

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION

New Agreement ARV-13-005 (To be completed by CGL Office)

Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Michelle Tessier	27	916-653-9662

Recipient's Legal Name	Federal ID Number
Trexa Corporation	46-2333793

Title of Project
TREXA Avatronex A1 Platform Pilot Production Facility

Term and Amount	Start Date	End Date	Amount
	1 / 15 / 2014	1 / 15 / 2016	\$ 2,447,653

Business Meeting Information
 ARFVTP agreements under \$75K delegated to Executive Director.

Proposed Business Meeting Date	12 / 11 / 2013	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter	Michelle Tessier	Time Needed:	5 minutes

Please select one list serve. **Altfuels (AB118- ARFVTP)****Agenda Item Subject and Description**

Trexa Corporation Possible approval of Agreement ARV-13-005 with Trexa Corporation for a \$2,447,653 grant to build out and validate a pilot production manufacturing/assembly line to manufacture a cost-competitive all-electric vehicle platform which will be integrated into a variety of non-road and fleet applications. (ARFVTP funding) Contact: Michelle Tessier.

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":
 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:
 a) Agreement **IS** exempt. (Attach draft NOE)
 Statutory Exemption. List PRC and/or CCR section number:
 Categorical Exemption. List CCR section number: 15301 Existing Facilities
 Common Sense Exemption. 14 CCR 15061 (b) (3)
 Explain reason why Agreement is exempt under the above section:
 The company is moving into an existing building structure, approximately 30,000 sq. ft with no modification to the facility.
- b) Agreement **IS NOT** exempt. (Consult with the legal office to determine next steps.)
 Check all that apply
 Initial Study Environmental Impact Report
 Negative Declaration Statement of Overriding Considerations
 Mitigated Negative Declaration

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

Legal Company Name:	Budget
Taranis Technologies	\$ 725,000
IMD, Inc.	\$ 525,000
PortTech LA	\$ 720,000

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

Legal Company Name:	
Electricore	\$116,633
Railscout	\$750,000

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Budget Information			
Funding Source	Funding Year of Appropriation	Budget List No.	Amount
Funding Source	12/13	601.118E	\$2,447,653.00
Funding Source			\$
R&D Program Area:	Select Program Area	TOTAL:	\$2,447,653
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Recipient's Administrator/ Officer				Recipient's Project Manager			
Name:	Seth Seaberg			Name:	Seth Seaberg		
Address:	Trex Corporation. 13424 Beach Avenue			Address:	Trex Corporation 13424 Beach Avenue		
City, State, Zip:	Marina Del Rey, CA 90292			City, State, Zip:	Marina Del Rey, CA 90292		
Phone:	310-498-0480	Fax:	- -	Phone:	310-498-0480	Fax:	- -
E-Mail:	seth@trexa.com			E-Mail:	seth@trexa.com		

Selection Process Used	
<input checked="" type="checkbox"/> Competitive Solicitation	Solicitation #: PON-11-604
<input type="checkbox"/> First Come First Served Solicitation	

The following items should be attached to this GRF	
1. Exhibit A, Scope of Work	<input checked="" type="checkbox"/> Attached
2. Exhibit B, Budget Detail	<input checked="" type="checkbox"/> Attached
3. CEC 105, Questionnaire for Identifying Conflicts	<input checked="" type="checkbox"/> Attached
4. Recipient Resolution	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Attached
5. CEQA Documentation	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Attached

Agreement Manager_____
Date_____
Office Manager_____
Date_____
Deputy Director_____
Date

Exhibit A SCOPE OF WORK

TECHNICAL TASK LIST

Task #	CPR	Task Name
1	N/A	Administration
2		Pilot Plant Planning and Facility Preparation
3	X	Production Line Installation
4		Pilot Line Manufacturing Process Planning
5		Pilot Line Start-up
6		Pilot to Production Validation
7		Long-term Resource Planning

