

iCAP Team Recommendation

Name of iCAP Team: Energy

iCAP Team chair(s): Aman Mehta (Chair), Martha Kubakh

Date submitted to iWG: 12/1/22

Recommendation title: Priority Technologies and Practices for A Clean Energy Plan

For internal use only: Date reviewed by iCAP Working Group:

Specific actions/policy recommendation:

The Energy iCAP Team recommends that F&S and any external consulting group consider the feasibility and overall effectiveness of the following technologies and practices in the development of a clean energy plan for the University of Illinois, Urbana-Champaign:

- Energy Conservation & Energy Efficiency
- Micro-nuclear energy
- Geothermal Energy
- Hydrogen Fuel
- Energy Efficiency Renovations
- Expansion of solar energy production
- Wind energy
- Carbon capture and sequestration
- Power Purchasing Agreements

Suggested unit/department to address implementation:

Facilities & Services

Rationale for recommendation:

Developing a clean energy plan that extends 30 years in the future means that we cannot rely solely on the clean energy generation methods that are currently established and feasible. By studying the feasibility of technologies such as micro-nuclear, geothermal, and hydrogen energy production, the University of Illinois can implement a clean energy plan that is forward thinking and puts the university on the cutting edge of clean energy development. Additionally, implementing efforts to reduce energy demand and improve the efficiency of energy use will increase the feasibility of new clean energy technologies being implemented on campus. Energy Conservation and Energy Efficiency are on the top of our recommended list of practices for implementation in a clean energy plan to highlight the critical importance they will play in achieving campus clean energy goals.

Connection to iCAP goals:

Objective 2.1: By FY24, develop a comprehensive energy planning document that includes a detailed strategy for meeting the FY50 net-zero greenhouse gas (GHG) emissions goal.

Perceived challenges:

- The current development status of these technologies may make cost forecasting into the future difficult as technology continues to evolve.

Anticipated timeline of implementation:

Evaluation of the long-term feasibility and cost-effectiveness of the aforementioned technologies and practices must begin as soon as possible in order to have a clean energy plan ready by FY24

Anticipated budget (identify if cost is up-front or continuous):

Evaluation of the aforementioned practices and technologies should be included in any contract with an outside consultant assisting the University of Illinois in developing a clean energy plan.

Individual comments are required from each iCAP Team member (one or two sentences):

Team Member Name	Team Member's Comments
Andrew Stumpf	Support this recommendation. Together with the existing and submitted recommendations on energy planning this will move campus to address this issue sooner than later. I am sure our list of possible technologies will grow as we engage more with faculty, staff, and students and our colleagues off campus.
Shannon Anderson	I support this recommendation in conjunction with the Clean Energy Plan Conference recommendation. Identifying which technologies are potential solutions at the university level will require expertise within and outside the university. It is simpler to consider existing and planned projects as part of a Clean Energy Plan, but more difficult to think about what potential venues should be seriously considered in the future.
Tim Mies	Support this recommendation with the addition of anaerobic digestors and biomass to be considered. Please note redundancy in bullet 1 and 5 unless there is a distinction that needs to be explained more fully.
Paul Foote	I support this recommendation 100%. Achieving UIUC carbon neutrality and GHG reduction goals will require a blend of generation technologies suitable for our geological region and resources. Identifying an efficient mix will take collaboration, innovation and strategic planning.
Aman Mehta	I 100% support this recommendation. I believe that it is urgent for the campus to construct a clean energy plan if we desire to be net-zero by 2050. It is absolutely necessary to determine the suitable technology to reach the target in the most efficient way possible.
Tyler Swanson	I support this recommendation. Each of these technologies warrants a thorough review to determine its effectiveness in the future. The University of Illinois must make use of cutting edge technologies when developing a plan that stretches 30 years into the future.
Yun Kyu Yi	I support the recommendation. It will be great if this recommendation can be supported or helped by "Establishment of a Clean Energy Plan Conference Committee recommendation.
Damon McFall	Support this recommendation 100%. Study should also include reviewing mediums of energy transfer (refrigeration, low temp hot water, electricity, etc.), if solution is multi-building approach, understanding that any

	conversion generates waste and inefficiencies. The study should not arbitrarily abandon natural gas if it proves to be of benefit from a carbon holistic approach than other fuels. The study should also include a review of campus power suppliers and their operational goals for the next 30 years and compliment their plans if possible. The study should endeavor to provide a multi-modal approach that is the best cost scenario for the University and taxpayers.
Martha Kubach	I 100% support this recommendation. The University should attempt to get an opinion from a consulting group as soon as possible to reach our energy goals. As of now, the university needs to focus largely on energy conservation and efficiency to drive our energy consumption as low as possible.
Roman Makhnenko	I am not sure that external consulting group needs to review all of this options. F&S has already a good idea on a number of items in this list.

Further explanation and background (can be supplied in an attachment):

Comments from consultation group (if any; these can be anonymous):