



U.S. Department of Energy Categorical Exclusion Determination Form

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Proposed Action Title: (0472-1569) The University of Texas at Dallas - Double Stator Switched Reluctance Motor Technology

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Richardson, TX; San Diego, CA

Proposed Action Description:

Funding will support analytical testing of the University of Texas at Dallas' novel electric motor technology.

Proposed work will consist of in-lab testing of two motor test units for data on their noise and vibration. These activities will be conducted at the UT Dallas facilities as well as at the facilities of subrecipient General Atomics.

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: 09/21/2012



U.S. Department of Energy

Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: (0472-1569) General Atomics - Double Sator Switched Reluctance Motor (DSSRM) Technology

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): San Diego, CA

Proposed Action Description:

General Atomics, in conjunction with the University of Texas–Dallas (UT Dallas), proposes to develop double-stator switched reluctance motor (DSSRM) for electric vehicles (EVs) that will eliminate the use of permanent magnet-based motors that rely on rare earth metals in EVs. General Atomics' application was selected for an initial 18-month period (Phase I) 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.

Project activities will include: (1) design of 100kW DSSRM motor; (2) optimization and fabrication of 100kW DSSRM motor prototype; (3) computerized system modeling, integration and test planning on a 2kW DSSRM motor; (4) design, fabrication, and optimization of motor control systems and power electronics; and (5) lab testing of the 100kW DSSRM motor.

All proposed work will take place at the General Atomics campus in San Diego, CA and the University of Texas–Dallas campus in Dallas, TX.

Categorical Exclusion(s) Applied:

A9 - Information gathering, analysis, and dissemination

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

B5.1 - Actions to conserve energy or water

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: 11/23/2011



U.S. Department of Energy Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: (0472-1569) General Atomics - Double Sator Switched Reluctance Motor (DSSRM) Technology

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Richardson, TX; San Diego, CA; Chicago, IL

Proposed Action Description:

The University of Texas-Dallas (UT-Dallas), in conjunction with General Atomics (GA) and Hybrid Electric Vehicle Technologies, LLC (HEVT), proposes to develop a double-stator switched reluctance motor (DSSRM) for electric vehicles (EVs) that will eliminate the use of permanent magnet-based motors that rely on rare earth metals. UT-Dallas has been 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.

Project activities will include: (1) development of performance specifications for a 100kW DSSRM; (2) design, optimization, and fabrication of a 100 kW DSSRM prototype and accompanying motor drive and power electronics; and (3) testing of pre-existing 2kW and 50kW DSSRM prototypes and the 100kW DSSRM prototype developed under the award.

Proposed work will take place at the UT-Dallas Renewable Energy and Vehicular Technology Laboratory in Richardson, TX, GA's facilities in San Diego, CA, and HEVT's facilities in Chicago, IL.

Categorical Exclusion(s) Applied:

A9 - Information gathering, analysis, and dissemination

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

B5.1 - Actions to conserve energy or water

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: 05/15/2012