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Sara Elton Deborah Jelen Brenda Micetich	Electricore, Inc.	
2	Seth Seaberg Nick Sampson		PortTechLA Port of Los Angeles
3	Nick Sampson		
4	Nick Sampson		
5	Nick Sampson		Taranis Technologies LLC
6	Nick Sampson		Taranis Technologies LLC
7	Seth Seaberg		

GLOSSARY

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

Term/ Acronym	Definition
ARFVTP	Alternative and Renewable Fuel and Vehicle Technology Program
ATE	Automatic Test Equipment
CAD	Computer-Aided Design
CAM	Computer-Aided Manufacturing
CMM	Coordinated Measuring Machine
CNC	Computer Numerical Control Milling Machine
COTS	Commercial Off-the-Shelf
CPR	Critical Project Review
EOL	End-of-Line
ERP	Enterprise Resource Planning
EVs	Electric Vehicles
FTD	Fuels and Transportation Division
HVAC	Heating, Ventilation and Air-Conditioning
ICE	Internal Combustion Engine
PDM	Product Data Management
PPM	Project and Process Management
QA	Quality Assurance
Trexa	Trexa Corporation

Exhibit A

SCOPE OF WORK

Background:

Assembly Bill (AB) 118 (Núñez, Chapter 750, Statutes of 2007), created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). The statute authorizes the California Energy Commission (Energy Commission) to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state's climate change policies. AB 8 (Perea, Chapter 401, Statutes of 2013) re-authorizes the ARFVTP through January 1, 2024, and specifies that the Energy Commission allocate up to \$20 million per year (or up to 20 percent of each fiscal year's funds) in funding for hydrogen station development until at least 100 stations are operational.

The ARFVTP has an annual budget of approximately \$100 million and provides financial support for projects that:

- Reduce California's use and dependence on petroleum transportation fuels and increase the use of alternative and renewable fuels and advanced vehicle technologies.
- Produce sustainable alternative and renewable low-carbon fuels in California.
- Expand alternative fueling infrastructure and fueling stations.
- Improve the efficiency, performance and market viability of alternative light-, medium-, and heavy-duty vehicle technologies.
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets to alternative technologies or fuel use.
- Expand the alternative fueling infrastructure available to existing fleets, public transit, and transportation corridors.
- Establish workforce training programs and conduct public outreach on the benefits of alternative transportation fuels and vehicle technologies.

The statute requires the Energy Commission to adopt and update annually an investment plan to determine funding priorities and opportunities and describe how program funding will be used to complement other public and private investments. The Energy Commission adopted its most recent investment plan on May 08, 2013. A link to the 2013-2014 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program (CEC-600-2012-008-CMF) can be found at <http://www.energy.ca.gov/2012publications/CEC-600-2012-008/CEC-600-2012-008-CMF.pdf>.

On February 6, 2012, the California Energy Commission issued Solicitation PON-11-604 entitled "Advanced Vehicle Technology Manufacturing" under the ARFVT Program. This competitive grant solicitation was an offer to cost-share the development of manufacturing and/or assembly facilities in California that produce alternative fuel vehicles, advanced technology vehicles, and/or eligible vehicle components. To be eligible for funding under PON-11-604, the projects must also be consistent with the Energy Commission's ARFVTP Investment Plan updated annually. In response to PON-11-604, the Recipient submitted application #8 which was proposed for funding in the Energy Commission's Notice of Proposed Awards on September 27, 2012, and is incorporated by reference in this Agreement in its entirety.

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In the event of any conflict or inconsistency between the terms of the Solicitation and the terms of the Recipient's Application, the Solicitation shall control. In the event of any conflict or inconsistency between the Recipient's Application and the terms of Commission's Award, the Commission's Award shall control. Similarly, in the event of any conflict or inconsistency between the terms of this Agreement and the Recipient's Application, the terms of this Agreement shall control.

Problem Statement:

Electric vehicles are coming to market, bringing a supply base and reduced cost component set with them. Underserved markets include specific task based vehicles, especially in government and commercial markets. Current solutions are largely oriented around retrofit of Internal Combustion Engine (ICE) vehicles and are unsuitable due to weight, form factor, cost and usability. The Trexa Corporation Avatronex A1 platform addresses these issues with a Commercial Off-the-Shelf (COTS) solution, suitable for integration into a range of applications (vehicles).

