Electric Snowmobile

Submitted by: Jimmy Rice (jlrice2@alaska.edu, (907) 385-3131) on 11/8/10

Amount Requested

$3000

Proposal Summary

We suggest supplying batteries for the EV1 Snowmobile that finished with best range in 2009 Clean Snowmobile Challenge. This 2005 Electric Arctic Cat F7 can be used for grooming trails on UAF campus. Currently there are three gasoline-powered snowmobiles owned and operated by UAF for the purpose of trail grooming. Using an electric sled will offset some of the gasoline costs as well as lower the maintenance and repair expenses.

The current use of electric vehicles at UAF has strengthened the Sustainability Report Card score to “B” in the transportation area. Additional vehicles will increase the grade further.

Technical Advisors and Collaborators

Gang Sheng is currently the adviser for the Society of Automotive Engineers (SAE). He has direct supervision of all the current electric snowmobile projects.

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Budget Detail

We require $3,000 to get this snowmobile up and running.
Supplies: 25 LiFePO4 batteries

Budget Justification

Requires these batteries for the machine to be operational. All other components are installed.

Project Value

This will allow energy reduction of gasoline fuels currently consumed at UAF to power snowmobiles used for trail grooming. Using electric snowmobiles will be quieter for the community and produce zero emissions on the trails. This will reduce the impact on the pollution that occurs when Fairbanks is under the "inversion" conditions.

Implementation Plan

Qualifications & Experience

I am qualified to carry out this project because I have taken ES 166 Electric Car Conversion class. With my current job I manage over 150 pieces of computer and electronic equipment. The last large scale project I conducted was successfully migrating over 500 computers from Microsoft Windows XP to Microsoft Windows Vista. I am currently designing a hybrid vehicle as a hobby and am very interested in being the volunteer project manager. In past years I put in over two thousand hours with the American Red Cross as a volunteer out on Eielson Air Force Base, as well as a volunteer with the Boy Scout Troop 42 in North Pole, when work and school allows time.

Group/Department

Mechanical Engineering

Sustainability Area

Energy, Transportation, Sustainable Design

Supporting Documentation (if provided) follows: