

**GRANT REQUEST FORM (GRF)**

CEC-270 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION

New Agreement ARV-14-049 (To be completed by CGL Office)

Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Darren Nguyen	27	916-654-5144

Recipient's Legal Name	Federal ID Number
Zero Motorcycles, Inc.	20-4016877

Title of Project
California Manufacturing Acceleration for Electric Motorcycles

Term and Amount	Start Date	End Date	Amount
	6 / 1 / 2015	12 / 31 / 2018	\$ 1,009,220

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

Proposed Business Meeting Date	5 / 13 / 2015	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter	Darren Nguyen	Time Needed:	5 minutes

Please select one list serve. Select

**Agenda Item Subject and Description**

Proposed resolution approving Agreement ARV-14-049 with Zero Motorcycles for a \$1,009,220 grant to expand full electric motorcycles production capacity through scale redesign and manufacturing line improvements. These improvements include an expansion of Zero's manufacturing capability as well as increase in the production efficiency via strategic redesign of its manufacturing and engineering processes.

**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 15301(a)(b), 15332 section number:  
 Common Sense Exemption. 14 CCR 15061 (b) (3)  
 Explain reason why Agreement is exempt under the above section:  
 The project is an in-fill development consisting of minor alteration of an existing facility and mechanical equipment involving negligible or no expansion of use beyond that existing, plus new construction of small (dimensions) accessory structures. The project involves modification work to the interior of an existing industrial-zoned building consisting of the installation of manufacturing equipment. The interior alterations will not change the structure or expand the footprint of the existing facility. All interior alterations will be performed within the existing building and will not involve any increase in square footage. All power for the interior modifications will be provided from existing electrical panels. The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations. The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses. The project site has no value, as habitat for endangered, rare or threatened species. Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality. The project location can be adequately served by all required utilities and public services.
- 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)

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CALIFORNIA ENERGY COMMISSION



Legal Company Name:	Budget
	\$ 0
	\$ 0
	\$ 0

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

Legal Company Name:

**Budget Information**

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
ARFVTF	14/15	601.118G	\$1,009,220
Funding Source			\$
R&D Program Area:	Select Program Area	TOTAL:	\$1,009,220
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Recipient's Administrator/ Officer				Recipient's Project Manager			
Name:	Peter Herman			Name:	Kai Hypko		
Address:	380 El Pueblo Road			Address:	380 El Pueblo Road		
City, State, Zip:	Scotts Valley, CA 95066			City, State, Zip:	Scotts Valley, CA 95066		
Phone:	831-438-3500	Fax:	831-438-4900	Phone:	831-438-3500	Fax:	831-438-4900
E-Mail:	peter.herman@zeromotorcycles.com			E-Mail:	kai.hypko@zeromotorcycles.com		

**Selection Process Used**

<input checked="" type="checkbox"/> Competitive Solicitation	Solicitation #:	PON-14-604
<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		Administration
2		Analyze and Upgrade Engineering and Manufacturing Processes for 16MY Production Line
3	X	Initiate Improvements to Engineering and Manufacturing Processes to Expand Production Lines for 17MY Production
4		Data Collection and Analysis

### KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Kai Hypko - ZMC Eric Barton – ZMC Curt Sacks – ZMC	N/A	N/A
2	Abe Askenazi – ZMC Kai Hypko - ZMC Eric Barton - ZMC	N/A	N/A
3	Abe Askenazi – ZMC Kai Hypko - ZMC Eric Barton - ZMC	N/A	N/A
4	Abe Askenazi – ZMC Kai Hypko - ZMC Eric Barton - ZMC	N/A	N/A

### GLOSSARY

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

Term/ Acronym	Definition
ARFVTP	Alternative and Renewable Vehicle and Technology Program
CAM	Commission Agreement Manager
CPR	Critical Project Review
FTD	Fuels and Transportation Division
CEC	California Energy Commission
ZMC	Zero Motorcycles
CMA	California Manufacturing Acceleration