Public investment into manufacturing and assembly facilities for electric vehicles (EVs) is required to accelerate the market introduction of new products and allow them to be cost-competitive with traditional ICE based vehicles.

Goals of the Agreement:

The goals of this Agreement are to:

1. Accelerate the market introduction of the Avatronex A1 platform to provide a cost-competitive all-electric platform which partners will integrate into vehicles for a variety of non-road and fleet applications which will help to reduce California's dependence on petroleum transportation fuels and carbon based emissions.
2. Develop a sustainable zero-carbon transportation platform in California.
3. Expand the number of EV platforms available to fleets, public agencies, businesses and citizens in California.
4. Create high paying manufacturing, assembly, engineering and support jobs in California.

Objectives of the Agreement:

The objectives of this Agreement are to:

1. Develop and install production equipment for 30,000 square feet of pilot manufacturing and assembly space for the Trexa platform.
2. Provide capacity to build/assemble Trexa platforms and internally developed Trexa applications (vehicle bodies that go on top of the Trexa platform) at the pilot scale of 100 units per month.
3. Immediately and directly support 26 jobs plus another 50 indirect jobs (including jobs at major suppliers and customers) during the project, and create over 100 new jobs once the facility is fully staffed and operational.

TASK 1 ADMINISTRATION

Task 1.1 Attend Kick-off Meeting

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

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The Recipient shall:

- Attend a “Kick-Off” meeting with the Commission Project Manager, the Grants Officer, and a representative of the Accounting Office. The Recipient shall bring its Project Manager, Agreement Administrator, Accounting Officer, and others designated by the Commission Project Manager to this meeting. The administrative and technical aspects of this Agreement will be discussed at the meeting. Prior to the kick-off meeting, the Commission Project Manager will provide an agenda to all potential meeting participants.

The administrative portion of the meeting shall include, but not be limited to, the following:

- Discussion of the terms and conditions of the Agreement
- Discussion of Critical Project Review (Task 1.2)
- Match fund documentation (Task 1.6) No work may be done until this documentation is in place.
- Permit documentation (Task 1.7)
- Discussion of subcontracts needed to carry out project (Task 1.8)

The technical portion of the meeting shall include, but not be limited to, the following:

- The Commission Project Manager’s expectations for accomplishing tasks described in the Scope of Work
- An updated Schedule of Products
- Discussion of Progress Reports (Task 1.4)
- Discussion of Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
- Discussion of the Final Report (Task 1.5)

The Commission Project Manager shall:

- Designate the date and location of the kick-off meeting.
- Provide an agenda to all meeting participants prior to the kick-off meeting.

Recipient Products:

- Updated Schedule of Products
- Updated List of Match Funds
- Updated List of Permits

Commission Project Manager Product:

- Kick-Off Meeting Agenda

Task 1.2 Critical Project Review (CPR) Meetings

The goal of this task is to determine if the project should continue to receive Energy Commission funding to complete this Agreement and to identify any needed modifications to the tasks, products, schedule or budget.

CPRs provide the opportunity for frank discussions between the Energy Commission and the Recipient. The Commission Project Manager may schedule CPRs as necessary, and CPR costs will be born by the Recipient.

Participants include the Commission Project Manager and the Recipient and may include the Commission Grants Officer, the Fuels and Transportation Division (FTD) team lead, other

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Energy Commission staff and Management as well as other individuals selected by the Commission Project Manager to provide support to the Energy Commission.

