

STUDENT SUSTAINABILITY COMMITTEE APPLICATION INFORMATION

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Detailed Project Description:

An important facet of sustainability is individual choice. Large capital projects like wind turbines, solar panels, prairie restoration, etc., work from top organizational levels to lessen negative environmental impacts. Yet individual sustainability decisions, while small in scale, can have a large aggregate impact on sustainability when surveyed as a group. Examples of individual sustainable decisions include turning off lights, decreasing personal water use, driving less, consuming less meat, etc. Our project fosters individual sustainability habits to have a significant effect on overall campus sustainability. We will place energy displays in prominent campus buildings to educate students and staff about their consumption habits. Using market software, we will translate energy statistics into relevant figures to which average consumers can easily relate. Viewers will see more than total watts consumed; they will see the data in terms of into greenhouse gases, generation costs, and environmental impact. The software will also interpret energy data over time so that viewers can see how their habits affect total energy consumption. Comparisons between other campus structures will encourage competition to reduce the most energy. Energy displays meet a key definition of sustainability by educating individuals and encouraging personal conservation for a more sustainable campus.

We see this project as a technological diffusion effort with decade's lifespan. We plan on installing displays in about 5 to 7 buildings initially to test different software packages and ascertain effectiveness. As the campus renovates buildings with real time metering, more energy displays with more data can be put up in more buildings. We hope that this energy display initiative can even drive faster installation of real-time metering. Eventually, we hope to put displays in residence halls where students have the largest personal control over their daily actions' environmental impact.

We will work with the individual colleges involved to put up energy displays. Colleges with target buildings will be contacted and encouraged to put up displays in prominent buildings. The College of ACES will be our primary start due to their past involvement in sustainable projects. Individual colleges' directors of operation will be leads on detailed installation of energy displays.

The number and types of initial locations will depend on total funding available. The Everitt Lab, Altgeld Hall, Gregory Hall, DKH, Foellinger Auditorium, Undergrad Library and the Ikenberry Commons (with three separate spaces: Residence, Dining and Kitchen) are high potential locations for displays. Preferred sites will already have real time sensor monitoring. Updated sensor equipment is required for seamless use in our display software (Building Dashboard).

Many other campuses have implemented displays with the software Building Dashboard to further sustainability goals. American University uses Building Dashboard in residence halls and academic buildings across the campus to monitor and display electricity consumption in real time, conduct building comparisons, track progress toward meeting monthly budget goals, and host resource use reduction competitions. The University of California in Santa Cruz tracks similar data with the addition of water consumption. They focus on enabling residents to make reduction commitments and assess progress using the displays. The University of Wisconsin, Milwaukee, uses displays to track electricity, natural gas, and water consumption. Furthermore, U W - Milwaukee displays their energy production from alternative sources like photovoltaic panels and rain water recycling. More University examples can be seen at the following url: <http://www.luciddesigngroup.com/institutional.php>.

Budget & Fundraising:

1. Prep the meters on buildings that need adjustments (this includes network connections, real time meter upgrades):

Foellinger	\$8,000
Undergrad Library	\$8,000
Ikenberry Commons	\$10,000

Other buildings in project include the following (and do not need meter upgrades):

Altgeld Hall
Everitt Laboratory
Gregory Hall
DKH

2. Materials:

Software	\$12,500 for the first building \$13,000 total for additional (6 at \$2,000 plus \$1,000 additional for Ikenberry)	
Annual software fees		\$4,200
Hardware		\$9,000
Display monitors		\$42,000
Marketing efforts		\$2,000
Total:		\$108,700
Annual maintenance costs		\$4,200

We are seeking funding from the SSC and a number of other campus wide offices and initiatives. The Environmental Change institute (ECI) has been approached and will consider supporting this project as soon as FY2012 is approved. The Office of Sustainability will be contacted, since the ECI and this office are working together on a proposal to consolidate and develop a more comprehensive and effective organizational structure. The Colleges and departments within each of the seven chosen pilot buildings will be contacted during the process, since they will be most impacted financially. And finally, the Facilities and Services unit have been very involved in the planning and discussion of this project. They are supportive of this project and financial support will be discussed.

Timeline:

This project is dependent upon funding from both the SSC and the other relevant participants. The estimated timeline includes:

3/7/2011	Fundraising and budget development
4/4/2011	Bids from software companies due
5/15/2011	Materials and software ordered
8/15/2011	All hardware and software installed, systems up and running for beginning of fall 2011 semester

Outreach and Education:

This project is designed to let students discover, in a visual and interactive manner, the real time and historical energy usage in each building, including electricity, steam, chilled

and domestic water usage. Real-time meter readouts will let students and staff understand the efficient, or inefficient, usage patterns of the building, and simultaneously compare it with other designated project buildings.

We feel that these graphic, real, and accurate data will provide impetus to prompt change in the building's usage patterns and physical environment. With touch screen capabilities, students and staff can compare and contrast building energy use, per square foot usage, per person usage, and other measures of effectiveness. Ultimately, with these data and the information and educational efforts associated with the project, an anticipated culture change will occur within the buildings with students and staff.

Planned communication efforts will include information and posting on University websites (ECI, Office of Sustainability, F & S, and SSC), a launch event at each building during the weeks after installation, beta testing with administrative and media participants, and ongoing support and updates during the first year (2011-2012).

Planned educational dimensions of this program will include invited speakers during the ECI Fellows seminar series, presenting research and application information on energy use. As a consequence, we believe that the growth of increased awareness of energy use, and the individual's role in this energy use, will produce beneficial behavioral change.