

PMC-ND

(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: NREL

STATE: CO

PROJECT TITLE: UAS Flights for CU Met Tower Comparison - Flatirons Campus

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-21-002	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B3.2 Aviation activities Aviation activities for survey, monitoring, or security purposes that comply with Federal Aviation Administration regulations.

Rationale for determination:

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) is proposing to use uncrewed aircraft systems (UAS) to conduct flights for the collection of meteorological data to compare with meteorological data collected from existing Flatirons Campus meteorological (met) towers.

Test flights would occur at the Flatirons Campus (formally called the National Wind Technology Center) located in Jefferson County, Colorado and are expected to occur between November 23th, 2020 and May 1st, 2021. Flight activities would be conducted by CU-Boulder, a DOE-approved Commercial Aviation Services provider, under FAA Part 107 regulations. Multiple flights and flight days would be conducted within the central portion of the Flatirons Campus with a portion of the flight path extending for a short distance over the Rocky Flats National Wildlife Refuge (RFNWR) property to the south. The fixed-wing aircraft being used would be put through various flight patterns to collect atmospheric data such as pressure, temperature, and humidity (PTH). A "racetrack pattern" would be flown transiting between two end points to allow for steady level flight for as long as possible against a constant wind vector and a "vertical profiling pattern" would also be flown, consisting of tight orbits around a given point as the aircraft climbs or descends to look at the change in PTH throughout the climb and descent. These patterns would be conducted by a GPS-guided autopilot that could be overridden at any point for the purpose of personnel safety or equipment/infrastructure protection. The only flight portion that would be controlled manually is upon take-off and landing which would be oriented into the wind vector unless ground conditions require otherwise. The intended take-off and landing patterns would be briefed by the pilot-in-command (PIC) to the crew prior to set-up of the aircraft and launch equipment. The flight crew would be comprised of two to four individuals, including visual observer(s) to monitor airspace. Flights would consist of ascending and descending vertical maneuvers as well as level flight from ground level to 399' above ground level (AGL). All flights would maintain a speed less than 50 mph and a minimum horizontal or vertical distance of 50' from structures. Measures would be taken to visually demarcate the launch/landing area with items such as cones, caution tape, or signage. Launch/landing areas would be determined by the PIC prior to each flight. Mission support staff would accompany the flight team when required to direct and control staff access during flights. Road closures may be necessary during flights and would be coordinated with the Traffic AHJ and Security. The UAS would be landed when large birds or bird flocks are present in the flight airspace.

All flights would be conducted below 400 ft. AGL, in winds less than 25 mph steady (30 mph gusts), within Class G airspace, which requires no notifications, authorizations, or permits. Portions of flights extending south over RFNWR property have been authorized through an existing agreement with the US Fish and Wildlife Service. Notification of flight operations will be given to U.S. Fish and Wildlife personnel via email not less than 48 hours before scheduled flights, however attempts will be made to provide initial project notification at least 2 weeks in advance. An effort will be made to schedule flights during mid-day hours to avoid early morning and late evening hours when native wildlife is more active. Flights would adhere to and take place in accordance with NREL policies, procedures, and safety requirements for conducting UAS missions on DOE facilities. If activities are conducted away from graveled or paved surfaces from mid-March through May 1st, a ground nesting bird survey would be performed immediately prior to initiating activities. The survey would include those areas where flight crew are standing or walking in vegetated areas and the launch/landing locations of the UAS. All participating workers would go through a safety orientation of the site and wear appropriate PPE before commencement of activities. Based on the locations of flights and planned safety measures, no adverse impacts are expected due to the activity.

A risk assessment has been completed for flight activities. Operational parameters, hazards, and controls are identified and set forth in an Aviation Safety Plan that was drafted in consultation with NREL Environment, Safety, and Health staff and the UAS Steering Committee. The Flight Plan for this project has been submitted and approved by the Golden Field Office's Aviation Manager and Office Director. Per the aviation manager, "the identified flight risks for the CU Boulder Met Tower Comparison flights have been adequately identified and mitigated to routine risk per the DOE-GFO Risk Assessment". If flight conditions change or the documented mitigation factors are unable to be implemented the mission will need to be paused so a reevaluation of hazards can occur.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

NEPA review completed by Casey Strickland on November 19, 2020.

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) 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 proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action 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.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically Signed By: Casey Strickland

Date: 11/19/2020

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
 Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature:

Field Office Manager

Date: