

**GRANT REQUEST FORM (GRF)**

CEC-270 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION

New Agreement ARV-18-027 (To be completed by CGL Office)

Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Chris Jenks	6	916-654-4201

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

Title of Project
Zero Motorcycles' California Manufacturing for NextGen Electric Powertrains and Motorcycles

Term and Amount	Start Date	End Date	Amount
	6 / 12 / 2019	10 / 31 / 2022	\$ 1,898,370

**Business Meeting Information**

<input type="checkbox"/> ARFVTP agreements \$75K and under delegated to Executive Director.			
Proposed Business Meeting Date	6 / 12 / 2019	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter	Chris Jenks	Time Needed:	5 minutes
Please select one list serve. Altfuels (AB118- ARFVTP)			

**Agenda Item Subject and Description**

ZERO MOTORCYCLES, INC. Proposed resolution approving Agreement ARV-18-027 with Zero Motorcycles, Inc. for a \$1,898,370 grant to implement a series of manufacturing changes to improve throughput and manufacturing capability and adopting staff's determination that this action is exempt from CEQA. (ARFVTP funding) Contact: Chris Jenks. (Staff presentation: 5 minutes)

**California Environmental Quality Act (CEQA) Compliance**

- 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 .
- 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 section number:

☐ Common Sense Exemption. 14 CCR 15061 (b) (3)

Explain reason why Agreement is exempt under the above section:  
 The project will implement manufacturing changes including installing new equipment to deploy new manufacturing capacity for electric motorcycles. The project will be a minor alteration of an existing facility with no expansion of existing or former use. The project is contained within an existing facility. Exemption 15301 exempts minor alterations of existing facilities.

☐ 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
TBD - Production facility improvements	\$ 45,000
TBD - Administrative support and data collection	\$ 75,000
	\$

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

Legal Company Name:

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**Budget Information**

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
ARFVTP	17/18	601.118J	\$1,898,370
ARFVTP	18/19	601.118K	\$0
Funding Source			\$
Funding Source			\$
Funding Source			\$
R&D Program Area:	Select Program Area	TOTAL:	\$1,898,370
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Recipient's Administrator/ Officer				Recipient's Project Manager			
Name:	Jeremy Lamande			Name:	Joe Wismann		
Address:	Zero Motorcycles, Inc. 380 El Pueblo Road			Address:	Zero Motorcycles, Inc. 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:	Jeremy.Lamande@zeromotorcycles.com			E-Mail:	Joe.Wismann@zeromotorcycles.com		

**Selection Process Used**

<input checked="" type="checkbox"/> Competitive Solicitation	Solicitation #: GFO-18-605
<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	X	Build Z-Force Electric Motor Production Line for MY21 Production
3		Improve Manufacturing Processes and Retool Motorcycle Production Line for MY21 Production
4		Install Full Motorcycle Production Line for Platform Update and Capacity Increase on MY22 Production
5	X	Data Collection and Analysis

### KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Joe Wismann, Marian Weston, Eric Barton, Curt Sacks, Jay Friedland – Zero Motorcycles	N/A	N/A
2	Abe Askenazi, Brian Wismann, Ryan Biffard, Steve Salyer, Joe Wismann, Yad Sidhu, Marian Weston – Zero Motorcycles	N/A	N/A
3	Abe Askenazi, Brian Wismann, Steve Salyer, Joe Wismann, Yad Sidhu, Marian Weston – Zero Motorcycles	N/A	N/A
4	Abe Askenazi, Brian Wismann, Steve Salyer, Joe Wismann, Yad Sidhu, Marian Weston – Zero Motorcycles	N/A	N/A
5	Abe Askenazi, Joe Wismann, Yad Sidhu, Marian Weston, Eric Barton – Zero Motorcycles	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 Fuel and Vehicle Technology Program
CAM	Commission Agreement Manager
CPR	Critical Project Review
FTD	Fuels and Transportation Division
NextGen	Next Generation ZEV motorcycles and ZEV Powertrains Project
ZEV	Zero-Emission Vehicle
MY	Model Year, e.g.: MY15, MY16, MY17, MY18, MY19, MY20, MY21, MY22
Validation motorcycle	Vehicles built using actual production tooling to validate the manufacturing protocol and manufacturing processes
OEM	Original Equipment Manufacturer (Vehicles)

## 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-authorized the ARFVTP through January 1, 2024.

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 GFO-18-605 entitled “Zero-Emission Vehicle and Zero-Emission Vehicle Infrastructure Manufacturing” under the ARFVTP on December 19, 2018. This competitive grant solicitation was an offer to fund projects that will support the manufacture of zero-emission vehicle (ZEV) and ZEV infrastructure technologies. To be eligible for funding under GFO-18-605, the projects must also be consistent with the Energy Commission’s ARFVTP Investment Plan. In response to GFO-18-605, the Recipient submitted Application #5, which was proposed for funding in the Energy Commission’s Notice of Proposed Awards on April 11, 2019. GFO-18-605 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 25 years, significant portions of the manufacturing base in California have moved elsewhere. Zero Motorcycles has worked to reverse this trend and is currently successfully designing and building high performance electric motorcycles and powertrains in California. Zero Motorcycles had previously investigated and implemented motorcycle manufacturing in Asia, but chose to bring its manufacturing and assembly back to California to allow higher quality and better process control to be achieved due to on-shoring rather than off-shoring. This is also critical for one of their key powertrain components, the Zero Motorcycles-developed Z-Force electric motor. Zero Motorcycles developed motors for their motorcycles in 2011 under Energy Commission grant ARV-10-013 and prototype motors were built at a small testing facility in California. The manufacture of the motors was subsequently outsourced to China due to lower cost and insufficient space at the California facility. Zero Motorcycles is using these electric motors for their own ZEV production and is also providing them as a ZEV component to a wide variety of original equipment manufacturer (OEM) customers.

With the California Energy Commission's support under this grant, Zero Motorcycles will expand and scale its existing factory in Scotts Valley, CA to bring the manufacturing of its Z-Force electric motors back to California and double Zero Motorcycles’ overall 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 ZEV powertrain products and new ZEV motorcycles with increased volume production in California.

Currently, the main barrier to widespread use and acceptance of Zero Motorcycles’ vehicle 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 results in electric vehicles lagging in two key aspects: range and retail price. Increased production efficiency and capacity and in-house electric motor production will help create customer value parity, ultimately resulting in widespread acceptance of Zero Motorcycles’ technology.

**Goals of the Agreement:**

The two goals of this Agreement are to create a program that will further expand Zero Motorcycles' electric motorcycle production capacity and scale enabled by systematic redesign and manufacturing line improvements over the period of two model years (MY), and for Zero Motorcycles to begin manufacturing its Z-Force electric motors in California and then expand this production line to meet the volume of Zero Motorcycles and its OEM customers. Using a variety of engineering and manufacturing process improvements and by placing retooled and new manufacturing lines into production, Zero Motorcycles believes it can achieve a doubling of its motorcycle manufacturing capacity by the end of the project and also to start manufacturing Z-Force motors in California. Zero Motorcycles is prepared to fully match the Energy Commission's investment to leverage 21st century California clean-tech manufacturing to reach these goals.

**Objectives of the Agreement:**

The objectives of this Agreement are to:

- Further improve design for manufacturing and manufacturing processes for the production of electric motorcycles and electric vehicle powertrains in the existing Zero Motorcycles plant in Scotts Valley, CA, and document the results.
- Bring Z-Force electric motor manufacturing back to California and scale the production to meet the volume requirements of Zero Motorcycles and its OEM Powertrain customers.
- Achieve a 25% 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 double electric motorcycle manufacturing capacity to reach an overall facility capacity of 12,000 motorcycles per year by MY22, up from 6,000 in MY18.

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

**TECHNICAL TASKS****TASK 2: BUILD Z-FORCE ELECTRIC MOTOR PRODUCTION LINE FOR MY21 PRODUCTION**

The goal of this task is to migrate production of Z-Force motors to Zero Motorcycles' new California motor production line. Part of the task will be preparing the facility for manufacturing line build out, and install the equipment in time to validate the Z-Force Motor production manufacturing line to produce Z-Force motors for MY21. After the facility is ready, the final goal of this task is to use the installed manufacturing line to produce a number of MY21 validation motors to test performance of the completed assembly line, and then to begin full production for Zero Motorcycles and other OEM powertrain customers.

**The Recipient shall:**

- Make necessary building facility modifications to support the installation of the Z-Force motor manufacturing equipment and production line.
- Order and procure the necessary equipment and materials for establishment of the Z-Force motor manufacturing line.
- Manage the installation, work flow logistics, manufacturing execution software installation, and asset management systems.
- Install engineering systems management, asset management systems and software, and establish production line protocol.
- Produce validation Z-Force motors from the production line while testing protocol compliance as well as performance of new manufacturing line.
- Produce at least 20 Z-Force validation motors built on the motor manufacturing line.

