Received 10/14/11 at 3:08 pm from Paul Heitpas

No message in email itself.
Delivering Green

2011 Request for Proposal: UST Campus Sustainability Fund

Testing the feasibility of utilizing trucks fueled by electricity rather than gas to serve the University of St Thomas community.

Respectfully submitted by:
Paul Hietpas
Assistant Coordinator Recycling and Receiving
Physical Plant
University of St Thomas
hiet9744@stthomas.edu
651-962-6387

In an effort to curb carbon emissions created by the Recycling and Receiving Department, I am proposing that the University procure an electric vehicle to be used for central receiving deliveries and light recycling tasks performed by the University of St Thomas recycling team. The goal of the purchase is two-fold. First, and foremost, the goal is to significantly reduce the department’s fossil fuel consumption. However, in addition to the obvious environmental benefits, the purchase and use of an electric vehicle will demonstrate the university’s community support of the “American College & University Presidents’ Climate Commitment” to reduce the University’s carbon footprint. Using a clean energy vehicle for day-to-day operations also will eliminate the obvious paradox created when a gas-fueled vehicle is used to gather recycled materials, an irony that is not lost on UST students.

The symbolism of using a clean energy alternative to improve our work efficiency and lower our vehicle maintenance cost supports our evolving process improvement and reflects the values and ethics held by our institution. It also provides a concrete example to our students and alumni that the University of St. Thomas truly lives its mission “to educate students to be morally responsible leaders who think critically, act wisely and work skillfully to advance the common good.”
Benefits Analysis:

Purchase of an electric vehicle would benefit the Recycling team/Central Receiving Options and the greater UST community in several ways.

1. For some time, the department has needed a small vehicle to better serve the campus. Currently, we use two large industrial vehicles to perform all tasks, whether we are delivering 5 small boxes or 50 large cartons. In addition, the recycling aspect of the department uses these same large vehicles for daily tasks, regardless of whether the workload is light or heavy. Access to a smaller vehicle would reduce carbon emissions by having the flexibility to choose which vehicle is most appropriate for the job at hand.

2. A smaller vehicle would enable central receiving to provide delivery and pick-up services to buildings that are not normally accessible with a larger vehicle. Currently, students and staff use push carts to move materials from surface lots and street parking to offices. This is inefficient, takes longer and requires additional staffing to perform central receiving tasks.

3. Vehicle maintenance on the electric vehicle will be significantly lower over its lifespan than the maintenance required by a gas-powered truck of comparable size, due to fewer moving parts and its maintenance-free body and frame. Maintenance for this vehicle primarily will be for brakes, tires and replacement of the vehicle’s battery every 3 to 5 years.

4. The proposed vehicle can be charged at any 110-volt outlet, anywhere on the campus so it is not limited to a fuel depot located at the Physical Plant.

5. The recycling team will have access to recycling consolidation sites across campus without the use of congested roadways. Team members also will have access to service areas that are not normally accessible by larger vehicles.

6. The vehicle’s small size will allow it to be parked off the surface lots so its presence will not negatively impact the already short supply of parking.

7. The price of the vehicle is comparable to, and perhaps even less, then the purchase of a gas-powered vehicle of similar size and construction.
8. Although electricity is still largely derived from coal, 30% of UST’s electric is specifically purchased from wind energy allowing us to maximize this clean energy source.

9. We are recommending purchase of a Columbia truck, built in Reedsburg, Wisconsin, through Cushman Motor Company of Minneapolis, thereby simultaneously supporting a local business and lowering carbon emissions. *(See attached proposal from Cushman Motor Company)*

This project has already won endorsement from Physical Plant administration and maintenance of the physical plant shops.

**Requested funding:**

- Total funding requested for this proposal is $21,201.41.

Cost breakdown:

- $18,298.00 to procure a 2012 Columbia Mega Maintenance Truck through Cushman Motor Company.
- $1,253.41 to pay for 6.85% sales tax.
- $1,500 to cover insurance and special licensing required to operate the vehicle on St. Paul city streets. This vehicle will be the first NEV (Neighborhood Electric Vehicle) on our campus and considered legal by law enforcement on 35 mile per hour streets.
- $150 to supply UST markings and signage.

