

July iWG Meeting

July 22, 2021, 12:30 – 2 PM

Attendees: Morgan White, Ximing Cai, Caitlin Bloomer, John Dallesasse, Owen Jennings, Brian Bundren, Marcus Jackson, Sandy Yoo, Alexandra Gergova, Meredith Moore

Guests: Bill Rose, Andy Stumpf, Paul Foote, Tony Spurlock, Rob Roman

1. Introductions
2. [Energy006](#)
 - a. Update on [Freezer Challenge](#) (Paul)
 - i. Paul has been leading the International Freezer Challenge, which originated from Energy iCAP Team discussions and began as a Student Sustainability Committee supported project.
 - ii. Preliminary results have been collected
 1. 2 million samples sustainably discarded this last competition – significantly more than in previous years
 2. 34 labs participated, 110 freezers – for comparison, the first year of participation, only seven labs participated and four completed the challenge
 3. \$30,000 in energy savings annually; there are a lot of opportunities to help our labs become more energy efficient.
 - iii. Researchers are more willing to participate when we can work with and help them understand how to make their labs more efficient
 - b. Update on Greener Labs Inventory Toolkit (Morgan)
 - i. [Equipment inventory toolkit](#) link was sent in E-week and shared with researchers who participated in the Freezer Challenge.
 - ii. Process:
 1. Make a list
 2. Borrow a Kill A Watt monitor
 3. Enter data in Excel to provide summary iii. This is currently a voluntary option for labs and not a requirement.
 1. *Ximing*: Making this a requirement can be a part of the Energy006 recommendation and may need staff time.
 - c. Energy Team introduce Energy006 (Bill, Andy)
 - i. This recommendation would establish a committee to oversee the process of updating sustainable lab policies and engagement of researchers. ii. In the long term, this would become integrated in the lab safety modules that researchers have to be trained in regularly and would involve those who oversee lab safety practices.

- iii. Sustainability research makes up a significant portion of total research dollars, so a greener lab program should be well-integrated into our labs.
- iv. We would like to see as many labs as possible complete the inventory. Those that participate could serve as an example and help other labs.
- v. This recommendation has been well received in the past. It is an extension of a previous recommendation ([Econs004](#)). This updated recommendation shows that we are making progress in the right direction.
- vi. Previously, we wanted to create a whole program dedicated to green lab certification which would need a dedicated staff person to help facilitate the program and work with other units.
 - 1. A core issue was getting buy-in and ownership. Who should own/oversee the program and hire the new employee, e.g., Vice Chancellor for Research, Division of Research Safety (keeping in mind safety is the number one priority), iSEE, Utilities and Energy Services.
 - 2. Leaned toward having a committee comprised of researchers, lab managers, sustainability staff representation, and related stakeholders.
 - 3. Had not yet gotten to the point of charging the committee before COVID.
- vii. Next step for the iWG assessment is to recommend formation of a Green Labs committee charged by Susan Martinis, the Vice Chancellor for Research and Innovation. iWG, DRS, iSEE, and F&S can work together to advise in this process.
Need to get faculty and researchers on board to help move this along.
- viii. To get buy in from colleges, need to work with Associate Dean for Research or their designee, e.g., College of Engineering and LAS.
- ix. Typically, a recommendation to form a committee does not get transmitted to the Sustainability Council but this is a large scale recommendation with broad impacts. It should be routed to the Council by way of the Sub-council and ask the Vice Chancellor of Research to sign the charge letter.
- x. DRS has an existing committee that addresses health and safety issues and can be advised as part of this OVCRl committee.
- xi. Brinn showed in her report last spring that we can save money and reduce energy by making changes to daily lab operations and practices. The committee should include the equipment inventory as an initial action.
- xii. The iWG supports bringing this recommendation to the Sub-Council with involvement of the Vice Chancellor for Research and Innovation.

3. [Energy007](#)

a. Overview of [Energy Management Plan](#) (Rob)

- i. A component of the plan was that we will continuously evaluate how we can operate more efficiently and save more energy. Section 2.2 outlines the sustainability connection.

