

## **SWATeam Recommendation**

Name of SWATeam: Energy Conservation & Building Standards

SWATeam Chair: Brian Deal

Date Submitted to iSEE: May 2015

---

Specific Actions/Policy Recommended (a few sentences): Energy conservation programs should be exempted from any budget cuts or rescissions because of their key sustainability impacts and clear return on investments.

Rationale for Recommendation (a few sentences): On average, retro-commissioning projects have a 5 year payback, ESCOs must have a 20 year payback or less (State of Illinois requirement), and energy conservation projects in general have a 20% return on investment. Over \$28 million have been generated from retro-commissioning in terms of avoided costs so far, and the University stands to gain much more from continued projects in the future. Additionally, these projects reduce deferred maintenance and reduce the impetus for increasing the University's energy generation in the near future. In addition if campus DCEO grants are cut either now or in the future, funding will need to be allocated to continue the RCx effort.

Connection to iCAP Goals (a few sentences): Energy conservation programs help decrease total building energy use and building-related GHG emissions, as urged by the iCAP. An increase in the energy conservation effort is needed to gain results similar to recent history as buildings are being evaluated for a second round of RCx. Lack of funding will slow progress towards the University's long-term goals in energy & emissions reductions.

Perceived Challenges (a few sentences): Decreased state and DCEO grant funding still needs to be dealt with, and so this budget cut will likely need to be pushed on to some other program(s) if energy conservation programs get exempted. However, as mentioned before, saving energy conservation programs from budget cuts will pay for itself.

Suggested unit/department to address implementation: **Facilities & Services and/or Campus.**

Anticipated level of budget and/or policy impact (low, medium, high): **High**

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

Team Member Name	Team Member's Comments
Brian Deal	I fully endorse this recommendation
Karl Helmink	I fully endorse this recommendation.
Fred Hahn	I endorse this recommendation
Dhara Patel	I fully agree.
Claire McConnell	I endorse this recommendation.
Scott Willenbrock	I endorse this recommendation.

## Justification.

Building energy conservation is considered the easiest and most cost-effective way to stabilize energy costs, return capital investments, and achieve reductions in GHG emissions. On this campus a large portion (up to 85%) of our energy costs (and associated emissions) are a direct result of the energy needed to heat, cool, and provide electricity to campus buildings. A typical University of Illinois building however, has the potential to achieve (easily) a 30% reduction in energy use and provide a return on the investments (ROI) at a rate of between 20-25%<sup>1</sup>. Very few investment dollars can provide this magnitude in return. This suggests building energy conservation should be at the forefront of any University of Illinois economic development strategy.

Despite the obvious logic that suggests we should be *increasing* investments in energy conservation on campus, energy conservation projects (ESCO's and Retro-commissioning (RCx) projects) are being considered for budget cuts. On the UI campus, ESCO projects offer a guaranteed payback rate of 20 years or less and RCx projects have provided rates of payback of less than 5 years to date. The RCx group (in association with F&S support) has saved the campus over \$28 million in avoided utility costs of in their 7.5 years of operation. The current RCx project averages a 28% utility cost reduction (per building) and has covered approx. 8 million square feet of campus space. There is more work to do.

Along with economic and climate benefits, conserving energy in our buildings reduces central plant stress by reducing campus energy demands. This helps avoid maintenance and capital infrastructure investment costs at the central facilities. Building energy conservation also helps the campus meet other important goals including: sustainability goals, reducing our deferred maintenance, and reducing our preventative maintenance requirements. The College of Engineering ESCO, which will be bidding shortly, addresses needs in some of the higher energy consuming buildings on campus including the Materials Research Lab, Loomis, Microelectronics, Engineering Science Building, and the Superconductivity bldgs. We anticipate large reductions in energy usage at these locations.

The majority of the mechanical equipment in engineering ESCO buildings dates from the 1950s thru the 1980s, much of these systems are at the end of their useful life and energy costs have increased significantly since this point in time. The technology associated with HVAC systems continues to improve rapidly to allow for more energy conservation items to be incorporated. The alternative to not funding building energy projects is that the university maintains out of date, energy hog systems for a longer period of time, pays for the ever-increasing utility bills to operate these systems, and fails to reduce their GHG emissions. This is an unacceptable alternative. We advocate strongly for *NOT* decreasing our energy conservation budget, period.

---

<sup>1</sup> These are figures derived from the Illinois Smart Energy Design Assistance Center (SEDAC) database on public buildings in Illinois.