

SUSTAINABILITY INITIATIVES BY STUDENT ORGANIZATIONS FUNDING PROPOSAL

Part I - General Information

Name of Student Organization	Virginia Tech Student Government Association
Contact/Responsible Person	Melvin Amos and Arianna Jensen-Wachspres
Contact Office Head/Title	Student Government Association Representatives
Contact Email Address	auramos7@vt.edu
Contact Telephone Number	804-833-0384

Part II - Project Cost Information

Estimate Cost of this Proposal	\$300	See Part III.C
Estimated Savings –	TBD	See Part III.D
Net Cost of this Proposal	\$300	

Part III - Supporting Information

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

The purpose of this RFP is to motivate behavioral change by placing “Save Energy” educational stickers on light switches in various academic, administrative, and residential buildings on campus. According to Kim Briele, Associate Director of Engineering Operations, there are approximately 23,000 light switches. A collaboration of the Environmental Coalition and Team ECCO, a student initiative team in the Office of Sustainability, placed 10,000 similar stickers around campus in 2008 and some of those stickers are still in place. Since that time, though, the campus has expanded and the light switches in some of the newer buildings have different switch panels different than the old design.



REPRESENTS THE FINISHED EDGE OF THE ITEM.

We feel that 2,000 new stickers from this RFP to be placed on light switches in academic buildings would make a significant impact to reducing university electricity costs. We plan to conduct a survey of the academic buildings to get an accurate estimate of how many light switches to cover and what types of covers would fit, then adjusting the design of the switch covers to fit that type of cover. Virginia Tech used 2.01 trillion Btu/year of total energy in the fiscal year 2016 and 145,265 tons of carbon resulted from purchased electricity in 2016. Similar conservation light switch sticker campaigns have been implemented at other universities, such as the University of Texas A&M and University of Colorado at Boulder, have been implemented to successful results by raising awareness of light conservation through sharing the campaign around campus and with local news media.

Figure 1: Design of the 2008 stickers to be used as basis for proposed stickers for 2.5 x 4 inch single-switch light switch. The switches are made from white removable vinyl so that they could easily be removed without residue. We would replace the logos at the bottom with the logo of the Virginia Tech Student Government Association and would be happy to include the logo of the Office of Sustainability as well.

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

Policy Point # 1 - Virginia Tech will be a leader in Campus Sustainability.

Adding energy-saving graphics to light switches will affirm Virginia Tech's reputation as a campus with a commitment to sustainable behavior.

Policy Point # 3 - Virginia Tech will establish a target for reduction of campus GHG emissions to 80% below 1990 emissions level by 2050.

Turning off lights when leaving a room can reduce greenhouse gas emissions by 0.15 lbs. per hour (<http://www.bu.edu/sustainability/what-you-can-do/ten-sustainable-actions/turn-off-the-lights/>), multiplied by 10,000 stickers results in 1,500 lbs. per hour.

Policy Point # 4 - Virginia Tech will work toward these emission reduction targets through improved energy efficiency.

The total electric energy usage in all academic buildings at Virginia Tech is 91,523,402 kWh, costing \$8,881,511 per year. Given that approximately 25% of electricity usage in buildings comes from lighting, Virginia Tech spends \$2,220,377.75 on lighting academic buildings. Turning off lights not in use can reduce electricity consumption with a 1 % reduction in energy usage resulting in \$22,203.78 in savings and resulting in reduced carbon emissions.

Policy Point # 7 - Virginia Tech will improve electricity and heating efficiency of campus facilities and their operations, including lighting efficiency.

Turning off lights in rooms when not in use improves the electricity efficiency of campus facilities and their operations.

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

Number of stickers: 2,000

Total Cost of Stickers (based off the 2008 design): \$300

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 total electric energy usage in all academic buildings at Virginia Tech is 91,523,402 kWh, costing \$8,881,511 per year. (Electricity usage estimates are courtesy of Ruben Avagyan. Refer to attached spreadsheet for breakdown of electricity usage per academic building.) Given that approximately 25% of electricity usage in buildings comes from lighting, Virginia Tech spends \$2,220,377.75 on lighting academic buildings. Turning off lights not in use can reduce electricity consumption with a 1% reduction in energy usage resulting in \$22,203.78 in savings.

Costs savings depend on the number of each type of bulb (incandescent, CFL, Halogen, LED):

<http://energy.gov/energysaver/when-turn-your-lights>

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.)

No

SUSTAINABILITY INITIATIVES BY STUDENT ORGANIZATIONS FUNDING PROPOSAL

Part IV- Requestors/Reviewers

Melvin Amos November 18, 2016

Prepared By (Name of Contact for Student Organization) Date

Ruben Avagyan

Reviewed By (Name of Appropriate University Official) Date 12/1/16

Dennis Cochrane

Reviewed By (Name of Office of Sustainability Representative) Date 12/1/16