local Organization

B. Acronym/Term List

Acronym/Term	Meaning
BOM	Bill of Materials
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CE	Conformité Européenne
CEC	California Energy Commission
CPR	Critical Project Review
CWUBIC	Current Ways Universal Bidirectional Isolated Converter
DC	Direct Current
DFM	Design for Manufacturing
EV	Electric Vehicle
IATF	International Automotive Task Force
LRIP	Low-Rate Initial Production Line
OBC	Onboard Charger
TAC	Technical Advisory Committee
UL	United Laboratories
V2L	Vehicle to Load
V2B	Vehicle to Building
V2G	Vehicle to Grid

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

A. Purpose of Agreement

The purpose of this Agreement is to fund the design and build-out of a low-rate initial production (LRIP) pilot line to manufacture a high-performance onboard EV charger (OBC) called Current

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

Current Ways, Inc

Ways Universal Bidirectional Isolated Converter (CWUBIC). CWUBIC offers high charge rate capabilities and bidirectionality functions such as vehicle to load (V2L), vehicle to building (V2B), and vehicle to grid (V2G) through its modular and high-power density design without the need for costly electrical infrastructure upgrades.

B. Problem/ Solution Statement

Problem

The current market lacks an onboard charging solution that can meet the demand for faster charging and support bidirectional power flow. Existing technologies are often limited to a Level 2 charging rate of 11.2 kW, falling short in terms of efficiency, bidirectionality, and affordability. This hinders the adoption of EVs as consumers face the dilemma of choosing between affordable electric vehicles with slow charging rates or expensive options with limited bidirectional capabilities. The scarcity of V2G-enabled vehicles and the inability to utilize mobile energy to support the grid restricts the potential for statewide clean energy integration. The high cost of direct current (DC) fast charging exacerbates range anxiety among EV users who are limited to more affordable, but slower, Level 1 and Level 2 charging sources. Finally, one of the primary challenges with manufacturing high-power charging devices is managing the rejected heat, which requires a precision assembly process.

Solution

To address the above problems, the Recipient has developed an innovative onboard charger called Current Ways Universal Bidirectional Isolated Converter (CWUBIC). CWUBIC is a high-performance onboard charger designed to offer exceptional energy efficiency, bidirectional power flow, and a range of advanced features such as universal charging standards compatibility, vehicle to grid, and more. It has a high-power density due to the modular, isolated, and compact design, which ensures efficient and reliable charging while prioritizing safety. CWUBIC uses the maximum number of standard components and modularity to keep the same packaging for different variants, which keeps costs low.

With a maximum charging rate of ~33kW, CWUBIC enables fast charging via existing infrastructure and common household connections as it automatically detects the number of phases the system is connected to. Additionally, CWUBIC's bidirectional power flow capability is designed to be universally compatible with input AV voltage ranging from 90V to 575V, which covers both commercial and residential connections and enables V2G and V2L applications. This empowers EV owners to contribute to grid stability and participate in demand response programs, accelerating the adoption of EVs and offsetting cost of vehicle operation. CWUBIC is designed for universal compatibility with both single phase and three phase inputs via the same connector, allowing seamless integration with different charging standards and communications systems around the world. In Low-Rate Initial Production Line (LRIP), the Recipient will test CWUBIC to ensure the product will deliver the same performance, regardless of application.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Design and build a high-performance onboard charger manufacturing line in an existing facility within Ventura County that can scale up to meet supply demands.

Exhibit A Scope of Work Current Ways, Inc

- Demonstrate the production of CWUBIC Onboard Charger (OBC) within an LRIP pilot line with consistent product quality.
- Demonstrate continuous maximum level 2 charging and discharging rate under lab-generated and field conditions.
- Conduct knowledge transfer activities through community engagement and workforce development.

Ratepayer Benefits:² This Agreement will result in the ratepayer benefits of greater electricity reliability and lower costs. First, CWUBIC's ability to charge EVs at a faster rate, nearly twice as fast as current technology, enhances the convenience of home charging compared to public fast charging stations. This reduces the need for ratepayers to rely on public infrastructure, allowing them to enjoy the efficiency and convenience of quick and efficient charging from the comfort of their homes without the costly electrical infrastructure upgrades that are typically required when installing Level 2 or 3 home charging equipment.