The Commission Project Manager shall:

- Determine the location, date, and time of each CPR meeting with the Recipient. These meetings generally take place at the Energy Commission, but they may take place at another location.
- Send the Recipient the agenda and a list of expected participants in advance of each CPR. If applicable, the agenda shall include a discussion on both match funding and permits.
- Conduct and make a record of each CPR meeting. One of the outcomes of this meeting will be a schedule for providing the written determination described below.
- Determine whether to continue the project, and if continuing, whether or not modifications are needed to the tasks, schedule, products, and/or budget for the remainder of the Agreement. Modifications to the Agreement may require a formal amendment (please see section 8 of the Terms and Conditions). If the Commission Project Manager concludes that satisfactory progress is not being made, this conclusion will be referred to the Transportation Committee for its concurrence.
- Provide the Recipient with a written determination in accordance with the schedule. The written response may include a requirement for the Recipient to revise one or more product(s) that were included in the CPR.

The Recipient shall:

- Prepare a CPR Report for each CPR that discusses the progress of the Agreement toward achieving its goals and objectives. This report shall include recommendations and conclusions regarding continued work of the projects. This report shall be submitted along with any other products identified in this scope of work. The Recipient shall submit these documents to the Commission Project Manager and any other designated reviewers at least 15 working days in advance of each CPR meeting.
- Present the required information at each CPR meeting and participate in a discussion about the Agreement.

Commission Project Manager Products:

- Agenda and a list of expected participants
- Schedule for written determination
- Written determination

Recipient Product:

- CPR Report(s)

Task 1.3 Final Meeting

The goal of this task is to closeout this Agreement.

The Recipient shall:

- Meet with Energy Commission staff to present the findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement.

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This meeting will be attended by, at a minimum, the Recipient, the Commission Grants Office Officer, and the Commission Project Manager. The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be two separate meetings at the discretion of the Commission Project Manager.

The technical portion of the meeting shall present an assessment of the degree to which project and task goals and objectives were achieved, findings, conclusions, recommended next steps (if any) for the Agreement, and recommendations for improvements. The Commission Project Manager will determine the appropriate meeting participants.

The administrative portion of the meeting shall be a discussion with the Commission Project Manager and the Grants Officer about the following Agreement closeout items:

- What to do with any equipment purchased with Energy Commission funds (Options)
- Any request the Energy Commission may make for specific “generated” data (if such data is not already provided in Agreement products)
- Need to document Recipient’s disclosure of “subject inventions” developed under the Agreement
- “Surviving” Agreement provisions
- Final invoicing and release of retention
- Prepare a schedule for completing the closeout activities for this Agreement.

Products:

- Written documentation of meeting agreements
- Schedule for completing closeout activities

Task 1.4 Monthly Progress Reports

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the research objectives of this Agreement on time and within budget.

The objectives of this task are to summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, and to form the basis for determining whether invoices are consistent with work performed.

The Recipient shall:

- Prepare a Monthly Progress Report which summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each progress report is due to the Commission Project Manager within 10 days of the end of the reporting period. The recommended specifications for each progress report are contained in Section 6 of the Terms and Conditions of this Agreement.

Product:

- Monthly Progress Reports

Task 1.5 Final Report

The goal of the Final Report is to assess the project’s success in achieving its goals and objectives, advancing science and technology, and providing energy-related and other benefits to California.

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The objectives of the Final Report are to clearly and completely describe the project's purpose, approach, activities performed, results, and advancements made in science and technology; to present a public assessment of the success of the project as measured by the degree to which goals and objectives were achieved; to make insightful observations based on results obtained; to draw conclusions; and to make recommendations for further projects and improvements to the FTD project management processes.

The Final Report shall be a public document. If the Recipient has obtained confidential Status from the Energy Commission and will be preparing a confidential version of the Final Report as well, the Recipient shall perform the following activities for both the public and confidential versions of the Final Report.

The Recipient shall:

- Prepare an Outline of the Final Report.
- Prepare a Final Report following the approved outline and the latest version of the Final Report guidelines which will be provided by the Commission Project Manager. The Commission Project Manager shall provide written comments on the Draft Final Report within fifteen (15) working days of receipt. The Final Report must be completed at least 60 days before the end of the Agreement Term.
- Submit one bound copy of the Final Report with the final invoice.