In addition to the symbolic presence of an alternative energy vehicle on campus, this purchase also would provide important educational benefits. Because the primary users of this vehicle will be work study students supporting the central receiving/recycling area, they will be driving it, keeping records of its use, and analyzing the resulting data to measure its effectiveness and feasibility. The students will carry lessons learned from using this type of vehicle with them when they leave the UST campus and embark on their adult lives.

Due to the experimental nature of this project, defined metrics are not available. It is currently unknown how much gasoline cost will be saved or how much green
house gas emission will be prevented from contaminating the atmosphere. I propose a 3-year study with updates provided at 6-month intervals. Student workers will participate in designing the study and gathering and analyzing the data.

What is known?

Our current primary recycling vehicle gets between 10 and 13 miles per gallon and is driven an average of 16 miles in a typical workday. With 260 workdays in a year, this equates to 4,160 miles annually. Average daily mileage includes deliveries and all recycling pickups but does not include mileage to Goodwill Industries and other local recycling partners. The proposed electric vehicle will have a range of 43 miles on a charge. A demonstration electric vehicle of this kind was tested with light use for two days for a total of 4.5 miles.

Methodology

The proposal includes tracking mileage required for our current pick-up and delivery operations to prove a reduction in gas usage and acquire data needed to quantifiably measure electric costs vs. gas cost savings.

In addition, we will use a similar gas-powered vehicle as a control with the same focus on electric versus gas usage and maintenance cost for each vehicle.

A model of carbon savings will be developed by students and staff to provide the statistical information needed to determine our green house gas emissions offset to help our university meet its goal of 4% annual reduction.

A pilot program

An additional benefit for procuring such a machine would be its prolonged use in real work situations. This study would help Physical Plant administration ascertain the feasibility of eventually replacing UST’s current fleet of Tiger trucks and Cushman vehicles with electric vehicles.
The following attachments provide additional documentation related to this proposal:

1. Quote from Cushman Motor company Inc for the price of the vehicle
2. Letter of endorsement from Jerry Anderley, Associate Vice President for Facilities.

Thank you for your consideration for this green initiative. I would be happy to answer any questions you may have or to provide any additional information required.

Sincerely,

Paul Hietpas
To whom it may concern.

This letter is in regard to the proposal for sustainability funds submitted by Paul Hietpas, Assistant Coordinator of Recycling and Receiving at the Physical Plant.

I fully endorse this proposal for the procurement of an electric vehicle for use by the receiving and recycling operations under the direction of the University of St Thomas Physical Plant. I pledge to support this project with storage and maintenance of this vehicle within the infrastructure of the PHP shops.

I believe having a fully electronic vehicle present on our fair campus would be a genuine representation of the obligation to sustainability we have agreed to under the Presidents Climate Commitment.

Gerald M. Anderley
Associate Vice President for Facilities
We are pleased to submit the following quotation for your consideration:

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<th>QUANTITY</th>
<th>DESCRIPTION</th>
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<tr>
<td>1</td>
<td>2012 COLUMBIA MEGA MAINTENANCE NEV/LSV TRUCK</td>
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<td>NEV/LSV Models meet or exceed the requirements of NHTSA</td>
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<td>• AC drive system, 48 Volt</td>
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<td>• 1110 LB load capacity</td>
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<td>• Aluminum chassis w/91” Wheel Base</td>
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<td>• Four wheel hydraulic braking, w/regenerative braking</td>
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<td>• DC to DC Converter</td>
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<td>• Reverse beeper, lights and horn</td>
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<td>• Head, tail, brake lights</td>
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<td>• Maintenance alert indicator</td>
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<td>• Doors, lockable</td>
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<td>• Single point watering system (batteries)</td>
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<td></td>
<td>• Utility Box w/drop sides 58W x 64L x 11” high</td>
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<td>8</td>
<td>C2-48-01, High Capacity Batteries, 251 amp hour</td>
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<td>1</td>
<td>P2-10-45, Heater/defroster</td>
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<td>1</td>
<td>T2-30-85, Strobe light, amber</td>
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NEV/LSV includes, Rear & Side view mirrors, Windshield wipers, Turn signals, four-way flashers, seat belts, back-up lamps, license plate mount & light, reflectors, High/Low range (25mph or 19 mph)

Pricing includes, Freight, set-up, delivery
Warranty: One year parts and labor

NET INVESTMENT $18,298.00

Submitted by:

Steve Scanlan