



# U.S. Department of Energy Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: (0472-1567) Baldor Electric Company

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Richmond Heights, OH; Greenville, SC; Raleigh, NC; Gainesville, GA; Rochester, NY; McHenry, IL

Proposed Action Description:

Funding will support efforts to test and optimize Baldor's novel electric motor design.

Project activities include: (1) fabrication of electric motor parts based on an adapted model of Baldor's successful electric motor design; (2) assembly of those parts into electric motors; (3) testing and analysis of the electric motors; and (4) computer modeling studies.

Motor part fabrication will occur at Arnold Magnetic Technologies in Rochester, NY. ABB will conduct computer modeling studies at its facilities in Raleigh, NC.

Categorical Exclusion(s) Applied:

A9 - Information gathering, analysis, and dissemination

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D.

To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal.

The proposal has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

Based on my review of 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.

NEPA Compliance Officer:

Date Determined: 09/20/2012



# U.S. Department of Energy

## Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: (0472-1567) Baldor Electric Company - Rare Earth-Free Traction Motor for Electric Vehicle Applications

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Richmond Heights, OH; Greenville, SC; Gainesville, GA; Rochester, NY

Proposed Action Description:

Funding will support development of a innovative traction motor that is centered on optimizing the effect of non-rare-earth permanent magnets while still meeting the aggressive performance metrics required by the REACT FOA. The project contemplates the incorporation of five unique devices and/or designs into a single motor in order to create a motor that replaces rare-earth materials with standard magnetic materials with no reduction in motor performance. Baldor's application was selected for an initial 18-month period (Phase 1) of funding. The ARPA-E Program Director may decide to negotiate and fund project activities for an additional 18-month period (Phase II) after evaluating the work performed in Phase I. ARPA-E has not obligated funds or negotiated a scope of work for Phase II at this time. Accordingly, this categorical exclusion determination form addresses only the activities that will occur in Phase I of this project.

Proposed work will consist of indoor examination, design, fabrication, analysis, and optimization of the five unique motor components that form the basis of this invention. After extensive testing on each, they will be incorporated into a single model system to analyze interoperability and capacity to perform at target performance levels.

Design, analysis, and optimization of the component parts of this motor will occur at Baldor R&D facilities in Richmond Heights, OH and Greenville, SC; manufacturing activities will be performed at the Baldor manufacturing facility in Gainesville, GA; and design and fabrication of the permanent magnet materials and assemblies will occur at the Arnold Magnetic Technologies Corporation facility in Rochester, NY.

Categorical Exclusion(s) Applied:

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D.

To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal.

The proposal has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

Based on my review of 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.

NEPA Compliance Officer:

Date Determined: 11/21/2011