Products:

- Draft Outline of the Final Report
- Final Outline of the Final Report
- Draft Final Report
- Final Report

Task 1.6 Identify and Obtain Matching Funds

The goal of this task is to ensure that the match funds planned for this Agreement are obtained for and applied to this Agreement during the term of this Agreement.

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the Energy Commission budget for this task will be zero dollars, the Recipient may utilize match funds for this task. Match funds shall be spent concurrently or in advance of Energy Commission funds for each task during the term of this Agreement. Match funds must be identified in writing and the associated commitments obtained before the Recipient can incur any costs for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a letter documenting the match funding committed to this Agreement and submit it to the Commission Project Manager at least 2 working days prior to the kick-off meeting. If no match funds were part of the proposal that led to the Energy Commission awarding this Agreement and none have been identified at the time this Agreement starts, then state such in the letter. If match funds were a part of the proposal that led to the Energy Commission awarding this Agreement, then provide in the letter a list of the match funds that identifies the:
 - Amount of each cash match fund, its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied.
 - Amount of each in-kind contribution, a description, documented market or book value, and its source, including a contact name, address and telephone number and

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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 shall identify its owner and provide a contact name, address and telephone number, and the address where the property is located.

- Provide a copy of the letter of commitment from an authorized representative of each source of cash match funding or in-kind contributions that these funds or contributions have been secured. For match funds provided by a grant a copy of the executed grant shall be submitted in place of a letter of commitment.
- Discuss match funds and the implications to the Agreement if they are reduced or not obtained as committed, at the kick-off meeting.
- If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide the appropriate information to the Commission Project Manager if during the course of the Agreement additional match funds are received.
- Notify the Commission Project Manager within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved, in whole or in part, through a formal amendment to the Agreement and may trigger an additional CPR.

Products:

- A letter regarding match funds or stating that no match funds are provided
- Copy(ies) of each match fund commitment letter(s) (if applicable)
- Letter(s) for new match funds (if applicable)
- Letter that match funds were reduced (if applicable)

Task 1.7 Identify and Obtain Required Permits

The goal of this task 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. Although the Energy Commission budget for this task will be zero dollars, the Recipient shall budget match funds for any expected expenditures associated with obtaining permits. Permits must be identified in writing and obtained before the Recipient can make any expenditure for which a permit is required.

The Recipient shall:

- Prepare a letter documenting the permits, if any, required to conduct this Agreement and submit it to the Commission Project Manager at least 2 working days prior to the kick-off meeting.
- If there are no permits required at the start of this Agreement, then state such in the letter.
- If it is known at the beginning of the Agreement that permits will be required during the course of the Agreement, provide in the letter:
 - A list of the permits that identifies the:
 - Type of permit
 - Name, address and telephone number of the permitting jurisdictions or lead agencies
 - The schedule the Recipient will follow in applying for and obtaining these permits.
- Discuss the list of permits and the schedule for obtaining them at the kick-off meeting and develop a timetable for submitting the updated list, schedule and the copies of the

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permits. The implications to the Agreement 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 the Progress Reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, provide the appropriate information on each permit and an updated schedule to the Commission Project Manager.
- As permits are obtained, send a copy of each approved permit to the Commission Project Manager.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the Commission Project Manager within 5 working days. Either of these events may trigger an additional CPR.

Products:

- Letter documenting the permits or stating that no permits are required
- A copy of each approved permit (if applicable)
- Updated list of permits as they change during the term of the Agreement (if applicable)
- Updated schedule for acquiring permits as changes occur during the term of the Agreement (if applicable)

Task 1.8 Obtain and Execute Subcontracts

The goal of this task is for Recipients to identify any subcontracts required to carry out the tasks under this Agreement and to procure them consistent with the terms and conditions of this Agreement, the Recipient's own procurement policies and procedures, and applicable law and regulations. It will also provide the Energy Commission an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement and that the budgeted expenditures are reasonable and consistent with applicable cost principles.