- Prepare and submit Z-Force Motor Manufacturing Line Performance Report for MY21 analyzing performance (efficiency) and capacity of the new production line. This report shall also include the following:
  - Photographs and description of MY21 Z-Force Validation Electric Motors
  - Photographs and description of MY21 Z-Force Electric Motor Production Line
  - Production line protocol and validation results

**Products:**

- Z-Force Motor Manufacturing Line Performance Report for MY21

**TASK 3: IMPROVE MANUFACTURING PROCESSES AND RETOOL MOTORCYCLE PRODUCTION LINE FOR MY21 PRODUCTION**

The goal of this task is to implement improvements in Zero Motorcycles' electric motorcycle California product line to increase its manufacturing efficiency as well as further optimize and expand the manufacturing processes to gain substantial improvements in production workflow to scale the model year production specific to MY21. Manufacturing capacity for MY21 is expected to increase to 7,500-8,000 motorcycles compared to the 6,000 baseline in MY18.

**The Recipient shall:**

- Review all engineering designs together with the corresponding manufacturing processes for MY21 to increase and improve manufacturability and final vehicle quality.
- Review and improve manufacturing processes to increase MY21 production efficiency and optimize facility utilization resulting in increased capacity.
- Identify capital equipment, asset management systems and software needed to reduce costs, improve efficiency and directly expand capacity (including identifying additional items to offset manufacturing energy usage).
- Identify sub-assembly and battery production improvements for improving overall cycle time and utilization.
- Purchase equipment, software, etc. needed for manufacturing process improvement activities.
- Produce at least 10 validation motorcycles built on MY21 manufacturing line.
- Prepare and submit a Manufacturing Process Improvement Report for MY21 summarizing the manufacturing processes changes needed for MY21 and listing the expected efficiency improvements and capacity gains. This report shall include, but is not limited to:
  - Photographs and description of MY21 validation motorcycles
  - Photographs and description of MY21 Production Line

**Products:**

- Manufacturing Process Improvement Report for MY21

**TASK 4: INSTALL FULL MOTORCYCLE PRODUCTION LINE FOR PLATFORM UPDATE AND CAPACITY INCREASE ON MY22 PRODUCTION**

The goal of this task is to prepare the Scotts Valley facility for manufacturing line build out, and install the equipment for the MY22 production manufacturing line. After the facility is ready, the final goal is to use the installed manufacturing line to produce a number of MY22 validation motorcycles to test performance of the completed assembly line. Manufacturing capacity for MY22 is expected to increase to 12,000 motorcycles.

**The Recipient shall:**

- Make necessary building facility modifications to support the installation of the manufacturing equipment and full production line.
- Order and procure the necessary equipment and materials for establishment of the manufacturing line.
- Manage the work flow logistics, manufacturing execution software installation, and asset management systems.
- Install engineering systems management, asset management systems and software, and establish production line protocol.
- Produce validation motorcycles from the full production line while testing protocol compliance as well as performance of new manufacturing line.
- Produce at least 10 validation motorcycles built on MY22 manufacturing line.
- Prepare and submit Manufacturing Line Performance Report for MY22 analyzing performance (efficiency) and increased capacity of new production line. This report shall include, but is not limited to:
  - Photographs and description of MY22 Validation motorcycles
  - Photographs and description of MY22 Production Line

**Products:**

- Manufacturing Line Performance Report for MY22

**TASK 5: 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 a data collection outline and plan.
- Identify key project issues encountered and resolution of the issues.
- Collect a minimum of 6 months of project and operations data.

- Identify the number and description of units produced from product beta testing and validation through commercial production. The Recipient shall also characterize the use of these products after the project.
- Provide data on specific jobs and economic impact as a direct result of the project. Additionally, provide estimates of future jobs, economic impact, and revenues to the state and local governments.
- Describe the market(s) for the manufactured products, and compare the market status from the time of the original project proposal to the time of the project's completion.
- Provide a projection of the number of units to be manufactured per year, for the products identified in the original application, 5 years after the completion of the project. The Recipient shall also provide assumptions for projected growth.
- Compare project performance and expectations provided in the original project proposal with actual project performance, results, and accomplishments.
- Collect data, information, and analysis described above and include in the Final Report.

**Products:**

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

**[CPR WILL OCCUR DURING THIS TASK. See Task 1.2 for details.]**



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 or Amendment Request Form (as applicable); and

**RESOLVED**, that the Energy Commission approves Agreement ARV-18-027 with Zero Motorcycles, Inc. for a \$1,898,370 grant to implement a series of manufacturing changes to improve throughput and manufacturing capability and adopting staff's determination that this action is exempt from CEQA; 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 June 12, 2019.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

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Cody Goldthrite,  
Secretariat