STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 12/2019) CALIFORNIA ENERGY COMMISSION

A) New Agreement # EPC-22-004 (to be completed by CGL office)

B) Division	Agreement Manager:	MS-	Phone
ERDD	Peter Chen	43	916-776-0743

C) Recipient's Legal Name	Federal ID Number
Gridtractor, A California Corporation	87-3018365

D) Title of Project
Electric Farm Vehicles as Reliable Grid Assets

E) Term and Amount

Start Date	End Date	Amount
8/31/2022	3/31/2026	$ 2,999,567

F) Business Meeting Information

☐ ARFVTP agreements $75K and under delegated to Executive Director

Proposed Business Meeting Date 8/10/2022 ☐ Consent ☒ Discussion

Business Meeting Presenter Peter Chen Time Needed: 5 minutes

Please select one list serve. EPIC (Electric Program Investment Charge)

Agenda Item Subject and Description:
GRIDTRACTOR, A CALIFORNIA CORPORATION. Proposed resolution approving Agreement EPC-22-004 with Gridtractor, A California Corporation for a $2,999,567 grant to demonstrate an on-farm mobile microgrid concept using battery-electric agricultural tractors; and adopting staff's determination that this action is exempt from CEQA. The project will develop and demonstrate high power discharge capabilities for electric tractors, integrate bidirectional chargers with on-farm electrical service points, support loads during outages, participate in demand response, and load shift in response to time-of-use tariffs. (EPIC funding) Contact: Peter Chen.

G) California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?
   ☒ Yes (skip to question 2)
   ☐ No (complete the following (PRC 21065 and 14 CCR 15378)):

   Explain why Agreement is not considered a "Project":

2. If Agreement is considered a "Project" under CEQA:
   a) ☒ Agreement **IS** exempt.
      ☐ Statutory Exemption. List PRC and/or CCR section number:
      ☒ Categorical Exemption. List CCR section number:
      Cal. Code Regs., tit. 14, § 15301
      ☐ Common Sense Exemption. 14 CCR 15061 (b) (3)

   Explain reason why Agreement is exempt under the above section: California Code of Regulations, title 14, section 15301 provides that projects which consist

of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, and which involve negligible or no expansion of use are categorically exempt from CEQA. This project is exempt under Cal. Code Regs., tit 14, section 15301 because work will be conducted at existing facilities. Specifically, the bidirectional charging capabilities for the battery-electric agricultural tractor will be developed and tested at an existing industrial facility in Livermore. The modified tractors will be operated on existing agricultural land, including a ranch in Helm and vineyard in Arroyo Grande. To support the demonstration, minor alterations including electrical modifications will be done at existing utility service points to install electric vehicle charging equipment. For these reasons, the project will have no significant effect on the environment and fits within section 15301.

b) Agreement **IS NOT** exempt. (consult with the legal office to determine next steps)

Check all that apply

- ☐ Initial Study
- ☐ Negative Declaration
- ☐ Mitigated Negative Declaration
- ☐ Environmental Impact Report
- ☐ Statement of Overriding Considerations

H) List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)

Legal Company Name:	**Budget**
Polaris Energy Services Inc.	$ 173,454 ($52,036 Match funds)
Rhombus Energy Solutions, Inc.	$ 116,000 ($43,801 Match funds)
Zimeno, Inc.	$ 1,160,000 ($428,600 Match funds)
Current Ways, Inc.	$ 618,500 ($305,572 Match funds)
Cal-West Rain, Inc.	$ 33,000
TBD - Software Application Development	$ 79,000 ($23,700 Match funds)
Ventura Aerospace, Inc.	$ 37,800
National Technical Systems, LLC	$ 56,700

I) List all key partners: (attach additional sheets as necessary)

Legal Company Name:

J) Budget Information

Funding Source	**Funding Year of Appropriation**	**Budget List Number**	**Amount**
EPIC	21-22	301.001I	$2,999,567

R&D Program Area: EGRO: Transportation TOTAL: $ 2,999,567

Explanation for “Other” selection

Reimbursement Contract #: Federal Agreement #:

