SUSTAINABILITY INITIATIVES BY STUDENT ORGANIZATIONS FUNDING PROPOSAL

Part I - General Information

Name of Student Organization	Students for Sustainable Practice
Contact/Responsible Person	Caed Cunningham
Contact Office Head/Title	President
Contact Email Address	caedc@vt.edu
Contact Telephone Number	703-501-3877

Part II - Project Cost Information

Estimate Cost of this Proposal	$27,000	See Part III.C
Estimated Savings –	N/A	See Part III.D
Net Cost of this Proposal	**$27,000**	

Part III - Supporting Information

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

We request that Virginia Tech makes a commitment to install 2 ConnecTable HUB tables on campus.

This proposal is a revamped version of the wildly successful Solar Table located outside Pritchard Residential Hall that has since become a substantial talking piece and keystone of the Green RFP program. Development of this table was coordinated by OoS through Residential Services and Renaissance Contract Lighting and Furnishings located in Roanoke. The ADA accessible table boasts two 100 watt solar panels and 8 USB power stations.

We are proposing an upgraded version of this project to be implemented by a private company called ConnecTable. The company has already had their products placed on over 10 college campuses including University of Virginia. In depth specifications on the HUB Model specifically will be included in the attached documentation section. This model is also ADA accessible and houses a solar array capacity of 530 Watts and four GFCI traditional electrical sockets as well as eight USB ports. The important difference between the two designs is the four electrical outlets present on the ConnecTable's HUB. As our research that is included in the appendix of this proposal shows, the vast majority of students surveyed stated that out of all of the electrical devices charged on campus while away from home, laptops, arguably the most important tool to college students in the 21st century, were the most common. The Renaissance model that is currently outside of Pritchard Hall does not allow students to do so as most laptops require a two or three prong electrical socket.

As has been proven with the successful Pritchard Solar table, the tables will create a 'power oasis' allowing students to charge their electronic device off the grid while enjoying VT's scenic campus. The solar tables will become part of the student body's daily routine as well as influencing the sustainability dialogue on campus. The most important impact of this initiative is to serve as an educational tool and a highly visible icon of sustainability on campus. For consideration of location, we advocate for open, sparsely shaded, high traffic areas to maximize this effect. Such as (but not limited to) outside of Squires Student Center, Newman Library, and Lavery Hall.

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

This initiative will help Virginia Tech continue to become a leader in campus sustainability. While the initiative's impact on GHG emission will be negligible, the solar tables already are and will continue to be a symbol of the University's commitment to sustainability, despite the restrictions on renewable energy generation under the APCo contract. The Virginia Tech campus will be able to operate as a sustainable laboratory by making use of this unique and revolutionary product that supports clean energy in "off-the-grid" applications.

10. Virginia Tech will engage students, faculty, and staff through education and involvement to develop and implement innovative strategies for efficient and sustainable use of energy, water, and materials in all university-owned facilities.

The tables will serve as a platform, both physically and symbolically, to engage and educate the community

on renewable energy through interaction and dialogue. The highly visible solar panels will impact a large number of students' behavior and the sleek progressive design will encourage students to be table material will encourage them to reduce and recycle. With these tables spread throughout our beautiful campus, thousands of VT visitors each first impression will be focused around the University's interest and practice of sustainability. Also, the initiative will count towards LEED certifications for new developments by contributing to education of LEED. This initiative will become a model for other campuses around the world, and garner more positive media coverage of the University's steps to improve sustainability.

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

The estimated cost for one solar table is $11,000 (based on figures from the current table) and includes manufacturing and shipment. The estimated cost for the placement of a concrete slab and installation is $2,500. Thus the total estimated cost for one solar table, slab and installation is $13,500. Two tables is $27,000.

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.

Although the energy saving returns are minimal, these solar panels are intended as a centerpiece for educational purposes and a stepping stone towards more sustainable initiatives.

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

x **One-time** **Ongoing**

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

Funding is not available from another source for this proposal.

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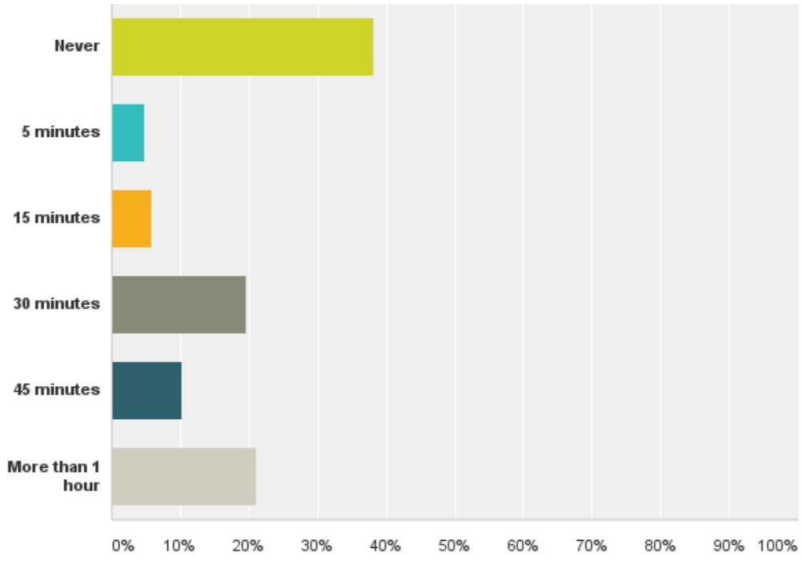
Part IV- Requestors/Reviewers		
Prepared By (Name of Contact for Student Organization	Caed Cunningham	Date 11/8/16
Reviewed By (Name of Appropriate University Official)	Denny Cochrane	Date 12/1/16
Reviewed By (Name of Office of Sustainability Representative)	Denny Cochrane	Date 12/1/16

Appendix

Survey Results: 204 Virginia Tech students were surveyed using SurveyMonkey, which can be found at https://www.surveymonkey.com/s/NNNZJMY. The survey was distributed via social media and in-person in the library. The results show that 61% of students charge their phones on campus. 90% of students charge their laptops on campus.

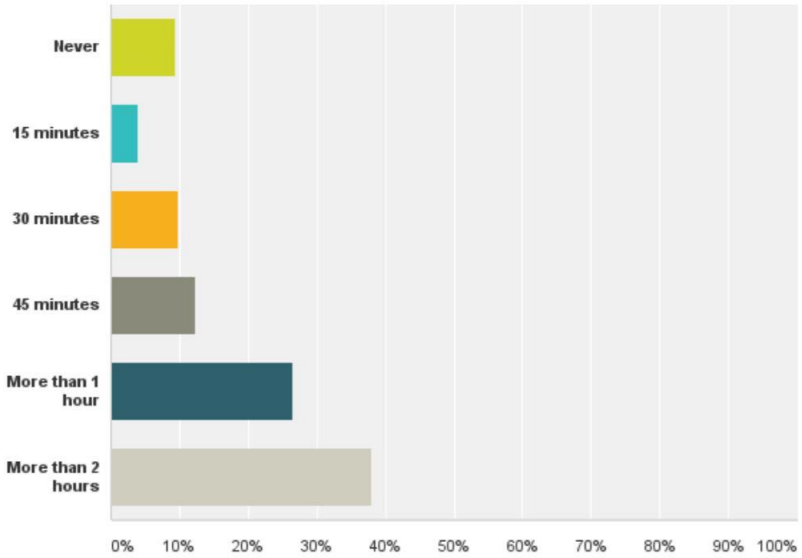
Q1: On an average day, roughly how much do you charge your phone on campus?

Answered: 204 Skipped: 0



Q2: On an average day, roughly how much do you charge your laptop on campus?

Answered: 203 Skipped: 1



http://www.theconnectable.com/hub/

Spec Sheet

ConnecTable Hub
Product Specification Sheet
Overview

- Highest solar power capacity of any charging station
- True off grid solar power design that delivers dependable year round charging power even in worst case conditions
- Charges 75-150 mobile devices per day (typical use)
- Supports tablets, laptops, cameras, other electronic devices
- Optimized system design includes high quality UL listed solar power components for safe and trouble-free performance
- Architectural design, and a fully engineered commercial grade structure
- Attractive, non-glare LED table top lighting system for nighttime use
- Hardened for public use. Low maintenance. 20 year expected service life
- ADA compliant design, Seats four (4) comfortably

