**SWATeam Recommendation**

Name of SWATeam: Energy SWATeam

SWATeam Chair: Andrew Stumpf and Bill Rose Date Submitted to iWG: April 3, 2020

**Specific Actions/Policy Recommended (a few sentences):** We recommend that F&S commission an Energy Master Plan for the U of I campus that contains at least 4 scenarios under which the campus meets the iCAP goal of 0 GHG by 2050.

**Rationale for Recommendation (a few sentences):** The campus currently has two Energy planning documents. In the 2015 Utilities Production and Distribution Master Plan, none of the scenarios lead to the iCAP goal being met. Indeed, under all of the scenarios, GHG production is shown to increase. There is an Energy Master Plan that has been produced by F&S but has not as yet been released; the Energy SWATeam has received no indication that this EMP shows how the iCAP goal is to be met. There is currently no university planning document which charts a roadmap for meeting the iCAP goal

**Connection to iCAP Goals (a few sentences):** In an institution such as the U of I, meeting a goal requires planning and budget. The aim of this recommendation is to ensure that the U of I has a planning document to ensure the iCAP goal will be met.

**Perceived Challenges (a few sentences):** This recommendation will ensure that the administration comes face to face with the difficulties in meeting the challenges to which it has committed.

**Suggested unit/department to address implementation:** F&S

**Anticipated level of budget and/or policy impact (low, medium, high):** High. Comparable in cost to the 2015 Utilities Production and Distribution Master Plan

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

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| Team Member Name | Team Member’s Comments |
| Andrew Stumpf | The development of this planning document is essential for developing a long-term plan to meet the iCAP 2050 GHG goals. Without a coordinated plan integrating energy production, utilities distribution, and campus planning and sustainability it will be difficult to efficiently and proactively develop an integrated campus-wide energy system, including facilities beyond the main energy system and ancillary buildings. |
| Bill Rose | This work has my high recommendation. It provides a roadmap to guide prioritization of energy efforts. It also permits the campus to face what will be the eventual price tag to meet the 0 GHG goal. |
| Tugce Baser | Unavailable for comment |
| Yun Kyu Yi | This crucial action needs attention from university leaders. I strongly recommend developing sophisticated energy master plans that will be able to find the best strategies to reach the iCAP goal by looking into various options with a limited budget. I fully support the recommendation. |
| David Boehm | A planning document is needed to achieve coordination with other university priorities and have a clear path to achieve iCAP goals. |
| Karl Helmink | Much more funding is obviously needed to achieve the campus energy goals. More coordination with projects and deferred maintenance is needed. In my opinion there are several ways to approach this issue. A more extensive planning document would be helpful, but it will be expensive, and needs to achieve coordination with other university priorities. I agree that the energy item needs a bit more focus by the upper levels of the administration. |
| Mike Larson | Of the 4 recommendations that the Energy SWATeam is proposing at this time, this recommendation is #3 from my perspective. That being said the likely cost of this study ($1 million or more), make it difficult to fully endorse at this time because those dollars could be spent on activities now that will result in energy savings (Retro-Commissioning and Building Envelope). |
| Tim Mies | I support this recommendation to allow for a better evaluation of the options currently considered and a road map forward that would allow for the success of the iCAP objectives. |
| David Rivera-Kohr | Reaching carbon neutrality is a tall task and multiple solutions will be required to achieve it. Determining the most appropriate renewable energy technologies/ energy conservation methods and creating a timeline to implement them is the most reasonable course of action to make this goal a reality. I support this recommendation. |
| Marcela Vega | I think it is crucial to have a well developed plan as a guideline to determine which are the next steps to meet the iCAP goals. Particularly, if this plan can combine inputs from different, relevant, decision makers from the University. |
| Jayce Carlson | (#4) I support and agree that this is a very important recommendation, however with cost and other recommendations in mind it is not at the top of my list. I believe the high price may be potentially used better in other places, but if money was not a large factor this would be at the top for sure. |

Comments from Consultation Group (if any; these can be anonymous):

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

Below is draft Objective 2 for the Energy SWATeam for the 2020 iCAP Report:

**Objective 2: By 2025, commission a comprehensive planning document for meeting the iCAP target of zero GHG emissions.**

Commission an Energy Master Plan

Commission a comprehensive planning document (Energy Master Plan) that describes and quantifies the current state of energy supply and demand on campus, evaluates changes in energy supply and changes in energy demand, and provides options, together with costs and schedules, for meeting the iCAP target of zero GHG emissions.

The current project-by-project approach will become less effective as we move forward towards 2050. A comprehensive planning document is the best mechanism for quantifying the feasibility and level-of-effort (costs) associated with the “iCAP net-zero by 2050” target and will document a clear and realistic path forward from the current supply/demand to 2050. This planning document will provide a one-stop-shop for clear, well-organized, transparent, baseline statistics (i.e., meter-by-meter power consumption, short-term and long-term trends) that are readily available to all stakeholders. It will also include comprehensive and realistic estimates for future energy supplies from solar, geothermal, and other renewables based on the actual climatic and environmental conditions on campus. By performing comprehensive feasibility assessments for several potential renewable sources at the same time, the document can propose the most efficient plan to achieve our 2050 goals (i.e., land allocation, balance of energy storage/production, daily/seasonal peak attenuation, etc.) and avoid repeating efforts over the next several decades as working groups and iCAP SWATeams change. Campus can refer to the baseline metrics to gauge our performance over the next 30 years, and then make adjustments as needed. The document will also serve as a financial plan, because the staged energy infrastructure improvements will include cost estimates allocated for design, permitting, construction, and operations/maintenance for each proposed project. University administrators can earmark funds now for projects that will be completed 1, 5, 10, or 20 years in the future, in order to stay on track to meet our iCAP net-zero by 2050 effort. An outside engineering or energy systems consultant is best qualified to author this comprehensive planning document, with the Energy SWATeam included as a resource for information and advisory.