Reducing Costs: By diminishing reliance on public charging stations, ratepayers can save on fluctuating charging costs, which are often higher at public stations. Second, CWUBIC's V2G capability provides an opportunity for ratepayers to participate in demand response programs, leading to cost savings and a more stable grid. By leveraging CWUBIC's V2G feature, EVs can supply excess energy back to the grid during peak demand periods.

Reliability: Enabling inexpensive bidirectional vehicle to grid technology will create a more reliable electricity supply while contributing to cost savings for ratepayers and the larger community. As CWUBIC's adoption grows, the V2G functionality could favorably shift the grid power makeup toward more renewable sources because vehicles charged during high renewable production times can distribute that energy back to the grid during peak demand hours, outside of peak production times. This exchange will reduce both renewable curtailments and demand-based brownouts or blackouts. The V2L feature provides energy resilience and disaster response capacity to ratepayer communities by serving as a portable, clean, backup generator that can handle large electrical loads during power outages and climate-driven events.

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 manufacturing a universal bidirectional OBC that can charge and discharge at the maximum Level 2 rate, while accommodating all existing standard communication protocols. Additionally, CWUBIC's ability to accept both single-phase and three-phase inputs makes it an adaptable solution to serve both current and anticipated future charging needs. CWUBIC will reduce at-home and fleet-base charging time by up to half without requiring significant infrastructure updates. By leveraging these unique capabilities, CWUBIC has the potential to supplement fast charging as public charging infrastructure struggles to keep up with the rate of demand for current and future EV drivers. The increased convenience and accessibility of rapid, affordable at-home or fleet-base charging can influence higher adoption rates,

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).

Exhibit A

Scope of Work

Current Ways, Inc

consequently reducing carbon emissions and advancing the state's electrification efforts. Moreover, by enhancing the stability and reliability of the grid through its V2G capability, CWUBIC contributes to the overall resilience and sustainability of California's energy system.

Agreement Objectives

The objectives of this Agreement are to:

- Design and build an LRIP pilot line capable of producing 100 OBCs per week with 95% or more yield and less than 12% scrap.
- Demonstrate the technology readiness level of 8 by the end of the project by successfully completing field testing and lab testing of bidirectional 15 to 19.2kW at 240VAC and 22 to 33kW at 480VAC OBCs.
- Demonstrate the manufacturing readiness level of 8 by the end of the project by implementing all the necessary quality controls.
- Demonstrate interoperability with EV charging standards and connectors such as J1772, CCS, CHAdeMO and ChaoJi.

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

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For products that require a final version only

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

For all products

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

Instructions for Submitting Electronic Files and Developing Software:

- **Electronic File Format**

- Submit all data and documents required as products under this Agreement in an electronic file format that is fully editable and compatible with the 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

Exhibit A Scope of Work Current Ways, Inc

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

The Recipient shall:

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

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

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

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

- The CAM’s expectations for accomplishing tasks described in the Scope of Work;
 - An updated Project Schedule;
 - Technical products (subtask 1.1);
 - Progress reports (subtask 1.5);
 - Final Report (subtask 1.6);
 - TAC meetings (subtasks 1.10 and 1.11); 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*)

Exhibit A

Scope of Work

Current Ways, Inc

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 will be reallocated to cover the additional costs borne by the Recipient, but the overall Agreement amount will not increase. CPR meetings generally take place at the 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 will include a discussion of match funding and permits.
- Conduct and make a record of each CPR meeting. Provide the Recipient with a schedule for providing a Progress Determination on continuation of the project.
- Determine whether to continue the project, and if so whether modifications are needed to the tasks, schedule, products, or budget for the remainder of the Agreement. If the CAM concludes that satisfactory progress is not being made, this conclusion will be referred to the Deputy Director of the Energy Research and Development Division.
- Provide the Recipient with a *Progress Determination* on continuation of the project, in accordance with the schedule. The Progress Determination may include a requirement that the Recipient revise one or more products.

Recipient Products:

- CPR Report(s)

CAM Products:

- CPR Agenda(s)

Exhibit A Scope of Work Current Ways, Inc

- 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 and the CAO 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* on a USB memory stick, organized by the tasks in the Agreement.