Charging Specifications

- Solar Array Capacity: 530 Watts DC
- Autonomy (days): 3.0
- Depth of Discharge : 50%
- Four (4) GFCI traditional electrical receptacles & Eight (8) USB charging ports
- Battery: 225 Amp-Hour Sealed Gel Valve Regulated Lead Acid (VRLA)
- Battery Bank Voltage: 12.0 Volts DC
- Daily Energy Production 2,106 Wh.1

- Interior: Morningstar SureSine300 (Island/Off-Grid)
- Charge Controller: Morningstar TS-MPPT-45 (Maximum Power Point Tracking)
- Battery Replacement Cycle: Five (5) years/1000 cycles (typical)
- All electrical and structural steel components bonded to NEC-compliant earth grounding electrode (ground rod)

Structural Specifications

- Steel Structure: 100% Powder Coated Structural Steel
    - ASTM A-500 Grade B Structural Steel – Horizontal Tube, Vertical Tube, and Solar Canopy Supporting Tube; Thickness: 3/16"
- Smooth Concrete Table & Benches, Perforated Steel
- Wind Speed Rating: 90 MPH Self-Ballasted (no surface attachment required)
- Durable industrial strength construction with easy to clean surfaces
- Seats four (4) comfortably with a minimum 24" centerline distance between parallel seats
- Dimensions :
    - Canopy Height: 8'5" (high side)
    - Canopy Head Clearance Height: 6'8" (low side)
    - Bench Seat: l' 6 1/2" W" x 4'6" L
    - Table Top: 3'7" W x 4'6" L
    - Overall Footprint: 10'9 3/16" W x 4'6" L (including solar canopy)
    - Bench & Table Footprint: 7'0" W x 4'6" L (Extended 4 panel canopy 10'10" W x 6'6" L)
    - Total Weight: 1,580 lbs. (including electrical components and concrete ballast block)

Security

- Robust ballast mount system minimizes movement
- Additional "anti-vandal" surface attachment options
- Robust, heavy gauge steel components, inherently vandal-proof
- Tamper-resistant hardware and fasteners

Monitoring

- User Monitoring/Meter: MidNite Solar Battery Capacity Meter
- Includes RM2 meter systems for current and historical parameters
- Optional upgrade to include prewired charge controller, internal USB/serial port access cable available
- Optional upgrade for charge controller with comprehensive system monitoring and control via Ethernet port and manufacturers web portal
- Customized external Ethernet port available

Add-On’s & Customization

- Wide range of steel powder coat colors
- User logos or advertiser/sponsor branding
- Wi-Fi access and security cameras.5
- Tablet video screens.5
- Expanded shade canopy

Warranty

- One (1) year warranty on installation

- Twenty Five (25) year warranty on solar panel power output
- Individual component warranties

Savings

- Volume discounts available
- ConnecTable qualifies for a 30% Federal Business Energy Investment Tax Credit (ITC) for tax paying individuals 2.3
- ConnecTable qualifies for Federal MACR'.s accelerated depreciation for a tax paying business entity.4
- Financing available

ConnecTable Hub is a product of Carrier Class Green Infrastructure

[1] PV Array Daily Energy Production with average irradience for Philadelphia, PA in June.

[2] Consultation with a tax advisor recommended.

[3] http://www.dsireusa.org/incentives/incentive.cfm?Incenti ve_Code=US02F

[4] http://www.dsireusa.org/incentives/incentive.cfm ?Incentive_Code=US06F

[5] Additional fixed power loads requires 2nd battery; additional loads can limit device charging power availability

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ZZGreen Infrastructure

ConnecTable™

Product Pricing

HUB Model	< 4 Tables	4-9 Tables	>9 Tables
ConnecTable HUB Electronic Device Charging Station French Gray smooth concrete finish Two detached concrete benches Bronze steel color Four solar panels	$10,000.00	$9,500.00	$9,000.00
Additional Options			
USB or 12V port for Wifi devices	$ 1,000.00	$ 950.00	$ 900.00
Premium steel color	$ 500.00	$ 500.00	$ 500.00
Total Sales Price before Tax and Freight			
Sales Tax	tbd	tbd	tbd
Freight	tbd	tbd	tbd
Total Sales Price			