The Recipient shall:

- Prepare a letter documenting the subcontracts required to conduct this Agreement, and submit it to the Commission Project Manager at least 2 working days prior to the kick-off meeting. If there are no subcontracts required at the start of this Agreement, then state such in the letter. If it is known at the beginning of the Agreement that subcontracts will be required during the course of the Agreement, provide in the letter:
 - A list of the subcontracts that describes the anticipated maximum budget and general scope of work for each,
 - A description of the procurement process to be used, and
 - The schedule the Recipient will follow in applying for and obtaining these subcontracts
- Submit a draft of the subcontract that will include a budget with the information required in the budget details to the Commission Project Manager for review and approval, and incorporate any changes recommended by the Commission Project Manager.
- Submit a final copy of the executed subcontract.

Products:

- Letter describing the subcontracts needed, or stating that no subcontracts are required
- Draft subcontracts
- Final subcontracts

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TECHNICAL TASKS

TASK 2 PILOT PLANT PLANNING AND FACILITY PREPARATION

The goal of this task is to establish architectural layout, pilot plant line layout, tooling and equipment needs and to re-confirm budget to meet pilot production goals.

The Recipient shall:

- Specify manufacturing equipment.
- Design the facility to house modular manufacturing.
- Procure equipment, modified shipping containers (containers), and materials for general facility improvements.
- Improve the facility and install equipment and containers for modular manufacturing.

Products:

- See Subtasks - Status of tasks will be presented in the Monthly Progress Report

TASK 2.1 Equipment Identification

The goal of this task is to identify manufacturing equipment, including equipment for the fabrication modules and the assembly line.

The Recipient shall:

- Identify off-the-shelf equipment, including computer numerical control (CNC) machines, metalworking equipment, 3D printers, and other fabrication equipment.
- Identify assembly line equipment.
- Identify vendors and negotiate terms for equipment.

Products:

- Finalized Equipment List

TASK 2.2 Design of Manufacturing Facility

The goal of this task is to design the facility; including designing improvements to the existing space and designing interior structural build-out.

The Recipient shall:

- Develop a floor plan and construction plan for 30,000 square feet of space including plans for;
 - General facility,
 - Office and common space modules,
 - Fabrication modules, and
 - Assembly line.
- Identify vendors and negotiate terms for;
 - Containers,
 - Materials for electrical, lighting, Heating, Ventilation and Air-Conditioning (HVAC) windows, doors, ceilings and floors.

Products:

- Modular Fabrication and office space floor plan
- Assembly line floor plan

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TASK 2.3 Purchase of Equipment and Building Materials

The goal of this task is to purchase all equipment for Task 2.1 and facility building materials in Task 2.2.

The Recipient shall:

- Receive and test equipment and facility construction materials.

Products:

- Invoices and delivery receipt for COTS equipment

TASK 2.4 Construction of Facility

The goal of this task is to improve the facility for general occupancy, integrate the containers with equipment as fabrication modules, and install the office space and fabrication modules according to the floor plan.

The Recipient shall:

- With the assistance of contractors, make modifications and improvements to the building, including modifications and improvements to electrical, lighting, HVAC, windows, doors, ceilings and floors, so that it can be occupied.
- Modify approximately 30 shipping containers to house offices, common areas, laboratories, and fabrication equipment.
- Install equipment in the containers.
- Arrange the containers inside the building centrally around the space identified for the production line.

Products:

- Photographs of container installation
- Photographs of modified building

TASK 3 PRODUCTION LINE INSTALLATION

[CPR will be held upon completion of this task per 1.2]

The goal of this task is to install the assembly line within the modular manufacturing environment.

The Recipient shall:

- Install assembly line equipment and systems.

Products:

- See Subtasks 3.1 through 3.2 - Status of tasks will be presented in the Monthly Progress Report

TASK 3.1 Assembly Line Build-Out Preparation

The goal of this task is to build the structural aspects of the assembly line.

The Recipient shall:

- Receive goods conformant with purchase orders.

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- Inspect and test inbound goods to verify fitness for purpose and compliance with specification.
- Leverage top level production planning document.
- Install control software to reflect production plan.
- Manage contractors' installation of modifications to facility's power, light, ventilation and waste disposal.

