



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

Submit by E-mail

Proposed Action Title: Sila Nanotechnologies, Inc. - Double Energy Density Anodes for Lithium Ion Batteries

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Alameda, CA

Proposed Action Description:

Funding will support small-scale, research and development activities to continue efforts to synthesize silicon-based anode micron scale particles using various thermal and liquid synthesis techniques. Project activities will also include transforming these materials into battery electrodes, building small battery devices with those electrodes, and testing those batteries. If successful, the project will develop low-cost, environmentally-friendly material synthesis and electrode fabrication technologies, which will enable an increase in the energy density of Li-ion batteries, and at the same time, decrease the cost of energy storage.

Project activities will be conducted at existing facilities, and will be conducted in accordance with applicable Federal, State, and local safety and environmental requirements.

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: 09/25/2015



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

Submit by E-mail

Proposed Action Title: (0674-1542) Sila Nanotechnologies Inc. - Doubling the Energy Density of Lithium-Ion Batteries for Transportation

Program or Field Office: Advanced Research Projects Agency - Energy (ARPA-E)

Location(s) (City/County/State): Georgia Institute of Technology (Atlanta, GA); Quallion LLC (Sylmar, CA)

Proposed Action Description:

Funding will support additional efforts under ARPA-E Award No. DE-AR0000265 to develop silicon-carbon (SiC) based anode materials with ultra-low volumetric expansion that will enable long-life, high capacity lithium-ion batteries. Proposed additional work will consist of: (1) battery assembly and electrochemical cycling, and (2) design, development, and testing of synthesis equipment for production of anode materials.

Project tasks will be conducted by Sila Nanotechnologies Inc., Georgia Institute of Technology, and Quallion LLC in dedicated university and industrial laboratory, testing, and office facilities at Georgia Institute of Technology (Atlanta, GA) and Quallion LLC (Sylmar, CA).

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.

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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: 10/01/2012



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

Submit by E-mail

Proposed Action Title: (0674-1542) Sila Nanotechnologies Inc. - Doubling the Energy Density of Lithium-Ion Batteries for Transportation

Program or Field Office: Advanced Research Projects Agency - Energy (ARPA-E)

Location(s) (City/County/State): Georgia Institute of Technology (Atlanta, GA)

Proposed Action Description:

Funding will support efforts to develop silicon-carbon (SiC) based anode materials with ultra-low volumetric expansion that will enable long-life, high capacity lithium-ion batteries. Proposed work will consist of: (1) synthesizing, characterizing, and optimizing nanoporous SiC microspheres; (2) testing low volume expansion of SiC based anodes; (3) characterizing SiC anode materials, including gravimetric and volumetric capacities and electrochemical performance; and (4) initiating scale-up of anode materials synthesis. In addition, Sila will conduct technology-to-market activities, including development of a technology-to-market plan, cost modeling and planning, and development of a promotional strategy.

Project tasks will be conducted by both Sila Nanotechnologies Inc. and its partner Georgia Institute of Technology in dedicated laboratory and office facilities at Georgia Institute of Technology (Atlanta, GA).

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.

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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:

8/30/12