SWATeam Recommendation

Name of SWATeam: Energy Conservation and Building Standards

SWATeam Chair: Marian Huhman Date Submitted to iSEE: May 7. 2018

Title: **Energy Conservation Funding through Energy Performance Contracts with Energy Service Companies. (New in 2018)**

Specific Actions/Policy Recommended (a few sentences):

We recommend $10M per year (scalable) of funding for the next 5 years to implement critical projects that **work in concert with energy performance contracts** (EPC). EPC contracts are fulfilled by specialized, accredited firms known as energy service companies. The university uses EPCs to manage complex projects targeting facilities with high energy use, such as laboratories, maximizing energy efficiency and addressing sizable volumes of deferred maintenance issues along the way. The campus backlog on deferred maintenance is approaching $1 billion.

Rationale for Recommendation (a few sentences):

Energy performance contracting allows UIUC to install new or upgraded energy-efficient equipment by leveraging guaranteed future energy savings. But that guaranteed savings over the years of the contract is only achievable through regular planned maintenance on the equipment. Maintenance is performed by F&S teams. The attached EPC summary shows 6 major EPC projects planned or proposed. These projects cover installations of energy efficient equipment along with addressing regular/deferred maintenance. The $10M is needed to support these projects.

The planned and proposed projects on the attached list should be completed soon to reduce campus energy consumption ASAP. Finances, as specified in this recommendation, should be secured so that the campus utility bill can be reduced by millions of dollars per year sooner rather than later.

The cost avoidance through these contracts is enormous. For example, the College of Veterinary Medicine EPC resulted in an estimated cost avoidance of $1.4M in the first year with a $44M cost-avoidance planned over the 20 years of the contract. The attached list shows that completed contracts worth $106.2 million are estimated to result in $206 million in energy cost avoidance over the 20 years of the contract.

Unfortunately, lab buildings that are high energy users do not have a funding source such as through AFMFA's fees for deferred maintenance.

Energy consumption at UIUC is down an impressive ~33% since the beginning of iCAP. Similar gains will be more difficult in the future as we turn to larger projects with slower payback. The iCAP goals are ambitious and mandate us to act boldly and robustly with energy conservation.

Connection to iCAP Goals (a few sentences):

Energy Conservation and Building Standards objectives:

- "Strengthen centralized conservation efforts focusing on building systems to achieve a 40% reduction in total campus building energy use by FY30."

Perceived Challenges (a few sentences):

Energy conservation projects are sometimes viewed as discretionary, but it is critical to understand that immense savings can be realized by spending money on energy conservation efforts. The challenge is always to allocate funding

during austere times to support a vital, but not necessarily immediate, cost savings set of programs. Thus, it is challenging to convince decision makers to **spend now to save later.**

Suggested unit/department to address implementation: Office of the Provost

Anticipated level of budget and/or policy impact: **High** (continued funding and development of campus conservation programs).

Individual comments are required from each SWATeam member (can be brief, if member fully agrees):

Team Member Name	Team Member's Comments
Marian Huhman	Funding deferred maintenance is not exciting, but it is wise and visionary and the payoffs are huge for the University in cost-savings and energy consumption reduction.
Yun Kyu Yi	Losing funds like DCEO and limitations on the state budget make it very difficult to track and sustain iCAP goals. It is very important to act now to prevent great losses by omission.
Karl Helmink	Excellent way to reduce campus energy consumption as quickly as possible. Larger amounts of deferred maintenance work could be completed. Larger lab buildings with high energy costs would be addressed.
Dave Boehm	This funding is essential to meet the desired iCAP goals. In addition to the energy conservation measures achieved, this funding will assist in addressing deferred maintenance. This project delivery method provides an excellent value for the University.
Andrea Martinez Gonzalez	It is key to make this investment now because without it, long term avoidable costs rise exponentially every year. Previous funding has been cut back or is not applicable to all of the needs proposed (e.g., AFMA fees that do not figure into labs).
Swarnali Sanyal	The annual budget requested here will go a long way in taking care of expenses that might occur in future. This funding will be essential for upkeep, maintenance and betterment of the infrastructures proposed and have positive impact on overall university infrastructure.

Comments from Consultation Group (if any; these can be anonymous): From Paul Foote, F&S Services:

I have focused most of the last 3 years on campus energy efficiency and conservation opportunities and concur that the largest energy consuming buildings with the most to gain from an ECP have considerable deferred maintenance and are in dire need of upgrading to efficient systems and design. This funding is a crucial part of the campus next steps in energy efficiency and conservation to improve infrastructure, reduce energy demand per GSF and reduce maintenance backlogs.

Explanation and Background (can be supplied in an attachment):

This is the third recommendation from our SWATeam specific to energy conservation.

The first: *Funding of Energy Conservation Efforts (2016)* focused on restoring funding of energy conservation projects to FY 2015 levels, implementing systematic upgrades of building control systems (~$3.26 M) and maintaining the state utilities budget of $65M.

The second, *Energy Conservation Funding (New in 2017),* focused on replacement of the funds from the loss of the DCEO grants ($1.5M) and increasing the number of teams that recommission (maintain and reset operating systems in buildings) and perform preventive maintenance. Total = ($3.55M)

This third recommendation is specifically aimed at funding the EPC projects.

The recommendation put forward emphasizes the importance of funding energy conservation efforts that align with the commitments outlined in the iCAP. Compared to other Big Ten schools, the University's maintenance is underfunded. However, campus energy usage is similar to other Big Ten schools and has shown dramatic improvement since FY 07.

Even in these austere times, spending money to conserve energy means saving money in the long run. Other sources of funding are potentially available including Stewarding Excellence funds which could be used for these initiatives. U of Illinois Foundation funding should be pursued.

a. EPC funding/benefit spreadsheet is attached.
b. See UES website for background information on prior EPC projects. http://www.fs.illinois.edu/services/utilities-energy/energy-conservation/energy-performance-contracting