## **Federal Assistance Reporting Instructions**

The Progress Report must provide a concise narrative assessment of the status of work and include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. The DOE award number and name of the recipient:

DOE =EE0004199 Recipient name: Industrial Development Authority of the City of Danville, Inc.

2. The project title and name of the project director/principal investigator.

Advance Battery Manufacturing (VA)
Principal Investigator: Jeremy Stratton

3. Date of report and period covered by the report. January 28, 2013 Report covers October 1, 2012 – December 31, 2012

4. A comparison of the actual accomplishments with the goals and objectives established for the period and reasons why the established goals were not met.

LiFeBATT has concentrated its recent testing and evaluation on the safety of its batteries. There appears to be a good margin of safety with respect to overheating of the cells and the cases being utilized for the batteries are specifically designed to dissipate any heat built up during charging. This aspect of LiFeBATT's products will be even more fully investigated, and assuming ongoing positive results, it will become a major component of marketing efforts for the batteries.

LiFeBATT has continued to receive prismatic 20 Amp hour cells from Taiwan. Further testing continues to indicate significant advantages over the previously available 15 Ah cells. Battery packs are being assembled with battery management systems in the Danville facility. Comprehensive tests are underway at Sandia National Laboratory to provide further documentation of the advantages of these 20 Ah cells. The company is pursuing its work with Hybrid Vehicles of Danville to critically evaluate the 20 Ah cells in a hybrid, armored vehicle being developed for military and security applications. Results have been even more encouraging than they were initially.

5. A discussion of what was accomplished under these goals during this reporting period, including major activities, significant results, major findings or conclusions, key outcomes or other achievements. This section should not contain any proprietary data or other information not subject to public release. If such information is important to reporting progress, do not include the information, but include a note in the report advising the reader to contact the Principal Investigator or the Project Director for further information.

LiFeBATT is expanding its work with several OEM customers to build a worldwide distribution network. These customers include a major automotive consulting group in the U.K., an Australian maker of luxury off-road campers, and a number of makers of E-bikes and scooters.

LiFeBATT continues to explore the possibility of working with nations that are woefully short of infrastructure. Negotiations are underway with Siemens to jointly develop a system for using photovoltaic generation and battery storage to supply electricity to communities that are not currently served adequately.

The IDA has continued to monitor the progress of LiFeBATT's work to ensure that all funds are being expended wisely and that matching funds will be generated as promised. The company has also remained current on all obligations for repayment of an IDA loan and lease payments for space to the IDA.

A commercial venture is being formed to utilize the LiFeBATT product for consumer use in enabling photovoltaic powered boat lifts. Field tests of the system have proven to be very effective and commercially promising. This venture is expected to result in significant sales within the next six months.

6. Cost Status. Show approved budget by budget period and actual costs incurred. If cost sharing is required break out by DOE share, recipient share and total costs.

The monthly breakdown of expenses is attached for your review.

- 7. Schedule Status. List milestones, anticipated completion dates and actual completion dates. If you submitted a project management plan with your application, you must use this plan to report schedule and budget variance. You may use your own project management system to provide this information.
  - The company is continuing to assemble battery packs to fill orders for both evaluation purposes and to begin to supply ongoing commercial demand. Large users may do their own assembly using intellectual property licensed by LiFeBATT for products that it supplies.
  - The electronics technician hired six months ago to provide assistance with battery management system wiring and installation has continued to prove his worth. System telemetry continues to be improved and become more reliable.
  - The IDA has continued to advise LiFeBATT not to lease additional space until it is absolutely essential. Strict control of cash flow has kept the company solvent and current with its ongoing obligation.
  - This status remains essentially unchanged since the last report, but the level of activity continues to increase.

8. Any changes in approach or aims and reasons for change. Remember significant changes to the objectives and scope require prior approval by the contracting officer.

No changes in approach or aims to the project.

9. Actual or anticipated problems or delays and actions taken or planned to resolve them.

The problems that the company faces are generally associated with cash flow. As the business increases, working capital becomes a more serious constraint. The IDA is able to assist LiFeBATT in dealing with inventory expense, and it is working with a local foundation to secure additional financing for working capital. Unfortunately, the attempt to attract significant venture capital from the first source has not been successful. The company is attempting to locate other potential investors.

10. Any absence or changes of key personnel or changes in consortium/learning arrangement?

LiFeBATT has appointed Dr. Donald Gerhardt as its new CEO. Dr. Gerhardt had been working with the company as a consultant, and he brings a very strong background in value engineering to the operation. Gerhardt has become an equity owner in the business, and this appointment is proving to be of significant value to the ongoing development of LiFeBATT. Dr. Gerhardt has been directly involved in the effort to apply value engineering to cell manufacturing in order to reduce the cost of the batteries assembled from the LiFePO<sub>4</sub> cells. Without significant cost reduction, the full commercial value of these products will be difficult to achieve.

11. A description of any product produced or technology transfer activities accomplished during this reporting period, such as?

The joint development with U. S. Green Energy to produce a photovoltaic LED exterior lighting system continues to be very promising. This product will be marketed jointly by U. S. Green Energy and LiFeBATT. Although it has been previously reported, this project continues show significant promise. This joint effort with U. S. Green Energy has led to the boat lift product.

A. Publications (list journal name, volume, issue); conference papers; or other public releases of results. Attach or send copies of public releases to the DOE Program Manager identified in Block 15 of the Assistance Agreement Cover Page.

No publications or conference papers or public release occurred during this reporting period.

B. Web site or other Internet sites that reflect the results of this project?

Http://www.lifebatt.com The website continues to be updated on a regular basis.

C. Networks or collaborations fostered?

LiFeBATT is working with U.S. Green Energy Corporation of Danville on providing lithium ion phosphate batteries for USGE's solar integrated building products for commercial and residential uses and has expanded that work to include street and security lighting products.

LiFeBATT is continuing its collaboration with Danville Community College to train certificated technicians to assemble batteries and battery packs.

LiFeBATT has negotiated a distribution agreement with Toyota Tsusho for Europe.

LiFeBATT continues to work with the Virginia Science Center to demonstrate electric bikes.

LiFeBATT has entered into a collaborative agreement with Hybrid Vehicles of Danville Inc. to supply batteries for HVOD's armored vehicles.

LiFeBATT has introduced a photovoltaic powered boat life system for consumer marketing.

D. Technologies/Techniques:

None to report for this period.

E. Inventions/Patent Applications.

None to report for this period.

F. Other products, such as data or databases, physical collections, audio or video, software or netware, models, education aid or curricula, instruments or equipment.

No significant changes since the last report.

## **Special Status Report**

The recipient must report the following events by e-mail as soon as possible after they occur:

1. Development that have a significant favorable impact on the project.

Progress continues to be steady and at a pace that the company can manage without become overly leveraged.

2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE To respond to questions relating to such events from the public. The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:

a. Any single fatality or injuries requiring hospitalization of five or more individuals.

There are none to report.

b. Any significant environmental permit violation.

There are none to report.

c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health Statutes.

There are none to report.

d. Any incident which causes a significant process or hazard control system failure.

There are none to report.

e. Any event which is anticipated to cause a significant schedule slippage or cost increase.

There are no new ones to report this period.

f. Any damage to Government-owned equipment in excess of \$50,000.

There are none to report.

g. Any other incident that has the potential for high visibility in the media.

If the private investment occurs, this event will be publicized.

## **DISCLAIMER**

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