- ii. This is a 5-year plan that outlines how and why we efficiently manage energy and addresses budget/costs and technology.
 - iii. Evaluation of potential energy conservation measures on campus was performed by the international consulting firm Science Applications International Corporation (SAIC):
<https://icap.sustainability.illinois.edu/project/saic-projects>
 - iv. When energy is reduced, carbon emissions decrease.
 - v. Intensive projects need to be completed in order to achieve carbon neutrality; one of the greatest campus challenges is the use of steam.
 - vi. Renewable energy sources are difficult to find a medium to heat; this is a large undertaking because our campus infrastructure was built on steam operations.
 - vii. Unlike the Energy Management Plan, this proposed comprehensive energy document would instead be a carbon neutrality plan, going beyond the existing 5-year plan.
 - viii. Storage is a significant issue in the utility world; we are looking at renewable energy storage projects that go beyond batteries.
 - ix. We need the capital to become carbon neutral.
- b. Energy Team introduce the recommendation (Bill, Andy)
- i. The Energy Management Plan seems to have been developed internally, addressing topics that have been under study at the university though perhaps lacking initiative outside of the university.
 - ii. To develop a comprehensive carbon neutrality plan, the [2015 Utilities Master Plan](#) should be used as a starting point and should be incorporated into the campus master planning process.
 - 1. Summary of Utilities Master Plan:
https://fs.illinois.edu/docs/defaultsource/utilities-energy/uofi_utilities_masterplan.pdf?sfvrsn=e3bbfbea_0
 - iii. Previous plans identified our central steam system as the biggest impediment to carbon neutrality and lacked solutions to address building envelopes. These reports were economic centric but not carbon centric.
 - iv. This recommended plan should be modeled on the Utilities Master Plan with a similar structure, e.g., presentation of various scenarios to achieve carbon neutrality and associated costs.
 - v. Canadian parliament buildings have goals to reach zero greenhouse gas emissions by 2030. Their plan looks very different from our plans; there is a strong focus on building envelopes.
 - vi. Rob agreed that we need a roadmap to achieve carbon neutrality and an understanding of what the impact to the campus community would be since there will be both operational and social impacts. It would change the way that we do business and would significantly impact capital and utility operations.
 - vii. It will likely cost billions of dollars to achieve carbon neutrality (there is currently about \$1 billion of estimated deferred maintenance) but campus

leadership needs to have a picture of how this can be done and more specifically, how this can be done most effectively on our campus.

1. One scenario would be to leave steam in place through add a micro nuclear reactor to generate high pressure steam.
 - viii. Sandy asked if we can take a step-by-step approach rather than all or nothing? 1. Bill said that this would be a question for those handling the report and the type of questions that should be addressed in this type of 30-year plan.
 - ix. This comprehensive carbon neutrality plan would be a guiding document that needs to assess what percentage we need to cut energy use in certain buildings and what investments are needed to achieve a certain amount of savings.
 - x. Other questions to address include what will happen if we do not do anything? What are the risks? What would it take to revamp the entire system? What are the negatives or disadvantages?
 1. Universities are strong candidate for testing new technologies.
 - xi. This plan should be measurable and flexible enough to allow for adjustments to be made as needed. It should be clear about what the incremental steps are to keep progressing.
 - xii. This recommendation has far-reaching impacts and needs to get extensive buy in.
 1. Upper management, self-supporting entities through auxiliaries, deans of academic colleges now impacted by energy costs directly in their budget, key faculty impacted by the college budgetary impacts, facility liaisons, system-wide capital programs, students (there could be an impact on tuition and fees), and taxpayer/legislative entities.
 - xiii. iWG recommends committing to figuring out what it is going to take to develop this plan not necessarily resolving all the logistics and details of the plan at this time.
 - xiv. Can we hire a consultant to help develop the plan, and provide an estimate of how much it would cost to develop the plan? It will likely cost more than a million dollars. xv. Sandy - AEI would be a good group as a retainer to estimate what the cost and scope might be.
 1. They did a financial analysis for the impacts of solar farm 2.0 and Utilities Master Plan (which cost \$1,249,902.79 in 2010)
 - xvi. Developing a carbon neutrality master plan would likely be around a \$1.5 million investment, which would have to go to the Board of Trustees for approval.
 - xvii. The iWG supports bringing this recommendation to the Sub-Council
 1. May need the Council to make a decision/request quick action given the urgent need of this plan to serve as a clear guideline for the realization of our carbon neutrality goal as soon as possible
4. Overview of vision for iCAP Teams this academic year (Meredith)

- a. We would like to see enhanced interaction about the iCAP between iWG, iCAP Teams, and campus community.
- b. We will encourage small-scale recommendations from iCAP teams to get sent to more campus units/groups.
- c. We are hoping for active participation at Campus Sustainability Celebration; save the date for the afternoon of Wednesday, October 20, 2021.
- d. We would like to see greater connectivity with other campus groups, including Student Affairs, SSLC, SSC, ISG, etc.