PMC-EF2a

(2/06/02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION

RECIPIENT: PolyPlus Battery Company **STATE:** CA

PROJECT TITLE : Manufacturing of Protected Lithium Electrodes for Advanced Li-Air, Li-Water and Li-S Batteries

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-000560	DE-EE0005757	GFO-0005757-001	GO5757

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
B3.6 Small-scale research and development, laboratory operations, and pilot projects	Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rational for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to PolyPlus Battery Company to perform laboratory research and development activities to develop the manufacturing process for lithium-based batteries and integral ceramic membranes.

PolyPlus Battery Company would advance protected lithium electrodes (PLEs) for lithium-air, lithium-water and lithium-sulfur batteries. PolyPlus would build PLEs manually to initiate testing of the membranes. The work would include mechanical testing, performance and stability optimization of the 1 sq. inch membranes, pilot line production of the PLEs, and electrochemical evaluation of PLEs in the batteries. Based on test results, performance and quality test protocols would be defined for the technology scale-up.

The work would demonstrate scalability of membranes up to 2 sq. inches. Ceramic membranes would be evaluated in the laboratory and the pilot production stages. Benefits would be calculated and included in the market assessment. The recipient would conduct a feasibility study to ensure the production capability of thousands of membranes per day, which would be necessary for commercialization. The work would be performed in laboratories and manufacturing facilities at three locations.

Work would be performed at existing facilities and laboratories at the following locations:

PolyPlus Battery Company is located in a commercialized area at 2424 6th Street, Berkeley, California 94710.

Corning Incorporated would perform work at the Sullivan Park R&D Center, NA, Corning, New York, 14831. It is a research and development complex, located near open space and undeveloped land.

Johnson Controls Inc (JCI) would perform work at the University of Wisconsin-Milwaukee Campus, UW-Milwaukee Engineering and Mathematical Sciences building, Rooms E175 and 810, located at 3200 North Cramer Street, Milwaukee, Wisconsin 53211. It is located adjacent to university buildings and residential housing to the west.

PolyPlus, Corning, and JCI have completed R&D questionnaires addressing the protocols for laboratory safety, risk management, chemical handling and waste disposal. PolyPlus, Dow Corning, and JCI would comply with standard safety procedures and have appropriate safety equipment available in all laboratories. PolyPlus, Dow Corning, and Johnson Controls have all applicable permits in place to conduct research on site. No additional permits are needed

for project activities. The laboratory general safety procedures would be followed and have routine safety inspections performed.

Lithium metal and non-aqueous solvents would be used as material components. All handling of hazardous materials would occur in the laboratory at PolyPlus and would follow its hazardous material disposal practices. Employees are trained in the proper use, storage, handling and disposal of the materials and proper safety equipment would be used. PolyPlus has Hazardous Materials Storage and Hazardous Waste Generator permit (#109177) with the City of Berkeley, California and is registered for hazardous waste with the California State Environmental Protection Agency (#CAL00015281).

Based on review of proposed project information and the above analysis, DOE has determined the research would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with the actions contained in DOE categorical exclusion A9 "Information gathering, analysis, and dissemination," and B3.6 "small-scale research and development," and is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

Diana Scott 9.4.2012

DOE Share: $8,999,920
Cost Share: $3,587,090
Total Project Cost: $12,587,010

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By Lori Gray / Lori Gray Date: 9/4/2012
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

☐ Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
☐ Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager