

# Presidents Climate Commitment Advisory Committee

## Year End Report, AY 17/18

Committee Organization Committee members for this year were: Becca Bruner (C.E.A.), Andrew Crown-Weber (community rep.), Mark de Araujo (drama), Matthew Devensky (facilities), Michelle DeWitt (admissions), Mark Galatowitsch (biology), Aaron Godlaski (psychology), Elizabeth Graves, (development), Elizabeth Haynes (development), Patrick Kagan-Moore (drama), Cindy Long (communications), Anne Lubbers, (biology), Zach Schmucker (S.G.A.), Scott Messer (facilities), Preston Miles (chemistry), Patrick Noltemeyer (president's office), Rose-Marie Roessler (biology), Russ Strunk (I.T.), Brett Werner (environmental studies). All of our meetings are open and we attempt to make our meetings known widely. This year we were joined by Michael Rammage, Gentry Brown, Jeannette Burke, Margaux Crider.

The committee met seven times during the academic year (Sept 12, Oct 10, Nov 14, Dec 6, Feb 6, Mar 8, Apr 3). In September and October we identified our highest priorities and used that to guide our work through the year.

Sustainability Month and President's Sustainability Convocation Our committee's biggest community awareness effort occurs each fall. The PCCAC, and C.E.A., and staff and faculty volunteers from across campus arranged seventeen events, ranging from fun activities to convocations, to service opportunities. Matt Partymiller, of Solar Energy Solutions, was the speaker for President's Sustainability Convocation.

Energy Master Plan Identified in our first meeting of the year, a high priority was the pursuit of a plan that would identify energy efficiency updates opportunities on campus. This effort was accepted as part of the Campus Master Plan. Hastings and Chivetta proposed two approaches: (1) a building by building analysis of energy use intensity and comparison of those results to EPA Energy Star and regional use indices, and (2) a detailed inspection of seven major buildings to evaluate current operational performance relative to original design.

Michael Mosbacher of 8760 Engineering (Apr 4, 2018) identified thirteen buildings as exceeding ASHRAE 90.1 and regional energy use standards. Those buildings were: Campus Center, JVAC, Boles Natatorium, Olin, 519 Grant, Norton Center, Ground Shop, 360 College, Navy/P.O., Horkey, Chowan, Crouse. Unfortunately, the report does not include an inspection of these low-efficiency target buildings and thus does not provide the specific recommendations for mechanical and architectural upgrades or estimates of costs and return that are necessary to guide our capital project priorities.

At this point, the review operations of major buildings (Crouse, Pearl, Sutcliffe, Campus Center, Brockman, Young, Olin) has not begun

Green Revolving Fund This fiscal year (17/18) is the second year for our formally recognized Green Revolving Fund. Our project this year was replacement of lighting in Hazelrigg Gymnasium. In this project the forty-eight 400 watt metal halide lights were replaced with twenty-four 298 watt LED fixtures. The total project cost was \$16,041, with a savings of \$5,015/year and a payback of 3.2 years.

With the return from 2017 project (4,029) and the contribution of rebate from KU/LGE for 2107 projects (677), and contribution from Refrigerator project (700), and the air travel mitigation effort (\$15 per each student abroad, 5,400), and unexpended balance we have slightly over \$20,000 available for a 2018/2019 project. We should work to coordinate this with energy efficiency projects pursued through performance contract with Johnson Controls.

Hope Springs Yard Sale One of the College's most successful sustainability efforts is accomplished through collaboration with the Hope Springs Yard Sale. Patsi Trollinger, Ann Young, and Sara Scott Hall lead this effort. Centre's Facilities Management Department provides logistical support and 111 community volunteers provided 948 hours of labor. This fifteenth year effort provided 8,000 items for sale, diverted 25,000 pounds of goods from the local landfill, and raised \$11,778 for local persons diagnosed with multiple sclerosis.

Chowan Photovoltaic Project During AY 16/17 we began the College's first on-campus renewable energy project. Support from the Pepsico Foundation Zero Impact Fund, the President's Office, Student Government Association, and a GiveCampus effort among alumni raised \$38,900. The solar array was purchased from Solar Energy Solutions and began operation on August 15, 2017. Production of 21.8 MWh through the first ten months of operation through suggests we will exceed the performance predictions by over 10%.

Cindy Long arranged a "ribbon-cutting" activity for the solar array on Chowan Multipurpose Building as part of the Sustainability Month activities.

This success encouraged us to pursue a Phase II (2018) effort to complete the solar array installation up to the maximum currently allowed through Kentucky net-metering regulations. A second request to Pepsico ZIF fund was successful (\$10,000). With that base and with support from Student Government Association (\$6,500) and other gifts (\$1,000) we now have in hand almost three-quarters of the funds necessary. The Development Office has approved a limited scope solicitation that will begin in early July. We hope to secure donations to purchase the last 17 panels (at \$400 ea.) and make the purchase and complete installation before year-end.

