PMC-EF2a
(2.04.02)

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

RECIPIENT: Michigan Technological University **STATE:** MI

PROJECT TITLE: Impact of E15 Fuel on Snowmobile Engine Durability and Drivability – NREL Tracking No. 10-034

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
		NREL-10-034	GO10337

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.

B5.1 Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

Rational for determination:

For this proposed project, the National Renewable Energy Laboratory (NREL) and Michigan Technological University (MTU) would evaluate the impacts of ethanol blended in gasoline at up to 15 percent by volume on current product and legacy snowmobile engines and vehicles. DOE via its national labs has been heavily engaged in evaluating the potential impacts of so-called mid-level ethanol blends (MLEBs) – gasoline blended with 15% to 20% ethanol – on the U.S. motor vehicle population as well as non-road and specialty engines. Because on-highway vehicles consume the vast majority of gasoline in the U.S., vehicle impacts have been the dominant focus of DOE's studies to-date. However, no credible data currently exists to suggest how snowmobile engines would adapt to these higher ethanol blends in conventional gasoline. The current study seeks to explore the impacts of mid-level ethanol blends on snowmobile engines by evaluating the effects of E15 on emissions, durability and drivability of four popular snowmobile engines and vehicles.

Michigan Technological University (Michigan Tech) in Houghton, Michigan would be the principal investigator for this proposed project, at the Keweenaw Research Center (KRC) in Keweenaw, Michigan. KRC, a research agency of Michigan Tech, is located at 23620 Airpark Blvd, Calumet, MI 49913 (coordinates are 47.170044, -88.495945) and was a former test site of the U.S. Army Tank Automotive Command. KRC specializes in laboratory based evaluation, vehicle testing and evaluation, snow research, and computer based modeling and analysis. Engine durability and emissions testing for this proposed project would be conducted on an existing engine dynamometer using the standard 5-mode cycle pursuant with Code of Federal Regulations (CFR) Title 40, Part 1051 requirements. The four test engines would be provided by the relevant original equipment manufactures. Michigan Tech would supply all required test fuel, instrumentation and test support hardware. Standard test protocols currently in use by the snowmobile industry would be employed, at the drivability evaluations would be conducted on an onsite outdoor test trail. The snow trails where testing would occur are already in place, since testing is frequently done at the facility, and would only be groomed prior to testing. A conventional (E0) gasoline and a gasoline splash-blended with 15 volume-% ethanol (E15) would be used as the test fuels.

The snowmobile engines would be operated in their standard configuration and so would emit pollutants as regulated by the EPA for non-road internal combustion engines. Because engines would be in their standard configuration,

emitted pollutants are not expected to be in excess of regulated amounts for these engine applications. Therefore the emissions from these four engines would not be significant. As the testing is temporary in nature and would occur in established indoor and outdoor test facilities, no impact to cultural resources, wetlands, floodplains, prime farmland, critical habitat, and threatened and endangered species is anticipated. Implementation of this proposed project would require de minimis usage of hazardous materials (gasoline, motor oil, antifreeze, etc.) in order to operate the snowmobiles per manufacturer specifications and recommended maintenance procedures. No hazardous waste generation is expected.

Based upon the information provided above, this proposed project would qualify for Categorical Exclusions A9, B3.6, and B5.1.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

EF2A prepared by Robert Smith on 08/19/2010

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Lou Plummer Date: 8/20/2010

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