K) Recipient’s Contact Information

1. Recipient’s Administrator/Officer

Name: David Meyers

Address: 2600 Somerset Dr

City, State, Zip: Belmont, CA 94002-2928

Phone: 415-722-2261

E-Mail: david@gridtractor.com

2. Recipient’s Project Manager

Name: Nicola White

Address: 411 Woodbridge St

City, State, Zip: San Luis Obispo, CA 93401-5514

Phone: 650-759-3271

E-Mail: nwhite@polarisenergyservices.com

L) Selection Process Used

☒ Competitive Solicitation Solicitation #: GFO-21-303

☐ First Come First Served Solicitation Solicitation #:

☐ Non-Competitive Bid Follow-on Funding (SB 115)

M) The following items should be attached to this GRF

1.	Exhibit A, Scope of Work		☒ Attached
2.	Exhibit B, Budget Detail		☒ Attached
3.	CEC 105, Questionnaire for Identifying Conflicts		☒ Attached
4.	Recipient Resolution	☒ N/A	☐ Attached
5.	CEQA Documentation	☒ N/A	☐ Attached

_____ _____

Agreement Manager **Date**

_____ _____

Office Manager **Date**

_____ _____

Deputy Director **Date**

Exhibit A
Scope of Work
Gridtractor, A California Corporation

I. TASK ACRONYM/TERM LISTS

a. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2		Single-Phase Bidirectional Charging to/from Electric Tractor
3		Three-Phase Bidirectional Charging to/from Electric Tractor
4		DC Fast Charging to/from Electric Tractor
5		Design and Manufacture of EVSE+
6	X	Electrical Design, Installation, and EVSE Integration for Grid Scenarios
7	X	EVSE Monitoring and Control by Automation Controller
8		Tractor Operations Optimization
9		Evaluation of Project Benefits
10		Technology/Knowledge Transfer Activities

b. Acronym/Term List

Acronym/Term	Meaning
AC	Alternating Current
API	Application Programming Interface
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEC	California Energy Commission
CPR	Critical Project Review
DC	Direct Current
EFV	Electric Farm Vehicle
EVITP	Electric Vehicle Infrastructure Training Program
EVSE	Electric Vehicle Supply Equipment
kW	Kilowatt
MIDAS	Market Informed Demand Automation Server
PSPS	Public Safety Power Shutoff
TAC	Technical Advisory Committee
V2G	Vehicle-to-grid
V2L	Vehicle-to-load

[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
Gridtractor, A California Corporation

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

A. Purpose of Agreement

The purpose of this Agreement is to fund development, deployment, and testing of bidirectional charging capabilities for Electric Farm Vehicles (EFVs) and the electrical, hardware, software and communications systems required to employ them to backup load in Public Safety Power Shutoffs (PSPS), other reliability scenarios, demand response, and Market Informed Demand Automation Server (MIDAS) price response.

B. Problem/ Solution Statement

Problem

Electric agricultural tractors are entering commercial scale production and do not have the onboard capabilities nor the related Electric Vehicle Supply Equipment (EVSE) and control systems for bidirectional charging to support critical on-farm and rural loads during PSPS events or other reliability and grid management use cases. Vehicle-to-Load (V2L) is nascent across sectors and requires these capabilities and the initial EFV manufacturing has focused on core tractor capabilities.

Development of technology to support and add value to electrification of California's tractor fleet will accelerate the transition to EFVs and enable the state to take advantage of more than 2,000 megawatts of existing electrical infrastructure for vehicle electrification at a time when other sectors are limited by the need to deploy new electrical services.

Solution

The Recipient and project partners have previously developed an electric tractor with low power export capabilities and agricultural load management systems. The project will build on these existing technologies by upgrading the electric tractor to enable high power discharge capabilities. The tractor will be integrated with a bidirectional EVSE, dedicated grid-integrated controllers, and existing electrical service points to demonstrate the ability to power critical loads during reliability events and provide other valuable grid services.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Develop high power bidirectional charging capabilities for an electric tractor.
- Develop single and three-phase alternating current (AC) bidirectional EVSE for an electric tractor.
- Integrate commercially available bidirectional direct current (DC) fast charging EVSE with an electric tractor, in compliance with emerging vehicle-to-grid (V2G) standards and make it available to industry.
- Configure an automation controller to integrate EVSE with on-farm electrical service points and manage charging and load in several grid integration use cases.
- Develop a cloud-integrated application to coordinate and optimize the use of on-farm electrical systems for irrigation and tractor bidirectional charging.

- Test the integrated systems in actual and/or simulated PSPS events.
- Test the integrated systems in actual and/or simulated demand response events.
- Test the integrated systems in response to price signals from the MIDAS system.

Ratepayer Benefits:[2] This Agreement will result in the ratepayer benefits of greater electricity reliability, lower costs, and reduced carbon emissions. The project will enable EFVs to be used as mobile power sources that can be stored in advance of a planned shutoff or deployed at current battery levels during an unplanned outage to provide backup for critical on-farm loads. With the ability to optimize charging and use electric tractor batteries to offset peak loads, ratepayers will see more efficient use of cheap solar with lower delivery costs and reduced need for expensive peak power. Electrifying tractors reduces carbon emissions from operations due to their higher energy efficiency and lower carbon intensity compared to conventional tractors powered by diesel engines. Load shifting enabled by the electric tractors and advanced controls can also reduce carbon intensity of electricity used for irrigation pumping by 35 percent. If this technology is deployed at scale across California's tractor fleet, it has potential to fully offset the peak demand of irrigation pumping in the state (1,600 MW) and shift 1,200 GWh of peak load.

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 delivering bidirectional charging capabilities and standards for EFVs that will enable electrification of that off-road agricultural equipment, unlock a large distributed resource that can provide backup power for resilience, enable smart charging to minimize the cost and carbon content of electric power.

Agreement Objectives

The objectives of this Agreement are to:

1. Maintain less than 5 percent of usable battery capacity difference between the upgraded bidirectional charging capable tractor and the baseline tractor, with a benchmark goal of 2 percent and a high-performance target (stretch goal) of 0 percent difference between the vehicles.
2. Demonstrate round trip energy efficiency (grid to battery to load) of >70 percent, with a target of 90 percent and a high-performance target (stretch goal) of 95 percent
3. Demonstrate at least 2 hours of load support before battery depletion, with a benchmark goal of >3 hours and a high-performance target (stretch goal) of 6 hours.
4. Control the electric tractor charge and discharge behavior in response to actual and/or simulated PSPS events.
5. As a stretch goal, control the electric tractor charge and discharge behavior in response to demand response events and/or in response to price signals from the MIDAS system.

[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 the barriers that prevent the achievement of the state's statutory and energy goals..."

Exhibit A
Scope of Work
Gridtractor, A California Corporation

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, the Commission Agreement Officer (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);
- Technical Advisory Committee 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)*

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)
- 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 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)
    - 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* 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 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:
  - 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.
- 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.
- 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

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.
- 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

TECHNICAL TASKS

TASK 2: SINGLE-PHASE BIDIRECTIONAL CHARGING TO/FROM ELECTRIC TRACTOR

The goal of this task is to demonstrate three power flows when an electric tractor battery is connected to a single-phase EVSE+: charging from the grid to the battery at up to 18 kilowatts (kW); powering of site loads (V2L) during power outages at up to 6kW; sourcing of power from the battery back to the grid at up to 18kW.

The Recipient shall:

- Upgrade electric tractor inverter/charger power electronics from the stock configuration (which does not provide V2G capabilities) to new power electronics which enable single-phase charging from the grid to the battery, powering of site loads during power outages, and sourcing of power from the battery back to the grid. This power electronics upgrade will also include updates to the tractor coolant loop, communication protocols, and controls firmware to support the new power electronics.
- Develop a *Single-Phase Lab Test Plan* that includes, but is not limited to the following:
    - Description of the test equipment, test setup and procedures, and expected results.
    - Plans for testing Level 2 AC charging capability from the single-phase EVSE+ to the tractor battery in a lab setting.
    - Plans for testing discharging from the tractor battery via a bidirectional charger, through the single-phase EVSE+, and back to the grid in a lab setting.
    - Plans for testing ability to support single-phase loads from the tractor battery via the single-phase EVSE+ in standalone mode without grid connection.
- Execute the *Single-Phase Lab Test Plan*.
- Prepare a *Single-Phase Lab Test Report* that summarizes measurements, collected data, and observations of the single-phase lab testing.
- Develop a *Single-Phase Field Test Plan* that includes, but is not limited to the following:
    - Description of the test equipment, test setup and procedures, and expected results.
    - Plans for testing Level 2 AC charging capability from the single-phase EVSE+ to the tractor battery at a field test site.
    - Plans for testing discharging from the tractor battery via a bidirectional charger, through the EVSE+, and back to the grid at a field test site.
    - Plans for testing ability to support single-phase loads from the tractor battery via the single-phase EVSE+ during a simulated power outage at a field test site.
    - Plans for enabling single-phase load support during an actual power outage (actual testing subject to occurrence of an outage event).
- Execute the *Single-Phase Field Test Report*.
- Prepare a *Single-Phase Lab Test Report* that summarizes measurements, collected data, and observations of the single-phase field testing.

Products:

- Single-Phase Lab Test Plan
- Single-Phase Lab Test Report

- Single-Phase Field Test Plan
- Single-Phase Field Test Report

TASK 3: THREE-PHASE BIDIRECTIONAL CHARGING TO/FROM ELECTRIC TRACTOR
The goal of this task is to demonstrate three power flows when an electric tractor battery is connected to a three-phase EVSE+: charging from the grid to the battery at up to 18kW; powering of building loads during power outages at up to 18kW; sourcing of power from the battery back to the grid or site load at up to 18kW.

The Recipient shall:

- Upgrade the stock electric tractor power electronics from single-phase to three-phase to enable three-phase charging from the grid to the battery, powering of site loads during power outages, and sourcing of power from the battery back to the grid. This upgrade will include updates to tractor high voltage wiring, coolant loop design, low voltage harnesses, and vehicle control firmware to support the new three-phase power electronics.
- Develop a *Three-Phase Lab Test Plan* that includes, but is not limited to the following:
    - Description of the test equipment, test setup and procedures, and expected results.
    - Plans for testing charging capability from the three-phase EVSE+ to the tractor battery in a lab setting.
    - Plans for testing discharging from the tractor battery via a bidirectional charger, through the three-phase EVSE+, and back to the grid in a lab setting.
    - Plans for testing ability to support single-phase loads from the tractor battery via the three-phase EVSE+ in standalone mode without grid connection.
- Execute the *Three-Phase Lab Test Plan*.
- Prepare a *Three-Phase Lab Test Report* that summarizes measurements, collected data, and observations of the three-phase lab testing.
- Develop a *Three-Phase Field Test Plan* that includes, but is not limited to the following:
    - Description of the test equipment, test setup and procedures, and expected results.
    - Plans for testing charging capability from the three-phase EVSE+ to the tractor battery at a field test site.
    - Plans for testing discharging from the tractor battery via a bidirectional charger, through the three-phase EVSE+, and back to the grid at a field test site.
    - Plans for testing ability to support three-phase loads from the tractor battery via the three-phase EVSE+ during a simulated power outage at a field test site.
    - Plans for enabling three-phase load support during an actual power outage (actual testing subject to occurrence of an outage event).
- Execute the *Three-Phase Field Test Plan*.
- Prepare a *Three-Phase Field Test Report* that summarizes measurements, collected data, and observations of the three-phase field testing.

Products:

- Three-Phase Lab Test Plan
- Three-Phase Lab Test Report
- Three-Phase Field Test Plan
- Three-Phase Field Test Report

Exhibit A
Scope of Work
Gridtractor, A California Corporation

TASK 4: DC FAST CHARGING TO/FROM ELECTRIC TRACTOR
The goal of this task is to demonstrate three power flows when an electric tractor battery is connected to a bi-directional DC fast charger: charging from the grid to the battery at up to 30kW; powering of building loads during power outages at up to 30kW; sourcing of power from the battery back to the grid or site load at up to 30kW.

The Recipient shall:

- Upgrade electric tractor charging interfaces to support DC fast charging. These upgrades will include the charge connector, charging communication interface, and tractor high voltage power routing. Additional firmware to safely manage DC fast charging per relevant standards will also be developed and tested to support this upgrade. The upgraded system will enable DC fast charging from the grid to the battery, powering of site loads during power outages, and sourcing of power from the battery back to the grid.
- Develop a *Bidirectional DC Fast Charge Lab Test Plan* that includes, but is not limited to the following:
    - Description of the test equipment, test setup and procedures, and expected results.
    - Plans for testing charging capability from a bidirectional DC fast charger to the tractor battery in a lab setting.
    - Plans for testing ability to support three-phase loads from the tractor battery via a bi-directional DC fast charger in a standalone mode without grid connection.
- Execute the *Bidirectional DC Fast Charge Lab Test Plan*.
- Prepare a *Bidirectional DC Fast Charge Lab Test Report* that summarizes measurements, collected data, and observations of the bi-directional DC fast charge field testing.
- Develop a *Bidirectional DC Fast Charge Field Test Plan* that includes, but is not limited to the following:
    - Description of the test equipment, test setup and procedures, and expected results.
    - Plans for testing charging capability from a bidirectional DC fast charger to the tractor battery at a field test site.
    - Plans for testing discharging from the tractor battery via a bidirectional DC fast charger back to the grid at a field test site.
    - Plans for testing ability to support three-phase loads from the tractor battery via the bidirectional DC fast charger during a simulated power outage at a field test site.
    - Plans for enabling three-phase load support via a bidirectional DC fast charger during an actual power outage (actual testing subject to occurrence of an outage event).
- Execute the *Bidirectional DC Fast Charge Lab Test Plan*.
- Prepare a *Bidirectional DC Fast Charge Lab Test Report* that summarizes measurements, collected data, and observations of the bidirectional DC fast charge field testing.

Products:

- Bidirectional DC Fast Charge Lab Test Plan
- Bidirectional DC Fast Charge Lab Test Report
- Bidirectional DC Fast Charge Field Test Plan

- Bidirectional DC Fast Charge Field Test Report

TASK 5: DESIGN AND MANUFACTURE OF EVSE+

The goals of this task are to design, build, test, and field single-phase and three-phase EVSE+ wall mount units. EVSE+ units enable interconnection between an electric vehicle, the grid, and electric loads both when grid power is present and during power outages. The single-phase EVSE+ will be designed to support an 80A connection at 240VAC single phase, while the three-phase EVSE+ will be designed to support a 25A connection at 480VAC three-phase.

The Recipient shall:

- Develop designs for the single-phase and three-phase EVSE+ wall mount unit.
- Build initial single-phase and three-phase EVSE+ units.
- Develop an *EVSE+ Acceptance Test Plan* that includes, but is not limited to the following:
    - Description of test equipment, test setup and procedures, and expected results.
    - Plans for bench testing functionality of the single-phase and three-phase EVSE+ units.
    - Plans for certifying the single-phase and three-phase EVSE+.
- Begin the single and three-phase EVSE+ certification process.
- Update the designs for the single-phase and three-phase EVSE+ units.
- Build final single-phase and three-phase EVSE+ units.
- Conduct acceptance test functionality for the single-phase EVSE+ and three-phase EVSE+ units according to the *EVSE+ Acceptance Test Plan*.
- Finalize certification of the single-phase and three-phase EVSE+ units.
- Develop an *EVSE+ Acceptance Test Report* that describes results of acceptance testing, functionality of the single-phase and three-phase EVSE+ units, and certification process.

Products:

- EVSE+ Acceptance Test Plan
- EVSE+ Acceptance Test Report

TASK 6: ELECTRICAL DESIGN, INSTALLATION AND EVSE INTEGRATION FOR GRID SCENARIOS

The goal of this task is to develop and implement electrical designs for deployment of EVSE behind utility meters serving agricultural loads that enable operation in grid-connected and disconnected modes.

The Recipient shall:

- Survey the deployment sites' electrical configurations and characterize the loads they serve.
- Develop *Compliant Electrical Designs* for EVSE deployment at the deployment sites, including transfer switches to enable operation in blackout conditions.
- Secure the required permits for EVSE installation.
- Submit an *AB 841 Certification* that certifies the project has complied with all AB 841 (Ting, Chapter 372, Statutes of 2020) requirements specified in Exhibit C or describes why the AB 841 requirements do not apply to the project. The certification shall be signed by Recipient's authorized representative.

- Submit *Electric Vehicle Infrastructure Training Program (EVITP) Certification Numbers of Each EVITP-Certified Electrician* that installed electric vehicle charging infrastructure or equipment. EVITP Certification Numbers are not required to be submitted if AB 841 requirements do not apply to the project.
- Deploy EVSE at deployment sites and provide *Documentation of EVSE installation* including a description of the installation process and photos of the installed EVSE.
- Prepare a *CPR Report #1* in accordance with Subtask 1.3.
- Participate in CPR Meeting #1.

Products:
- Compliant Electrical Designs
- AB 841 Certification
- EVITP Certification Numbers of Each EVITP-Certified Electrician
- Documentation of EVSE Installation
- CPR Report #1

TASK 7: EVSE MONITORING AND CONTROL BY AUTOMATION CONTROLLER
The goal of this task is to develop software and hardware integrations to monitor and control the EVSE from the Network Operations Center using the automation controller as a gateway device.

The Recipient shall:
- Develop software and hardware integration designs to control EVSE using the automation controller.
- Test control of EVSE using the automation controller and related cloud interfaces in a laboratory environment.
- Test control of EVSE using the automation controller at deployment sites.
- Test control of EVSE using the automation controller in real or simulated PSPS or other loss of grid power scenarios, in real or simulated demand response events, and in routine operations responding to price signals from the MIDAS system.
- Prepare an *Automation Controller EVSE Integration and Test Report* that documents the control software and hardware integration, and controls testing conducted in the lab and deployment site environments, including procedures and test results.
- Prepare a *CPR Report #2* in accordance with Subtask 1.3.
- Participate in CPR Meeting #2

Products:
- Automation Controller EVSE Integration and Test Report
- CPR Report #2

TASK 8: TRACTOR OPERATIONS OPTIMIZATION
The goal of this task is to develop software that informs and executes user charge management decisions.

The Recipient shall:
- Develop a database of tractor operational and metadata.
- Integrate the tractor operations database with existing database of irrigation pump site operational and metadata.

- Develop algorithms for optimizing bidirectional tractor charging based on user configurations and inputs.
- Develop web and mobile user apps for managing fleets of irrigation pumps and tractors.
- Demonstrate electric tractor battery state-of-charge management integration with farming operations.
- Develop an application programming interface (API) for cloud integration.
- Develop software to enable users to operate seamlessly across the fleet management user apps.
- Prepare a *Tractor Operations Optimization Report* that includes software documentation for the user apps and feedback from the demonstration partners.

Products:
- Tractor Operations Optimization Report

TASK 9: 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 10 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

Exhibit A
Scope of Work
Gridtractor, A California Corporation

The goal of this task is to conduct activities that will accelerate the commercial adoption of the technology being supported under this agreement. Eligible activities include, but are not limited to, the following:

- Scale-up analysis including manufacturing analysis, independent design verification, and process improvement efforts.
- Technology verification testing, or application to a test bed program located in California.
- Legal services or licensing to secure necessary intellectual property to further develop the technology
- Market research, business plan development, and cost-performance modeling.
- Entry into an incubator or accelerator program located in California.

The Recipient Shall:

- Develop and submit a *Technology Transfer Plan (Draft/Final)* that identifies the proposed activities the recipient will conduct to accelerate the successful commercial adoption of the technology.
- Present the *Draft Technology Transfer Plan* to the TAC for feedback and comments.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the *Draft Technology Transfer 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 Technology Transfer Plan* to the CAM for approval.
- Implement activities identified in *Final Technology Transfer Plan.*
- Develop and submit a *Technology Transfer Summary Report (Draft/Final)* that includes high level summaries of the activities, results, and lessons learned of tasks performed relating to implementing the *Final Technology Transfer Plan*. This report should not include any proprietary information.
- When directed by the CAM, develop presentation materials for an CEC- sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the 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:

- Technology Transfer Plan (Draft/Final)
- Summary of TAC Comments
- Technology Transfer Summary Report (Draft/Final)
- High Quality Digital Photographs

Exhibit A
Scope of Work
Gridtractor, A California Corporation

IV. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

RESOLUTION NO: 22-0810-11b

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: Gridtractor, A California Corporation

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

RESOLVED, that the CEC approves Agreement EPC-22-004 with Gridtractor, A California Corporation for a $2,999,567 grant to demonstrate an on-farm mobile microgrid concept using battery-electric agricultural tractors. The project will develop and demonstrate high power discharge capabilities for electric tractors, integrate bidirectional chargers with on-farm electrical service points, support loads during outages, participate in demand response, and load shift in response to time-of-use tariffs; 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 August 10, 2022.

AYE:
NAY:
ABSENT:
ABSTAIN:

_____
Liza Lopez
Secretariat