<b>Term/ Acronym</b>	<b>Definition</b>
SVP	Start of Volume Production
KPI	Key Performance Indicator
ZEV	Zero Emissions Vehicle
CVRP	Clean Vehicle Rebate Program
MY	Model Year, e.g.: 12MY, 13MY, 14MY, 15MY, 16MY, 17MY, 18MY
D&R motorcycle	“Durability & Refinement” motorcycles are prototype motorcycles built using pilot production line and used to primarily test manufacturing processes, collect durability information and further refine engineering designs to support manufacturing efficiency
Validation motorcycle	Prototype vehicles built using actual production tooling to validate the manufacturing protocol and manufacturing processes
ME / EE	Mechanical Engineering / Electrical Engineering
ID	Industrial Design
Dev. Purch.	Development Purchasing
Mfg.	Manufacturing
Recipient	Zero Motorcycles, Inc.
S&S	Strategy & Sustainability
AFV	Alternative Fuel Vehicle
CEQA	California Environmental Quality Act
GHG	Greenhouse gas
VINTS	Vehicle Identification Number Tracking System
ZEM	Zero Emissions Motorcycle

## **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 Energy Commission issued Solicitation PON-14-604 entitled “Advanced Vehicle Technology Manufacturing” under the ARFVT Program on September 5, 2014. This competitive grant solicitation was an offer to fund the development of advanced vehicle technology manufacturing facilities in California that produce zero- or near zero emission vehicles, or vehicle components. The resulting projects will expand alternative fuel vehicle and component manufacturing within California and advance ARFVTP’s goals to reduce GHG emissions, reduce petroleum use, and provide economic and job benefits. To be eligible for funding under PON-14-604, projects must also be consistent with the Energy Commission’s ARFVTP Investment Plan updated annually. In response to PON-14-604, the Recipient submitted application #1 which was proposed for partial funding in the Energy Commission’s Notice of Proposed Awards on February 25, 2015. PON-14-604 is hereby incorporated by reference into this Agreement in its entirety.

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 Energy Commission’s Award, the Energy 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**

In the past 20 years, significant portions of United States and especially California manufacturing base have moved elsewhere. Zero Motorcycles has proved that it is possible to reverse this trend and is currently successfully designing and building high performance electric motorcycles here in California. Zero Motorcycles had previously investigated and implemented manufacturing in Asia, only to choose to bring the manufacturing and assembly back to California. California manufacturing allows Zero Motorcycles to achieve higher quality and better process control by on-shoring rather than off-shoring.

With the California Energy Commission's support under this grant, Zero Motorcycles proposes to expand and scale their existing factory in Scotts Valley, CA, so that we can double electric motorcycle production capacity by the end of the project. By leveraging design and process improvements, along with the investment in capital equipment to reduce costs, Zero Motorcycles will manufacture competitive products with increased volume production in California. Currently, the main barrier to achieve widespread use and acceptance of our product is proving the value proposition of electric motorcycles to end-users. This will require continuing to level the playing field between electric vehicles and conventional internal combustion engine powered vehicles. While electric

motorcycles have unique advantages, comparing the two often result in electric vehicles lagging in two key aspects, range and retail price. Building overall efficiency into our motorcycles (resulting from increased production efficiency and capacity) will help create customer value parity ultimately resulting in widespread acceptance of our technology.

The Energy Commission funding is ideally suited for this kind of project and Zero Motorcycles is prepared to fully match the investment so we can leverage 21st century California clean-tech manufacturing to reach this goal. Timing is critical since widespread adoption of electric vehicles includes electric motorcycles which offer an attractive and affordable transportation market as an entry point for a wide variety of consumers.

### **Goals of the Agreement**

The overall goal of this Agreement is to create a program that will further expand Zero Motorcycles' full vehicle electric motorcycle production capacity and scale with systematic redesign and manufacturing line improvements over the period of the next two model years. Using a variety of engineering and manufacturing process improvements, Zero Motorcycles believes it can achieve a significant increase in manufacturing capacity by the end of the project.

### **Objectives of the Agreement:**

The objectives of this Agreement are to:

- Further improve design engineering and manufacturing processes for the production of electric motorcycles in Scotts Valley, CA and document the results
- Achieve a 15% improvement in production workflow (as measured by motorcycles per labor hour) via process and design updates
- Leverage capital expenditures to invest in additional production and sub-assembly lines
- Use the above factors to accomplish a significant increase in overall electric motorcycle manufacturing capacity by the end of the project

## **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. The Commission Agreement Manager (CAM) shall designate the date and location of this meeting and provide an agenda to the Recipient prior to the meeting.