Products:

- Photographs of assembly line structural aspects

TASK 3.2 Equipment Installation

The goal of this task is to install equipment and validate its operation in module tests.

The Recipient shall:

- Receive and validate custom production and test equipment.
- Install and operate in test mode COTS equipment.
- Test and calibrate custom equipment including reprogramming where applicable.

Products:

- Photographs of assembly line with equipment in place

TASK 4 PILOT LINE MANUFACTURING PROCESS PLANNING

The goal of this task is to plan and prepare the manufacturing processes prior to initiating sequential production.

The Recipient shall:

- Create and maintain documentation for production process.
- Create and maintain documentation for quality process.
- Create and maintain documentation for workforce development.
- Implement software for materials management and production management.

Products:

- Production process and quality assurance plan

TASK 4.1 Interfacing of all Software and Hardware Systems

The goal of this task is to ensure that all manufacturing level software and hardware systems are fully functional as intended. Specifically, all computer-aided design (CAD), computer-aided manufacturing (CAM) and coordinated measuring machine (CMM) "handshakes" will be confirmed both virtually and via the execution of simple test parts.

The Recipient shall:

- Create and maintain task descriptions for module production and final assembly.
- Create standards for worker and production safety.
- Conduct training of workforce for equipment operation.
- Install server for production management and quality control software.
- Install CAM for automated production and fabrication.
- Install Project and Process Management (PPM).

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Products:

- None - Status of tasks will be presented in the Monthly Progress Report

TASK 4.2 Programming of all Automatic Test Equipment (ATE) and End-of-Line (EOL) Testers

The goal of this task is to program all ATE and EOL testers and to verify they are fully functional as intended.

The Recipient shall:

- Implement quality plan with test stations, work instructions, acceptance criteria.
- Confirm all ATE and EOL testers both virtually and via the execution of sample test protocols at the component and the sub-system level as appropriate.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

TASK 4.3 Calibration of all Tools and Equipment

The goal of this task is to calibrate all tools and equipment and to prepare calibration records and protocols.

The Recipient shall:

- Calibrate all tools and equipment and validate precision after installation.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

TASK 4.4 Checking of all Safety Equipment and Protocols

The goal of this task is to check all safety equipment and protocols and to prepare safety records and safety procedures.

The Recipient shall:

- Create safety procedures.
- Create safety training for operators.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

TASK 4.5 Programming of Software Systems

The goal of this task is to program the Product Data Management (PDM) / Enterprise Resource Planning (ERP) / Quality Assurance (QA) / Inventory Control software systems for the specific requirements of the pilot plant.

The Recipient shall:

- Set up software systems and configure them for best practices.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report.

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TASK 4.6 Creation of all Pilot Plant Operating Procedures and Documentation

The goal of this task is to prepare operating procedures and documentation in accordance with relevant guidelines. Operating documentation will also include production process control procedures, individual pilot line station work instructions and training policy.

The Recipient shall:

- Convert the production plan into a continuously-improving document detailing production processes.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report.

TASK 5 PILOT LINE START-UP

The goal of this task is to start the assembly line. The assembly line consists of the main assembly line with subsystems assembly stations positioned at intervals along the line.

The Recipient shall:

- Acquire materials for test runs of the production system.
- Use software to manage first batch production.

Products:

- Bill of materials
- Completed product first articles

Task 5.1 Purchase Pilot Line Materials

The goal of this task is to procure all material necessary to fulfill the complete series of pilot line start-up protocols in sub-tasks 5.2 through 5.4.

The Recipient shall:

- Receive materials from suppliers.
- Perform quality assurance on received materials.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

Task 5.2 Assembly Line Sequencing

The goal of this task is to determine how the assembly line will be optimally physically arranged by building test production vehicles on a unique basis.

The Recipient shall:

- Fabricate parts.
- Integrate major subsystems including battery, drive system, and chassis.
- Perform final assembly.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

Task 5.3 Subassembly Station Sequencing

The goal of this task is to start-up each individual pilot line station.

Exhibit A

SCOPE OF WORK

The Recipient shall:

- Fabricate parts.
- Integrate major subsystems including battery, drive system, and chassis.
- Optimize the physical arrangement of subassembly stations.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

TASK 5.5 Implement Software Systems

The goal of this task is to implement the software systems (programmed in sub-task 4.5) on each active station during sub-tasks 5.2 and 5.3, identify deficiencies in those control systems, and then optimize them.

The Recipient shall:

- Run trial production batches through control software.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

TASK 5.6 Quality Control

The goal of this task is concurrent and collaborative quality control improvements throughout sub-tasks 5.2 through 5.4 to ensure both continuous improvement and that a minimum quality standard is achieved on each station before commencement of Task 6.

The Recipient shall:

- Validate quality process with trial runs.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report.

TASK 6 PILOT TO PRODUCTION VALIDATION

The goal of this task is to operate the pilot line and investigate and affect the most efficient way to operate the pilot line while simultaneously ensuring targets for product creation timing, product cost and product quality are met.

The Recipient shall:

- Conduct a sample run, with timing of each step for efficiency evaluation.
- Review production processes and production documentation to ensure it reflects best practice.
- Test completed product.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report.

Task 6.1 Statistical Sample

The goal of this task is to establish and validate a Quality Plan. This may be done by taking a statistical sampling of defects and creating countermeasures to address defects.

Exhibit A

SCOPE OF WORK

The Recipient shall:

- Sample quality of components, modules and in line assembly of units.
- Field test post production units to confirm reliability and utility.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report.

TASK 6.2 Specification and Purchase of Material for Pilot Production

The goal of this task is to purchase all material necessary to fulfill the complete series of pilot line start-up protocols in sub-tasks 6.2 through 6.4.

The Recipient shall:

- Order sufficient materials for trial and pilot production.
- Use production control system to manage parts inventory.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

TASK 6.3 First Single Pass Line Run

The goal of this task is to run the line to make a unit in a single pass. This is repeated until the line will run a single pass successfully.

The Recipient shall:

- Produce a unit using assembly line from beginning to end without interruption.
- Evaluate and refine the production process based on efficiency and quality criteria.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

TASK 6.4 Continuous Line Run

The goal of this task is to make repeated sequential and uninterrupted line runs.

The Recipient shall:

- Implement target production process.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report.

TASK 6.5 Line Optimization

The goal of this task is to optimize the successfully operating line for speed, quality and cost improvements, including but not limited the sequence by which parts, subsystems, and assemblies are

The Recipient shall:

- Finalize optimization of line based on the results of Task 6.4.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report.

Exhibit A

SCOPE OF WORK

TASK 6.6 Quality Control

The goal of this task is concurrent and collaborative quality control improvements throughout sub-tasks 6.2 through 6.4 to ensure both continuous improvement and that quality is achieved over the fully functioning pilot line.

The Recipient shall:

- Specify an internal quality standard.
- Compare the results of the assembly line with the internal quality standards.
- Specify a continuous improvement process.

Products:

- None - Status of tasks will be presented in the Monthly Progress Report

TASK 7 LONG-TERM RESOURCE PLANNING

The Trexa production line is located in Berth 58 at City Dock 1 in the Port of Los Angeles. As part of an ongoing development, the Port of Los Angeles is interested in attracting tenants for advanced technology R&D, and the Trexa modular manufacturing will be a model for other future tenants in other buildings located on the parcel.

The Recipient shall:

- Create a process to help companies whose needs match the goals of this project to create similar modular manufacturing plants.
- Create training and safety procedures to govern use of modular manufacturing facilities.
- Create public relations campaigns and awareness programs to recruit additional tenants.
- Be an advanced vehicle technology manufacturing resource to future tenants of City Dock 1 and the Port of Los Angeles in general.

Products:

- Modular Manufacturing How-to Guide
- Presentation of selected EV subsystem performance data