

SUSTAINABILITY INITIATIVES BY STUDENT ORGANIZATIONS FUNDING PROPOSAL

Part I - General Information

Name of Student Organization	Environmental Coalition
Contact/Responsible Person	John A. Shewchuk
Contact Office Held/Title	Student Member
Contact Email Address	shewchukJA@vt.edu
Contact Telephone Number	5408182072

Part II - Project Cost Information

Estimate Cost of this Proposal	\$38,280	See Part III.C
Estimated Savings –	\$6,561.25 annually	See Part III.D
Net Cost of this Proposal	\$0 after simple payback period of 5.8 years	

Part III - Supporting Information

A. Please describe your sustainability initiative and attach supporting documentation.

My proposal is to replace 88 high-pressure sodium lamp posts and 86 high-pressure sodium parking lot lights (174 in total) on the academic side of campus with more efficient LED ballasts. The areas in which these lights are located is indicated on the attached map.

B. How does this initiative help to achieve the goals of the Virginia Tech Climate Action Committee Resolution and Sustainability Plan?

This proposal supports point 4 of the Climate Action Commitment, "Virginia Tech will work toward these emission reduction targets through improved energy efficiency, reduction of energy waste, replacement of high-carbon fuels, and other measures identified in the VTAC&SP." It does so by cutting the energy usage of these lights by 70.83%, amounting to 65,524 kilowatt-hours and 87,803 tons of carbon emissions saved annually.

C. What is the cost of your proposal? Please describe in adequate detail the basis for your cost estimate.

The proposal's cost is \$38,280, based on estimates of \$120 material cost and \$100 installation cost for each bulb, times 176 bulbs identified. The 88 lamp posts account for \$3,318.33 of this cost, and the 86 parking lot lights account for \$3,242.92. The full calculations, completed with help from Director of Electric Services Rob Glenn, are detailed in the attached lighting calculator spreadsheet.

D. Will your proposal produce cost savings for the University? If so, how much? Please describe in adequate detail the basis for your savings estimate.

The proposal's estimated annual savings are \$6,561.25. These savings are derived from the increased energy efficiency and lifespan of LED lights relative to the current HPS units. Replacing the current 120W HPS bulbs with 35W LEDs reduces energy use by 70.83%, saving 64,780 kilowatt-hours each year. At a night energy rate of \$0.0632/kWh, this accounts for \$4,091.32 of the savings. Additionally, 1.7 LEDs are expected to fail each year, compared to 38.1 HPS bulbs. At \$250 per LED replacement versus \$205 per HPS replacement, annual maintenance savings are \$2,469.9. Together, this gives the proposal a simple payback period of 5.8 years. The full calculations, completed with help from Director of Electric Services Rob Glenn, are detailed in the attached lighting calculator spreadsheet.

E. Is this funding request an Ongoing or One-Time change (please check one)?

One-time **Ongoing**

F. Is funding available for this request from another source? If yes, describe the funding (source, amount, etc.)
N/A

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Part IV- Requestors/Reviewers

John A. Shewchuk Prepared By (Name of Contact for Student Organization)	Date 11/13/2019
Rob Glenn Reviewed By (Name of Appropriate University Official)	1/2/20 Date
Denny Cochrane Reviewed By (Name of Office of Sustainability Representative)	1/2/20 Date