Products:

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

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

The Recipient shall:

- Submit a monthly *Progress Report* to the CAM. Each progress report must:
 - Summarize progress made on all Agreement activities as specified in the scope of work for the preceding month, including accomplishments, problems, milestones, products, schedule, fiscal status, and an assessment of the ability to complete the

Exhibit A Scope of Work Current Ways, Inc

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 Funds and in-state expenditures.

Products:

- Progress Reports
- Invoices

Subtask 1.6 Final Report

The goal of this subtask is to prepare a comprehensive Final Report that describes the original purpose, approach, results, and conclusions of the work performed under this Agreement. When creating the Final Report Outline and the Final Report, the Recipient must use the CEC Style Manual provided by the CAM.

Subtask 1.6.1 Final Report Outline

The Recipient shall:

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

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

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

Subtask 1.6.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, 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)

Exhibit A Scope of Work Current Ways, Inc

- 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 not 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 SUBCONTRACTS

Subtask 1.7 Match Funds

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

While the costs to obtain and document match funds are not reimbursable under this Agreement, the Recipient may spend match funds for this task. The Recipient may only spend match funds during the Agreement term, either concurrently or prior to the use of CEC funds. Match funds must be identified in writing, and the Recipient must obtain any associated commitments before incurring any costs for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a *Match Funds Status Letter* that documents the match funds committed to this Agreement. If no match funds were part of the proposal that led to the 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 proposal that led to the CEC awarding this Agreement, then provide in the letter:

Exhibit A Scope of Work Current Ways, Inc

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

Products:

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

Subtask 1.8 Permits

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

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.

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

Products:

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

Subtask 1.9 Subcontracts

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

The Recipient shall:

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

Products:

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

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 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 insure 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 1.11.
- 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.

Products:

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

Exhibit A

Scope of Work

Current Ways, Inc

Subtask 1.11 TAC Meetings

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

The Recipient shall:

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

The TAC shall:

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

Exhibit A Scope of Work Current Ways, Inc

- 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

IV. TECHNICAL TASKS

TASK 2 PROJECT IMPLEMENTATION PLAN

The goals of this task are to complete the project planning and conceptual design of the LRIP line within an existing facility, and to engage all the necessary internal and external parties.

Subtask 2.1 Project Planning & Review

- The goal of this task is to finalize the project plan and come up with a top-level manufacturing facility concept design.

The Recipient shall:

- Develop a top-level plant concept to identify the necessary equipment and software.
- Review and finalize project schedule with internal and external stakeholders.
- Finalize the *Project Plan Report*, which will include but is not limited to:
 - A detailed Gantt chart describing the timeline of the project.
 - A work breakdown structure identifying the key stakeholders and work to be completed with regard to the planning and conceptual design of the facility.
 - This report will include graphics and figures and will have an executive summary written for a general public audience.
 - This report should not disclose any confidential information.
- Prepare and provide a *Conceptual Plant Design Summary*, which should include but is not limited to:
 - A discussion of the selected manufacturing location.
 - Design considerations like ergonomics and material flow.
 - This report should not disclose any confidential information.

Products:

- Project Plan Report
- Conceptual Plant Design Summary

Exhibit A

Scope of Work

Current Ways, Inc

Subtask 2.2 Engage External Vendors

The goals of this task are to identify the vendors and engage them by sharing the requirements of the production equipment and tooling computer aided-design software (CAD).

The Recipient shall:

- Prepare an *Equipment and Software Summary* that is based on the conceptual design that will include but is not limited to:
 - Discussion on how the major equipment was decided on over other options.
 - Discussion on vendor selection including any considerations such as specifications and easy maintenance.
 - Summary of request for quote (RFQ) responses received.
 - Selection criteria.
 - Executive summary that is written for a non-technical audience.
 - This report should not disclose any confidential information.
- Prepare an RFQ(s) for software and equipment and invite quotations as necessary.

Products:

- Equipment and Software Summary

TASK 3 PILOT LINE DESIGN DEVELOPMENT

The goal of this task is to develop all the necessary components involved in pilot line design, including supply chain.

Subtask 3.1 Site Selection and Process Flow, Process Failure Mode and Effects Analysis (PFMEA) & Control Plan

The goals of this subtask are to select and finalize a manufacturing facility in California.

