

UMaine Faculty Senate Motion to Support a Vision of a Zero Carbon Campus

The following motion was unanimously supported by members of the Faculty Senate on May 3, 2023 and subsequently supported by the University of Maine Administration as written and documented below.

Motion to Support the Vision of a Zero Carbon Campus

WHEREAS the representatives from the Faculty Senate, the University of Maine Office of Sustainability, the student body, and the Administration have developed the Zero Carbon Campus Vision below,

WE HEREBY MOVE that the Faculty Senate:

Support the Vision as guidance for decision making to achieve zero carbon emissions for the University of Maine campus.

Call on the Administration to collaborate with the Environment Committee of the Faculty Senate in developing a framework to execute the Vision and a process for monitoring progress toward a zero carbon campus,

Commit to collaborating with the Administration in these regards, and

Encourage student groups, faculty groups, staff and administration to support and work to enact the Vision.

Vision of a Zero Carbon Campus

University of Maine
May 1, 2023

Background

The challenge of achieving a zero carbon future *is* beyond the technology, policy, and implementation options available today. We need a clear and succinct vision of our future campus.

Over the course of the last year the Faculty Senate has conducted an open campus-wide process to build a consensus vision of long-term campus sustainability and a zero carbon future. Meetings with students, administration, faculty, and staff and a campus-wide survey were definitive: the campus community wants a safe climate future, and expects the University of Maine to lead with a strong commitment to building a zero carbon, sustainable campus.

The University of Maine has made a generational commitment to achieving net zero carbon emissions by 2040. Our commitment is in common spirit with the United Nations' commitment to preventing dangerous climate change, the United States' prioritization of clean energy and climate action, and the State of Maine's commitment to reducing carbon emissions.

In support of this generational commitment, and following the values our campus community has expressed, we propose the following shared vision for a zero-carbon future for the University of Maine campus. The vision includes values, goals and implementation steps.

Vision

The endpoint for which we strive.

- Electrify and decarbonize all campus operations
- Move to non-fossil heat and energy on campus
- Transition to a zero carbon campus
- Embed sustainability in campus culture and practices

Goals

Tangible parts of the vision.

- Achieve net-zero carbon emissions for campus heating and power by 2030.
- Achieve net-zero carbon emissions for all uses of energy on campus by 2040.
- Achieve zero travel-related carbon emissions for faculty, staff and students by 2045.
- Achieve a negative carbon footprint for campus by 2050.

Implementation

Concrete action priorities.

- Electrify and decarbonize
 - Require all new buildings to be carbon neutral in construction and operation. This includes (i) using non-fossil clean renewable energy sources for all primary heating and power, and (ii) offsetting the carbon emissions for building materials and construction activities through carbon capture or carbon offsets.
 - Develop and implement a rolling plan to update and electrify all existing major campus buildings to support the 2040 vision and goal.
- Transition campus infrastructure
 - Bridge the gap by investing in existing UMaine infrastructure to meet campus heating and energy needs until the effort to decarbonize and electrify is complete.
 - Build the last combustion plant that UMaine will ever have: an addition to the Central Steam Plant that will enable the clean burning of 100% renewable biofuels by 2030.
 - Upgrade and expand campus electrical infrastructure to handle the future loads caused by widespread campus electrification.
- Create a zero-carbon campus
 - Require all new building and infrastructure projects to be built to a zero carbon impact standard (e.g. [ILFI Zero Carbon Certification Standard](#)).
 - Transition the university fleet to electric vehicles by 2040.
 - Ameliorate any remaining unavoidable greenhouse gas emissions through carbon capture, sequestering, offsets, or a combination of such methods as new technologies become available.
- Embed sustainability in campus practice and culture
 - Design and implement a comprehensive framework for operational decision making to achieve carbon reductions in all campus actions including purchasing guidelines, development strategies, construction requirements, service agreements and similar campus decision making domains.
 - Expand engagement with the entire UMaine community in the effort through research,

education, and campus practices to reduce emissions, build sustainable clean energy capacity, promote economic stability, and enable a strong and expansive future for the University.

