

**FINDING OF NO SIGNIFICANT IMPACT FOR THE FINAL ENVIRONMENTAL  
ASSESSMENT FOR THE X-ENERGY HELIUM TEST FACILITY, OAK RIDGE,  
TENNESSEE (DOE/EA-2230)**

**U.S. Department of Energy (DOE), Office of Clean Energy Demonstrations (OCED)**

**ACTION:** Finding of No Significant Impact (FONSI)

**SUMMARY:** The U.S. Department of Energy (DOE) Office of Clean Energy Demonstrations (OCED) has prepared the *Environmental Assessment for the X-Energy Helium Test Facility, Oak Ridge, Tennessee* (DOE/EA-2230) (referred to as the Final EA and is incorporated by reference into this FONSI), which analyzed the potential impacts of the Proposed Action. DOE's Proposed Action is to authorize the expenditure of federal funds by X-energy LLC (X-energy) to construct and operate the Helium Test Facility (HTF). The HTF would be built and operated to test critical structures, systems, and components that are considered First-in-a-While in a harsh, high temperature helium environment to increase the technical readiness level of X-energy's design of the high temperature gas cooled Small Modular Reactor.

The Final EA evaluated two alternatives to address X-energy's request for financial assistance to construct and operate the HTF and associated infrastructure. The two alternatives are: a No Action Alternative as required by DOE's National Environmental Policy Act (NEPA) regulations (Title 10 *Code of Federal Regulations* Section 1021 [10 CFR 1021], "National Environmental Policy Act Implementing Procedures") and in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14[c]); and the Proposed Action to provide federal funding in support of the construction and operation of the HTF. The Proposed Action is the Preferred Alternative; it would meet the purpose and need for the Proposed Action and would also be protective of human health and the environment.

Based on the analysis in the Final EA, DOE determined that the Preferred Alternative would not constitute a major Federal action significantly affecting the quality of human health and the environment within the meaning of NEPA. Therefore, the preparation of an Environmental Impact Statement (EIS) is not required, and DOE is selecting the Proposed Action and issuing this Finding of No Significant Impact (FONSI).

**PROPOSED ACTION:** The Proposed Action involves providing federal funds in support of the construction and operation of the HTF (the Proposed Project). The Proposed Project would be located in the Horizon Center Industrial Park (also known as the 'Horizon Center' and 'ED-1') in Oak Ridge, Tennessee. The Proposed Project would be located on a 15-acre parcel within Development Area (DA) or Lot 7 which is approximately 72 acres in size. Project facilities and components would include: one main building, stepdown transformer, access road, emergency diesel generator, external helium and nitrogen storage pads, and a parking lot. The estimated land disturbance within the 15-acre parcel would be 5 acres of forested land.

**ALTERNATIVES EVALUATED:** DOE evaluated two alternatives in the Final EA. Under the No-Action Alternative, DOE would not authorize the expenditure of federal funds by X-energy in support of the Proposed Project. For purposes of analysis, DOE assumed the Proposed Project

would not proceed if DOE does not authorize the expenditure of federal funds. The No Action Alternative was evaluated to provide a baseline for comparison with the Proposed Action Alternative, which is the Preferred Alternative. The Proposed Action (the Preferred Alternative) consists of authorizing the expenditure of federal funding by X-energy to support the construction and operation of the HTF. The Final EA incorporated by reference numerous EAs, Mitigation Action Plans, and FONSIIs previously prepared by DOE for actions within ED-1.

In addition to the two alternatives evaluated in the Final EA, DOE also considered other alternatives that were eliminated from further analysis in Section 2.6 of the EA. Several alternative locations were considered by X-energy as part of a competitive bid process for the HTF. The bid evaluation process considered financial costs to the ARDP program, the availability of existing utilities, and the technical expertise of the design partner and available local labor pool. The selected location provided the lowest-cost option while minimizing potential environmental impacts because of the availability of existing utility connections and readily available work force.

