



U.S. Department of Energy Categorical Exclusion Determination Form



Program or Field Office: Office of Energy Efficiency and Renewable Energy:
Phase III Xlerator Program

Funding Opportunity Number DE-FOA-0000397

Applicant Name: Faraday Technology, Inc.

Location: Clayton, OH

Project Title Electrodeposited Mn-Co Alloy Coating for Solid Oxide Fuel
Cell Interconnects

Proposed Action or Project Description American Recovery and Reinvestment Act: ☐

Commercialization of solid oxide fuel cells requires low-cost components, materials and manufacturing processes. Specifically, the interconnect material and coating used in solid oxide fuel cells represent 45% of the total material cost for the typical stack; therefore, it is desirable that new manufacturing technologies be developed that effectively increase system durability while decreasing production costs. During Phase I of the program, Faraday Technology, Inc., validated that the electrodeposition process can produce uniform dense, crack-free, well-adhered manganese cobalt alloy coatings of various composition on a 2"x2" stainless steel interconnect surface. A preliminary economic analysis, based on a batch manufacturing electrodeposition process, demonstrated that the innovative coating technology can meet DOE's high volume target of 1,600,000 plates per annum at a cost of approximately \$1.87 per interconnect. Faraday Technology, Inc., proposes to continue the optimization and tuning of the electrodeposition process parameters for high-throughput, large scale interconnect coating manufacturing of dual-sided, and grooved substrates. Additionally, chrome diffusion would be mitigated by identifying the controlling mechanism and minimizing the diffusion thru electrodeposition parameter development. A more comprehensive economic assessment would be performed, and alignment with strategic partners identified in the Phase I program would assist in development and implementation of the electrodeposition process as a commercially viable process.

Conditions: None

Categorical Exclusion(s) Applied: B3.6, B5.1

*-For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, see Subpart D of 10 CFR 10 21

This action would not: threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including DOE and/or Executive Orders; require siting, construction, or major expansion of waste storage, disposal, recovery, or treatment facilities, but may include such categorically excluded facilities; disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; or adversely affect environmentally sensitive resources (including but not limited to those listed in paragraph B.(4)) of Appendix B to Subpart D of 10 CFR 1021). Furthermore, there are no extraordinary circumstances related to this action that may affect the significance of the environmental effects of the action; this action is not "connected" to other actions with potentially significant impacts, is not related to other proposed actions with cumulatively significant impacts, and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211.

Based on my review of information conveyed to me and in my possession (or attached) concerning the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

ORO NEPA Compliance Officer

James L. Elmore

Date Determined:

9/17/2010