- o Lead by example in participatory achievement of a zero or negative carbon footprint for the campus by 2050. Among achievements that might be pursued include (a) taking advantage of current and emerging methods for capturing and sequestering carbon emissions, (b) advancing research and development to achieve breakthrough non-fossil clean energy technologies and/or (c) building solar and/or wind energy generation infrastructure as opportunities arise in order to create non-fossil clean renewable energy capacity for campus growth and expansion. The campus community might suggest and pursue many more related or alternative efforts.
- o Encourage and expand engagement with other UMS campuses in pursuing similar achievements.

A Moonshot Approach

To achieve our vision, we must embrace a campus moonshot.

According to the latest IPCC Report, if the global community hopes to avoid catastrophic impacts and keep global warming under the 1.5 degrees Celsius goal, the world must roughly halve its emissions in the next eight years ([IPCC](#)).

Achieving a sustainable and zero carbon future for the planet is, with certainty, the greatest human effort ever undertaken, greater even than the effort to put humans on the moon. The University of Maine should aspire to do far more than the actions suggested above.

We need a moonshot. and Maine should not be left out of a sustainable or livable future. Therefore, we encourage the campus administration to embrace the need for a campus moonshot.

- A moonshot mentality places all of our best ideas and resources on the line to achieve a livable vision of the future. We encourage the administration to embrace a moonshot mentality, and to plan a moonshot effort for a sustainable zero carbon future that benefits all aspects of campus operations and life. It would include:
 - o Supporting institutional innovation within UMaine between staff, students, faculty and administration.
 - o Growing a flexible and entrepreneurial spirit to develop novel solutions: “Fail Fast, Fail Cheap!”
 - o Maintain a rapid cadence by iterating on actionable short-term projects every 3 years.
 - o Create an incentive structure for moonshots including competitive internal grant programs to incentivize faculty experts and teams to reduce campus carbon emissions and streamline energy use.
- A moonshot agenda would direct:
 - o Campus construction projects
 - o Campus electricity and heating
 - o Campus operations and maintenance
 - o Campus budget process
 - o Faculty hiring and research priorities
 - o Qualified staff hiring
 - o Teaching and curriculum innovation

- Example moonshot ideas would integrate campus operations, energy production, carbon sequestration, research, innovation, entrepreneurship, teaching and community engagement. Some ideas suggested to date include:
 - o Build a zero carbon energy production, storage and research facility on campus. For example, invest in a combination of solar power generation with aquifer thermal energy storage (ATES). Hire research and engineering faculty. Hire operations and maintenance staff. Develop spin off businesses, and produce clean energy for campus and beyond.
 - o Build a carbon sequestration and storage research and testing facility, such as a BECCS system (bio-energy carbon capture and storage), or a DAC (direct air capture) system. Hire research and engineering faculty. Hire operations and maintenance staff. Develop spin off businesses, and sequester carbon for campus and beyond.
 - o Work with the State of Maine to position the University of Maine as an incubator for zero carbon energy technologies and solutions. Run internally-funded research competitions for specific campus solutions. Hire research faculty and staff. Develop spin off businesses, and implement them on campus and beyond.
 - o Partner with local town governments to expand renewable energy use and find production and consumption efficiencies.
 - o Fully transition the campus to electrically-driven heating and cooling without combustion, such as via ground-source heat.

Action by the University of Maine Office of the President

After review of the motion by UMaine Executive Vice President for Academic Affairs and Provost John Volin, following is the response by UMaine President Joan Ferrini-Mundy in a letter to Amanda Klemmer, President of the Faculty Senate, dated September 29, 2023 regarding the Faculty Senate Motion passed on May 3, 2023:

Regarding a Motion to Support the Vision of a Zero Carbon Campus

I support this motion as written. The vision of a Zero Carbon Campus is one that is supported by our Strategic Vision & Values Framework and highlighted as an action item as part of the UMaine Compass, where UMaine should and can "distinguish itself as the Green Action University." Provost Volin, Vice President Sparks, and myself look forward to collaborating with the Faculty Senate Environment Committee in executing the vision of the Zero Carbon Campus initiative.