

PMC-EF2a

(2.04.02)

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



RECIPIENT: Wilson TurboPower, Inc.

STATE: MA

**PROJECT TITLE :** Brayton-Cycle Baseload Power Tower CSP System

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0000104	DE-EE-0003587	GFO-10-477	0

**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:

- B3.6** Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).
- A9** Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

## Rational for determination:

Wilson TurboPower, Inc. (TurboPower) would demonstrate the feasibility of a thermal energy storage (TES) system made from phase change materials (PCM) to meet utility-scale base-load solar plant requirement economically. The project would be divided into three Phases with multiple tasks. The following tasks in Phase I and II are Categorical Excludable since the tasks include research and preliminary design. The location of the laboratory work would take place at TurboPower's laboratory: 20 commerce Way, Woburn, MA 01801.

Phase I: Conduct feasibility studies and determine the most viable option for Phase I.B, two options if there is no clear single winner.

Task I.1: Concept Assessment and Selection

PHASE I CRITICAL MILESTONE [GO/NO-GO DECISION]

Coated pellets would be tested for their ability to perform at a minimum of 80% of the initial value of the latent heat storage over 50 cycles.

Task I.2: Concept Analysis

Task I.3: Preliminary Design Work

Task I.4: Phase I Wrap-up

Phase II: Engineer draft options selected in Phase I.

Task II.1: Engineer draft Components

Task II.2: Engineer draft CSP System

Task II.3: Phase II Wrap-up

Phase III is not Categorical Excludable since final engineering and testing locations are not finalized and therefore cannot be analyzed at this time.

Phase III: Complete detailed engineering design of the system and conduct prototype testing/evaluation

Task III.1: Final Engineering

Task III.2: Fabrication and Testing

Task III.3: Project Wrap-up

The TurboPower claims that there would be no generation of air emissions, hazardous/toxic/effluent waste associated with this proposal; no permits are needed for this proposal; all toxic waste and effluent is disposed of properly via third party contractor; a Safety Operating and Chemical Hygiene Plans (also in compliance with OSHA and industry standards) are in place.

At this time, the engineering and testing locations have not been finalized, and therefore cannot be analyzed. Therefore, Phase III is not authorized. Phase III would be analyzed once the engineering and testing locations are finalized and submitted to the DOE.

Condition of Approval: Allowable: Phase I and II; Prohibited: Phase III. This project comprises of laboratory operations and actions to promote research and development of solar technology; therefore this project is categorized as CX A9 and B3.6.

**NEPA PROVISION**

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

Phase III

This restriction does not preclude you from:

Phase I and II

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

This EF2A was written by Christohper Carusona

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: Kurtin Ker Date: 9/9/2010  
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