### **The Recipient shall:**

- Attend a "Kick-Off" meeting with the CAM, the Commission Agreement Officer (CAO), and a representative of the Energy Commission Accounting

Office. The Recipient shall bring their Project Manager, Agreement Administrator, Accounting Officer, and any others determined necessary by the Recipient or specifically requested by the CAM to this meeting.

- Discuss the following administrative and technical aspects of this Agreement:
  - Agreement Terms and Conditions
  - Critical Project Review (Task 1.2)
  - Match fund documentation (Task 1.6) No reimbursable work may be done until this documentation is in place.
  - Permit documentation (Task 1.7)
  - Subcontracts needed to carry out project (Task 1.8)
  - The CAM's expectations for accomplishing tasks described in the Scope of Work
  - An updated Schedule of Products and Due Dates
  - Monthly Progress Reports (Task 1.4)
  - Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
  - Final Report (Task 1.5)

**Recipient Products:**

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

**Commission Agreement Manager Product:**

- Kick-Off Meeting Agenda

**Task 1.2 Critical Project Review (CPR) Meetings**

CPRs provide the opportunity for frank discussions between the Energy Commission and the Recipient. 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.

The CAM may schedule CPR meetings as necessary, and meeting costs will be borne by the Recipient.

Meeting participants include the CAM and the Recipient and may include the Commission Agreement Officer, the Fuels and Transportation Division (FTD) program lead, other Energy Commission staff and Management as well as other individuals selected by the CAM to provide support to the Energy Commission.

**The CAM 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. Prepare 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 CAM concludes that satisfactory progress is not being made, this conclusion will be referred to the Lead Commissioner for Transportation for his or her 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 CAM 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.

**CAM 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.  
This meeting will be attended by, at a minimum, the Recipient, the Commission Grants Office Officer, and the Commission Agreement 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 Agreement 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 Agreement Manager will determine the appropriate meeting participants. The administrative portion of the meeting shall be a discussion with the Commission Agreement Manager and the Grants Officer about the following Agreement closeout items:

- What to do with any equipment purchased with Energy Commission funds (Options)
- Energy Commission's request for specific "generated" data (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 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 Agreement 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.
- In the first Monthly Progress Report and first invoice, document and verify match expenditures and provide a synopsis of project progress, if match funds have been expended or if work funded with match share has occurred after the notice of proposed award but before execution of the

grant agreement. If no match funds have been expended or if no work funded with match share has occurred before execution, then state this in the report. All pre-execution match expenditures must conform to the requirements in 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 the Agreement's goals and objectives, advancing science and technology, and providing energy-related and other benefits to California.

The objectives of the Final Report are to clearly and completely describe the project's purpose, approach, activities performed, results, and advancements 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, if requested by the CAM.
- Prepare a Final Report following the latest version of the Final Report guidelines which will be provided by the CAM. The CAM 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:**

- Outline of the Final Report, if requested
- 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 Agreement 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 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 Agreement Manager if during the course of the Agreement additional match funds are received.
- Notify the Commission Agreement Manager within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved through a formal amendment to the Agreement and may trigger an additional CPR meeting.

**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 required to conduct this Agreement and submit it to the Commission Agreement 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 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 Agreement Manager.
- As permits are obtained, send a copy of each approved permit to the Commission Agreement Manager.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the Commission Agreement 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)
- A copy of each final approved permit (if applicable)

### **Task 1.8 Obtain and Execute Subcontracts**

The goal of this task is to ensure quality products and to procure subcontractors required to carry out the tasks under this Agreement consistent with the Agreement Terms and Conditions and the Recipient's own procurement policies and procedures. 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:**

- Manage and coordinate subcontractor activities.
- Submit a draft of each subcontract required to conduct the work under this Agreement to the Commission Agreement Manager for review.
- Submit a final copy of the executed subcontract.
- If Recipient decides to add new subcontractors, then the Recipient shall notify the CAM.

#### **Products:**

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

## **TECHNICAL TASKS**

### **TASK 2 – Analyze and Upgrade Engineering and Manufacturing Processes for 16MY Production Line**

The goal of this task is to redesign Zero's electric motorcycle product line to increase its manufacturing efficiency, optimize, and streamline the manufacturing processes for 16MY.

