PMC-EF2a

(2.06.02)

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

**RECIPIENT:** SkyFuel, Inc. **STATE:** CO

**PROJECT TITLE:** SkyFuel Baseload Parabolic Trough

| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
|---|---|---|---|
| Baseload | DE-EE0003584 | GFO-0003584-002 | GO3584 |

**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 Small-scale research and development, laboratory operations, and pilot projects** | Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment. |
| **B5.15 Small-scale renewable energy research and development and pilot projects** | Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices. |

Rational for determination:

DOE is proposing to provide federal funding to SkyFuel to design, build and demonstrate an advanced, low-cost Concentrating Solar Power (CSP) solar collector at SkyFuel's headquarters located in Arvada, Colorado.

DOE made a previous determination for Phase 1, which included preliminary design of the solar collector subsystems (GFO-10-581; CX A9, B5.1; signed 9.20.2012). This NEPA determination applies to Phase 2.

Phase 2 of the proposed project would include additional lab work (continued development of the mirror film, detailed engineering design and testing of critical subsystems and components) and a final demonstration of a partial, full-scale Solar Collector Array (SCA). All work, including the demonstration, would be conducted at SkyFuel's existing, 40,000 square foot facility located 7 miles north of Golden, Colorado (18300 W Highway 72, Arvada, Colorado 80007). The facility is surrounded by open space. No residences are located near the facility. In 2008, the site was graded and crushed asphalt was spread over the site within the fence boundaries.

SkyFuel has completed an R&D questionnaire addressing the protocols for laboratory safety, risk management, chemical handling and waste disposal. The facility complies with standard safety procedures and labs are inspected by staff and safety personnel. SkyFuel has all applicable permits in place to conduct research. The prototype would be designed to operate with a molten salt heat transfer solution (HITEC XL), which is a non-flammable, non-toxic, inert fluid posing no threat to the environment. If HITEC XL is accidentally released into the environment, it will quickly solidify and can be removed using a shovel and disposed of either at the landfill or dissolving in water (similar to table salt).

Phase 2 would culminate with independent testing of a single mirror module and the installation of a partial full-scale SCA. The proposed system would be installed within the existing security fence at SkyFuel's facility and would consist of a single SCA module (60 feet X 26 feet) with a drive pylon installed at the north end of the collector and an end pylon installed at the south end of the collector. The point of rotation for the collector would be 15 feet above grade with the extents of the collector extending 30 feet when the collector is oriented toward the horizon. A total of four collector foundations (16 square feet/each) would be required for the two pylons, each 36 inches in diameter. Additional equipment necessary for instrumentation and fluid flow through the test loop would cover less than 60 square feet. The ancillary equipment foundations are slab on grade and would not require excavation. The total length of power and instrumentation trenches would be 150 square feet (18 inches (w) X 24 inches (d)). The proposed project would total no more than 300 square feet of ground disturbance.

Based on the age of the building and the previously disturbed nature of the site, the proposed project would not affect wetlands, floodplains, cultural resources or threatened and endangered species.

Based on this information, DOE has determined the work outlined is consistent with categorical exclusion B3.6 (small-scale research and development, laboratory operations and pilot projects) and B5.15 (small-scale renewable energy research and development pilot projects).

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

Cristina Tyler 7.11.2012

DOE Funding: $2,329,660
Total Project Cost: $3,561,798

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

NEPA Compliance Officer Signature: _____ Date: 7/11/2012
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