The Recipient shall:

- Conduct an extensive search for a ready-to-use industrial site with existing infrastructure capacities that meet the projected needs. Additional site selection criteria to be specified in a *Site Selection Memo* that describes prerequisites for site selection.
 - Ensure that the Recipient's promise in its CEQA Worksheet is fulfilled: "Installation of new equipment at an existing facility to produce the CWUBIC line of On-Board Chargers will not have any impact on environment as there are no toxins or harmful waste released during this process and no building construction is involved."
- Form a cross functional team and conduct regular meetings to develop process flow, PFMEA, and a Control Plan.
- Prepare a Process Flow document detailing the production flow.
- Prepare a PFMEA Log to identify the risks in each step of the process.
- Prepare a Control Plan, to provide information on mitigating identified production quality risks.
- Specify product testing requirements and prepare a *Product Testing Requirements and Verification Plan*, which will include but is not limited to:
 - The number of tests to be conducted and test facility and sample quantity for each test.
 - Validating critical metrics.

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- Measurement tools for verification.
- Desired certifications.
- This report should summarize the production process flow, risks identified in PFMEA document and the mitigation controls from control plan document.
- This report should not disclose any confidential information.
- Establish verification and testing methods to demonstrate product quality.

Products:

- Site Selection Memo
- Product Testing Requirements and Verification Plan

Subtask 3.2 Pilot Line Design Details

The goal of this task is to develop a detailed and sustainable pilot line design based on the inputs from Task 3.1.

The Recipient shall:

- Determine facility requirements and prepare a *Facility Fit-Up Requirements Report* that takes into account facility requirements determined in Subtask 3.1 which includes, but is not limited to, testing equipment, facility equipment, safety certifications needed, plans for facility upgrades, gasses, deionized water, plumbing, and electrical.
 - This report will include graphics, figures, and will have an executive summary that is written for a non-technical audience.
- Sign the *Lease Agreement* with the property owner.
- Assess for material movement, production rate(s) and minimal risks and provide a summary of the research.
- Complete the *Optimized Pilot Line Layout Summary* design which details each step of the manufacturing process, starting with incoming materials through final product shipping.
 - This report will include graphics, figures and will have an executive summary that is written for a non-technical audience.

Products:

- Facility Fit-Up Requirements Report
- Lease Agreement
- Optimized Pilot Line Layout Summary

Subtask 3.3 Supply Chain and Vendor Identification

The goals of this task are to finalize the supply chain for raw materials, equipment, and vendors and generate an estimate of initial capital cost and product cost.

The Recipient shall:

- Finalize Bill of Materials (BOM) and material specifications for CWUBIC production.
- Finalize and respond to all the production equipment and software quotations received.
- Prepare a *Material Suppliers Summary* detailing the Recipient's progress on supplier selection based on the engineering bill of materials.
 - This summary will have an executive summary that is written for a non-technical audience.
 - This report should not disclose any confidential information.

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- Engage with material suppliers and develop *Capacity Studies Summary* to mitigate supply chain risks, which will include but is not limited to disruptions due to lack of planning, proven supplier relations, lessons learned and previous experience in successfully conducting business.
 - This summary will have an executive summary that is written for a non-technical audience.
- Engage with material suppliers and develop *Design for Manufacturing (DFM) Reports* for child components or sub-assemblies to mitigate manufacturing risks. This report will include, but is not limited to, incorrect dimensions, failure to achieve or maintain the tolerances, and acceptable run at rate to reduce the component pricing.
 - This report will have an executive summary that is written for a non-technical audience.
- Generate initial product and manufacturing cost model.

Products:

- Material Suppliers Summary
- Capacity Studies Summary
- DFM Reports

Subtask 3.4 Finalize Pilot Line Design and Order Equipment

The goals of this task are to finalize pilot line design based on the optimization studies, cost analysis, and vendor feedback, and to order all the necessary equipment.

The Recipient shall:

- Prepare a draft and final *Pilot Line Design* that meets the volume and yield targets, as stated in the Project Performance Metrics. This design will include but not be limited to:
 - Schematics
 - Specifications
 - Full layout of assembly
- Conduct a cross functional team (CFT) meeting consisting of personnel from various departments to review and finalize the design.
- Finalize vendor selection and place orders for equipment and software.