#### **The Recipient shall:**

- Review and analyze all engineering processes and redesign motorcycles for 16MY to increase manufacturability and improve final vehicle technology.
- Review, analyze, and improve manufacturing process to increase production efficiency and optimize facility utilization resulting in increased capacity.
- Identify capital equipment, tooling, asset management systems & software needed to reduce costs, improve efficiency & directly expand capacity.
- Purchase preproduction tooling, equipment, software, and materials needed for engineering & manufacturing process improvements.

- Prepare & submit an “Engineering and Manufacturing Process Report for 16MY” summarizing the engineering & manufacturing processes changes need for 16MY and listing the expected efficiency improvements and capacity gains.

**Products:**

- Photographs & description of 16MY validation motorcycles
- Engineering and Manufacturing Process Report for 16MY
- List of Equipment

**TASK 3 – Initiate Improvements to Engineering and Manufacturing Processes to Expand Production Lines for 17MY Production**

The goal of this task is to continue to implement the redesign and improvements in Zero’s electric motorcycle product line to increase its manufacturing efficiency as well as further optimize and expand the manufacturing processes to gain substantial improvements in production workflow in order to scale the model year production specific to 17MY.

**The Recipient shall:**

- Review all engineering processes and redesign motorcycles for 17MY to increase and improve manufacturability and final vehicle quality.
- Review and improve manufacturing process to increase 17MY production efficiency and optimize facility utilization resulting in increased capacity.
- Identify capital equipment, tooling, asset management systems & software needed to reduce costs, improve efficiency & directly expand capacity (including identifying additional items to offset manufacturing energy usage).
- Purchase preproduction tooling, equipment, software, etc. needed for engineering & manufacturing process improvement activities.
- Prepare & submit a “Process Improvement Report for 17MY” summarizing the engineering & manufacturing processes changes need for 17MY and listing the expected efficiency improvements and capacity gains.

**Products:**

- Photographs & description of 17MY D&R motorcycles
- Process Improvement Report for 17MY
- List of Equipment

**TASK 4 DATA COLLECTION AND ANALYSIS**

The goal of this task is to collect operational data from the project, to analyze that data for economic and environmental effects, and to include the data and analysis in the Final Report.

**The Recipient shall:**

- Develop data collection test plan.
- Troubleshoot any issues identified.
- Collect 6 months of throughput, usage, and operations data from the project including, but not limited to:
  - Maximum capacity of the new fueling system
  - Gallons of gasoline and/or diesel fuel displaced (with associated mileage information)
  - Expected air emissions reduction, for example:
    - Non-methane hydrocarbons, Oxides of nitrogen, Non-methane hydrocarbons plus oxides of nitrogen, Particulate Matter, Formaldehyde
  - Duty cycle of the current fleet and the expected duty cycle of future vehicle acquisitions
  - Specific jobs and economic development resulting from this project
- Identify any current and planned use of renewable energy at the facility.
- Identify the source of the alternative fuel.
- Describe any energy efficiency measures used in the facility that may exceed Title 24 standards in Part 6 of the California Code Regulations.
- Provide data on potential job creation, economic development, and increased state revenue as a result of expected future expansion.
- Provide a quantified estimate of the project's carbon intensity values for life-cycle greenhouse gas emissions.
- Compare any project performance and expectations provided in the proposal to Energy Commission with actual project performance and accomplishments.
- Collect data, information, and analysis described above and include in the Final Report.

**Products:**

- Data collection information and analysis shall be included in the Final Report

STATE OF CALIFORNIA

STATE ENERGY RESOURCES  
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: ZERO MOTORCYCLES, INC.

**RESOLVED**, that the State Energy Resources Conservation and Development Commission (Energy Commission) adopts the staff CEQA findings contained in the Agreement Request Form; and

**RESOLVED**, that the Energy Commission approves Agreement ARV-14-049 with **Zero Motorcycles, Inc.** for a **\$1,009,220** grant to expand full electric motorcycles production capacity through scale redesign and manufacturing line improvements. These improvements include an expansion of Zero's manufacturing capability as well as increase in the production efficiency via strategic redesign of its manufacturing and engineering processes; and

**FURTHER BE IT RESOLVED**, that the Executive Director or his/her designee shall execute the same on behalf of the Energy Commission.

**CERTIFICATION**

The undersigned Secretariat to the Commission 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 California Energy Commission held on May 13, 2015.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

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Harriet Kallemeyn,  
Secretariat