Lock 14 Partnership We continue to be in discussion with Dave Kinloch and Appalachian Hydro Associates about a possible partnership in a hydroelectric plant on the Kentucky River at Beatyville/Lock 14. The proposed arrangement would provide Centre a secure, long-term investment and also the ownership of renewable energy certificates (RECs) equivalent to 65% of our electricity use. Kinloch and AHA have reached agreement with Berea for a similar project at Ravena/Lock 12, with construction to begin mid-summer. We hope to reach our decision regarding Beatyville/Lock 14 before year-end.

Energy Efficiency Refrigerator Project Again this year we offered incoming first-year students the opportunity to purchase an Energy Star dorm sized refrigerator. In addition to the reduced price made available through a negotiated price with the local Sears distributor, the students enjoyed the convenience of delivery to their room before move-in day. The thirty-nine units purchase in fall 2017, along with the fifty-nine purchased in 2015 and 2016, are now saving the College 20,000 pounds of CO<sub>2</sub> emissions per year.

Performance Contracting Early in 2018, partly as an outgrowth of discussions around the new Campus Master Plan and partly by our desires to improve energy efficiency and reduce operating costs, the College engaged with Tenzing Energy and Johnson Controls, in discussions of a possible performance contract. Performance contracting is an arrangement in which a private firm completes energy efficiency updates on our buildings and finances the costs from utility savings. Through the payback period (usually 5-8 yrs.), the arrangement is cost neutral, and only after payback do the utility savings go to our bottom line. All reductions of GHG emissions, however, move us toward our net-zero goals.

The plan is to select specific projects in June and begin work this summer. There is a good opportunity we may be able to complement the projects pursued through performance contracting projects with additional projects pursued through our Green Revolving Fund.

Building Energy Use Competition During spring term 2018, Jeanette Burke served as intern for the work of the PCCAC committee. One of the high priority goals set out for this year was to develop a building energy use competition and Jeanette pursued this project. Data collection involved reading the electric meter on each building each week, and then computing a comparison relative to average electricity use for the past two years available from the SchoolDude database. By normalizing with historic data, differences in building design and equipment are eliminated. Over five weeks in March and April, Jeanette emailed to the campus the relative energy use for sixteen buildings. From informal comments we received, the competition was successful in bringing attention to the value of individual energy conservation.

### Energy Conservation Efforts

*Year-End Turn-Down* At our November and December meetings we discussed the value of reducing thermostat settings from the end of finals (12/8) to beginning of winter term (1/3). For several years, our Facilities Management group have done this on selected buildings as a matter of good practice. This year, with all-campus memo from Mr. Hutzley, we attempted to increase awareness and support for the effort. When utility use data are available later this year, we hope to prepare an analysis that can be used to explain to everyone the value of this practice.

*Thermostat Policy* Many colleges and organizations have established policies to govern thermostat settings and thus conserve energy. Our committee has been reluctant to take this approach.

During the planning and installation of solar panels on Chowan, we observed cooling to 72 during the summer when the building is almost never in use. The energy use index survey conducted by 8760 Engineering confirmed this observation. Chowan had a 73 EUI score, ranking 11<sup>th</sup> highest energy intensity of all buildings on campus.

We contacted Brad Fields in the fall to discuss the possibility of more conservative settings. In early April '18, Sonny Evans, Brad Fields and Lisa Owens met with Matt Devensky and Robbie Lamb and agreed to a new policy for this building. Thermostats will be at 80° during cooling months and 50° during heating months. The water heaters will also be turned off. A plan for accommodation of special events was established.

Because Chowan has such a large building volume and little insulation, this new practice has potential for significant savings.

Eco-Charrette for North-Side Dorm Members of PCCAC and others were invited to participate in discussions on April 26, to identify appropriate strategies to make the new dorm more energy efficient. The College has now made initial commitment to pursue USGBC-LEED certification, with a tentative target of silver status.

Association with Second Nature The President's Climate Commitment, of which Centre is a charter signatory, was originally sponsored by the American College and University Presidents Climate Commitment. Beginning in 2015, continuation of that effort shifted to the Second Nature organization. Centre continues to be a full dues-paying member of that organization. In addition to their standardized system that makes our GHG reduction efforts available to the public, we also receive support and advice on implementation strategies.

Enterprise Car Share This program is offered primarily as a convenience for our students, but it also reduces the amount of parking required on campus. The use statistics supplied by Enterprise report an average of 49 members, 5 to 50 trips per month, and trips ranging from 5 to 70 miles.