**ENVIRONMENTAL CONSEQUENCES:** The affected environment for the following resources at the project site were evaluated for potential impacts from the No Action Alternative and the Proposed Action (the Preferred Alternative):

- Threatened and Endangered Species
- Recreation

Under the No-Action Alternative, the HTF would not be constructed, and biological and recreational resources would remain unchanged when compared to existing conditions.

The Proposed Action (the Preferred Alternative) would have short and long-term, minor impacts to threatened and endangered species from construction and operation activities including tree clearing of 5-acres within a forested area. However, the surrounding area including the remaining acreage of the DA 7 provides suitable habitat for displaced species and tree clearing would take place during winter months (November – March) to avoid any potential impacts during the bat summer roosting season.

The Proposed Action (the Preferred Alternative) would have short and long-term, minor impacts to recreational resources from construction and operation activities because the project is located less than 700 feet from a portion of the City of Oak Ridge’s Greenway trails network. However, noise from the HTF would decrease to ambient levels within approximately 50ft of the site and limited visual impacts would occur within ED-1 which is an active industrial park.

Applicant committed best management practices (BMPs) are listed in Section 2.11 of the EA and include items to reduce potential impacts from construction and operations of the Proposed Project. BMPs cover the following resource areas: land use, soils, water, air quality, noise, vegetation, wildlife, visual resources, construction and operations and maintenance, cultural and historic resources, and transportation.

The cumulative impacts from the Proposed Project (the Preferred Alternative) are expected to be negligible.

**PUBLIC REVIEW AND COMMENTS:** DOE did not hold a public scoping or draft EA review period for this project due to the amount of recent NEPA reviews completed within the Horizon Center Industrial Park for similar activities. DOE sent a letter to the host state, the State of Tennessee, on July 7, 2023, as required by DOE NEPA Implementing Regulations (10 CFR 1021). The State of Tennessee responded on July 7, 2023, asking for DOE to email the Tennessee Department of Environment and Conservation NEPA email address when the draft EA is available for review. DOE transmitted the draft EA to TDEC on October 10, 2023. TDEC provided comments on October 25, 2023, after a 14-day review period of the draft EA. DOE is not required to provide the FONSI to the public for a 30-day review period prior to a decision because the Proposed Action is not an activity that normally requires an Environmental Impact Statement (10 CFR 1021 Subpt. D, App. D) and the Proposed Action is not precedent setting (40 CFR § 1501.6).

**CONSULTATIONS:** On November 15, 2023, OCED submitted a request for informal consultation under Section 7 of the Endangered Species Act to the U.S. Fish and Wildlife Service (USFWS) Tennessee Ecological Services Office. DOE requested concurrence on a *may affect, not likely to adversely affect* determination for four endangered bat species (Northern long-eared bat, Indiana bat, Gray bat, and Tricolored bat) and a *no effect* determination for other species. DOE received concurrence from USFWS on these determinations on November 28, 2023. X-energy is required to complete any tree clearing work during the winter months (November – March) to avoid any potential impacts to the bat species.

**COOPERATING AGENCIES:** OCED did not invite any federal agencies or Tribes to be cooperating agencies for this project.


**PUBLIC AVAILABILITY AND CONTACT INFORMATION:** This FONSI and Final EA are available at the following website: [DOE/EA-2230: X-energy Helium Test Facility Oak Ridge, Tennessee | Department of Energy](#).

For more information about this FONSI or Final EA:  
Department of Energy  
Office of Clean Energy Demonstrations  
[OCED.ESH@hq.doe.gov](mailto:OCED.ESH@hq.doe.gov)

**DETERMINATION:** Based on the information and analysis in the Final EA, DOE has determined that the Proposed Action would not constitute a major Federal action significantly affecting the quality of human health or the environment in accordance with DOE's NEPA implementing procedures (10 CFR 1021), and the regulations issued by the CEQ for implementing NEPA (40 CFR 1508.27). Therefore, the preparation of an EIS is not required. DOE selects the Proposed Action from the *Environmental Assessment for the X-Energy Helium Test Facility, Oak Ridge, Tennessee* (DOE/EA-2230) and is issuing this FONSI.

Todd A.  
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