Products:

- Pilot Line Design (draft and final)

TASK 4 CONSTRUCT AND TEST RUN PRODUCTION LINE

The goal of this task is to construct, troubleshoot, and demonstrate that the three production sub-processes were integrated properly and achieve low-rate initial production. Test methods will be developed to ensure processing rates are acceptable and product quality is replicable.

Subtask 4.1 Line Construction

The goals of this task are to complete the line construction and equipment calibrations.

The Recipient shall:

- Receive and inspect equipment for quality assurance.

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- Prepare and provide an *Equipment Inspection Report*, which will be 1-2 pages, and will include calibration details and safety details.
- Install and organize equipment per the Pilot Line Design in subtask 3.4.
- Calibrate equipment to operate within specifications and prepare a *Calibration Report* to show the machine is within acceptable parameter range.
- Provide *Installed Pilot Line Photograph(s)* of initial line construction to document completion.

Products:

- Equipment Inspection Report
- Calibration Report
- Installed Pilot Line Photographs

Subtask 4.2 Engineering Trial Run

The goal of this task is to complete an engineering trial run of the line to collect and record feedback on the line operation.

The Recipient shall:

- Place orders for all necessary supplies from the BOM sufficient to run the line for the trial runs and the initial LRIP run.
- Inspect incoming material.
- Operate a trial run that is monitored and evaluated by a team of engineers.
- Document, evaluate feedback, and prepare *Trial Run Observation Summary*, which will include but is not limited to:
 - Quality concerns, yield, specifications and more.
 - Results for each trial run conducted.
 - Photographs of units produced from trial run.
 - This report will include graphics and figures and will have an executive summary that is written for a non-technical audience.
- Identify, plan, and implement minor line improvements based on feedback, if applicable.

Products:

- Trial Run Observation Summary

Subtask 4.3 Field Testing and Design Iteration

The goal of this task is to validate technical performance of the onboard charger in real-life conditions and implement any required engineering changes based on the field-testing results.

The Recipient shall:

- Install CWUBIC at customer locations.
- Provide OEMs with Standard Installation Kits and Installation Manual.
- Collect and record relevant performance measurements such as charging and discharging session data and load specifications.
- Evaluate results compared to lab results and market demands.
- Prepare a *Test Results Report A* for both lab and field testing which will include but is not limited to test descriptions, passing criteria, results and summary of how it relates to market research and applications.

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- This report will include graphics and figures and will have an executive summary that is written for a non-technical audience.
- This report should not disclose any confidential information.
- Prepare Engineering Change Requests based on field testing results.
- Conduct a meeting to discuss CFT Review to understand the ECR and propose solutions.
- Implement the solutions and redo the field testing, if necessary.

Products:

- Test Results Report A

Subtask 4.4 Design Iteration Based on Field Testing Results

The goal of this task is to implement any required engineering changes based on the field-testing results.

The Recipient shall:

- Prepare Engineering Change Requests (ECR) based on field testing results.
- Conduct a meeting to discuss CFT Review to understand the ECR, propose solutions and decide if testing needs to be redone.
- Implement the solutions and redo the field testing, if necessary, and prepare *Test Results Report B*, which includes engineering changes identified and made after testing completed in subtask 4.3.

Products:

- Test Results Report B (if necessary)

Subtask 4.5 Training

The goal of this task is to train line operators and technicians before start of production.

The Recipient shall:

- Orient newly hired operators and technicians to the company.
- Train operators and technicians to perform their roles on the new production line.
- Prepare and submit a *Training Evaluations Memo* summarizing the training regimen, including the number of hours of training, the number of employees trained and the criteria for which employees were evaluated to ensure they can operate the line properly and safely.

Products:

- Training Evaluations Memo

Subtask 4.6 Critical Project Review

The goal of this subtask is to verify the readiness of the production line to initiate LRIP.

The Recipient shall:

- Prepare *CPR Report #1* and participate in a CPR meeting per subtask 1.3. The CPR meeting should take place after the Subtask 4.3 Field Testing and Design Iteration products are submitted. The report should include an executive summary written for a non-technical audience.

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- Attend and participate in a CPR meeting with the CAM.

Products:

- CPR Report #1

TASK 5 START OF PRODUCTION

The goal of this task is to begin LRIP to assess capabilities, implement quality control procedures, and obtain certifications necessary for market entry.

