

**Texas Commission on Environmental Quality
New Technology Research & Development (NTRD) Program
Monthly Project Status Report**

Contract Number: 582-11-13471-2019
Grantee: Boulder Electric Vehicle, Inc. (BEV)
Report for the Monthly period: October 2011 **Date Submitted:** 11/8/2011

Section I. Accomplishments

Provide a bulleted list of project accomplishments as well as a description of their importance to the project.

- Delivery order for the 18 test vehicles has been determined with an eye to the variations in the engineering involved for each separate build out. The delivery order will be as follows: the first 3 being delivery trucks and going to the three city partners, the next 6 going to FedEx. This allows the first 9 vehicles to be exactly the same except for exterior “wraps”. The next 3 will be to the city partners as flat bed build outs, the following 3 will be to the city partners as service body build outs and the last 3 to UPS.
- A trip was taken to Detroit for the “Engine Expo” trade show which allowed one of our engineers to meet with an additional controller supplier and also meet with a British motor supplier. The Oregon based controller supplier will be able to meet our needs however we are unsure if the British based engine supplier can accommodate our demand for the additional 9 units. Even more unclear is whether they could scale for future demand. This trip to Detroit saved us significant time and money over going all the way to England for a meeting and doubling the trip time to go all the way to Oregon as well. In addition no entrance fees for the trade show were needed as our engineer was able to obtain a complimentary pass.
- A custom extrusion was sourced and priced for aluminum stringers inside the frame of the vehicle. This will cut about 16 hours off the fabrication time for our chassis/frames. This will be implemented on the last 9 of the 18 test vehicles.
- Additional parts were ordered and secondary vendors found for several of the fastener parts.
- Many of the custom engineered and fabricated components were put through final design review and out to vendors for fabrication. Quantity pricing was arranged as well.
- Additional tooling and process improvement implemented on the joining procedures for various upper body components.
- A great deal of communication has occurred between FedEx and BEV including site visits, spec review and ride and drives at our facilities by FedEx personnel.

Indicate which part of the Grant Activities as defined in the grant agreement, the above accomplishments are related to:

- All of the above accomplishments are geared towards the successful accomplishment of Task 2, building the test vehicles.

Section II: Problems/Solutions

Problem(s) Identified: Report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project

- a) A glitch in the main control unit for logging that has to do with accurate counting of the miles accumulated (odometer) has been seen, repeated and is in the process of being solved. This *must* be solved in order to have an accurate mileage gauge for logging the miles of the test vehicles.
- b) We are still working on finding a second motor/controller manufacturer as reported in last month's report. We think we have line of sight to two or three possible solutions.

Proposed Solution(s): Report any possible solution(s) to the problem(s) that were considered/encountered

- a) The odometer problem mentioned above has had 8 separate revisions of software coded tried which have not yet solved the problem. This involves taking the revolutions per minute (RPMs) from the control module and turning the information into miles accumulated; however the refresh rate seems to be too slow at speeds under 30 miles per hour. We are now working on a hardware/software design which will take the RPMs directly from the antilock brake system wheel speed sensors. We anticipate this problem being solved during the month of November.

Action(s) Conducted and Results: Describe the action(s) taken to resolve the problem(s) and its effect

- a) We have sent a wheel and a speed sensor to the vendor for testing and implementation into the board revisions. Vendor anticipates problem being resolved during the month of November.
- b) Second controller has been sourced from two separate suppliers. A secondary motor supply can also be sourced from up to 6 separate suppliers and we are at this time comparing prices, delivery times, torque specs and with one eye towards the commercialization plan we are also considering whether or not each of these suppliers could provide us with minor scale of quantities and if so how soon.

Section III. Goals and Issues for Succeeding Period:

Provide a brief description of the goal(s) you hope to realize in the coming period and identify any notable challenges that can be foreseen

We hope to have all of the axle sets arriving. We plan on having all fasteners, tapes glues in stock for production line. We also plan on having additional new hires, new tooling and vehicle tag, title and delivery methods worked out.

Date: 11/8/2011

Authorized Project Representative's Signature

NOTE: *Please attach any additional information that you feel should be a part of your report or that may be required to meet the deliverable requirements for tasks completed during this reporting period.*