Subtask 5.1 Implement International Automotive Task Force (IATF) Systems

The goal of this task is to deploy controls and quality procedures and electronic work instructions consistent with IATF standards.

The Recipient shall:

- Institute quality control procedures including standard production expectations and testing consistent with the Control Plan and the Verification Plan.
- Confirm that all necessary Electronic Work Instructions have been created and filed in the appropriate file location and document in *Electronic Work Instructions Summary*.

Products:

- Electronic Work Instructions Summary

Subtask 5.2 Capability Run

The goals of this task are to produce the first batch of units to determine run rate and establish process capabilities.

The Recipient shall:

- Set up all supplies and personnel at the line to conduct the first full run.
- Produce a minimum of 50 to 100 units while documenting production times and quality control measures, unless otherwise determined by the CAM.
- Calculate run rate and produce a *Run Rate Report* which will include, but is not limited to, the processing time at each station and overall time necessary for production.
 - This report will include graphics, figures, and will have an executive summary that is written for a non-technical audience.
- Review quality control results and develop a *Quality Control Report* based on initial runs and discuss solutions to potential quality concerns that could arise.
- Revisit production and commercial projections and revise based on initial run rate.

Products:

- Run Rate Report
- Quality Control Report

Subtask 5.3 Product Certification

The goal of this task is to apply for Conformité Européenne (CE), United Laboratories (UL), IATF and any other necessary certifications. These certifications give the OEMs confidence that the product produced in this line are high quality and safe to use.

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The Recipient shall:

- Collect the necessary data, samples, and documentation to apply for CE, UL, and IATF certifications.
- Submit applications for necessary certifications.
- Promptly respond to any follow-up questions or documentation requests from certifying agencies.
- Receive and file *CE, UL, and IATF Certifications* as they are granted.

Products:

- CE, UL, and IATF Certifications

Subtask 5.4 Demonstrate Low-Rate Initial Production Line (LRIP) Goals

The goal of this task is to produce at minimum 100 units in a week unless otherwise specified by the CAM and evaluate production line performance.

The Recipient shall:

- Implement all necessary updates and improvements identified in earlier tasks.
- Run the line for a minimum of eight to twelve weeks unless otherwise specified by the CAM, measuring production totals, times, and quality control results.
- Calculate the updated run rate.
- Evaluate production results and compare results with projections to produce a *LRIP Results Report*. This report should discuss the production line performance with measures like achieved run rate compared to projected run rate, achieved quality control, or any unresolved quality issues.
 - This report will include graphics and figures and will have an executive summary that is written for a non-technical audience.
- Evaluate project ending technology readiness level (TRL) and manufacturing readiness level (MRL) of the product.

Products:

- LRIP Results Report

TASK 6: 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

Exhibit A Scope of Work Current Ways, Inc

- 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 www.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 www.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 7 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to ensure the learning that resulted from this project is captured and disseminated so that similar efforts build on the lessons learned.

The Recipient shall:

- Develop and submit a *Project Case Study Plan* that outlines how the Recipient will document the planning, establishment, and operation of the project. 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 project's development.
 - 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 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 (draft and final)*
- 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 CEC.

Exhibit A Scope of Work Current Ways, Inc

- 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

TASK 8 ENGAGE LOCAL ORGANIZATION

The goal of this task is to engage a community college, or other organization as approved by the CAM, in workforce development activities and encourage students from underrepresented communities to participate in STEM programs.

The Recipient shall:

- Develop an internship program for students.
- Develop *Workshop Materials* in the areas of engineering, manufacturing and quality control. Workshop materials will be posted publicly on the Recipient's website after workshops have taken place.
- Develop material for Clean Energy Engineering Seminars and provide the final *Seminar Presentation* in the form of a slide deck with graphics written for college-level audiences.
- Coordinate with local community college or other organization as approved by the CAM to schedule workshops, seminars and plant tours.
- Receive feedback from students and faculty on every activity via online survey.
- Create *Intern Evaluation Forms* which will include but is not limited to, total tasks completed, and number of new tools learned.
- Coordinate with faculty and provide the Recipients expertise in STEM curriculum development.

Products:

- Workshop Materials
- Seminar Presentation
- Intern Evaluation Forms

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet (project schedule).