Report to Faculty Senate on UMaine Campus Zero Carbon Emissions Commitment

Spring 2021

UMaine Faculty Senate Email to President Ferrini-Mundy

Dear President Ferrini-Mundy,

The executive committee of the faculty senate has suggested that you be provided with some context and background on an issue to be raised in a future FacultySenate meeting. In short, the Faculty Senate is likely to ask the administration to report on the extent of progress by the campus to date in achieving its zero carbon emissions commitment by 2040. The desire is to have ideally both a written and oral progress report presented to the Senate near the beginning of the Spring Semester.

In 2007 the University of Maine made a national announcement and commitment to be carbon neutral by 2040. On the ten year anniversary of that commitment,the Faculty Senate passed the attached motion. This motion references several earlier actions and documents.

Among the questions that are now arising that the Senate members are likely to want to see addressed in a report are those contained below in the Appendix.

After you review the attached material, it may be appropriate to discuss with the Faculty Senate executive committee a mutually agreeable path forward in preparing an update and any recommendations.

Best regards,

Harlan Onsrud

Faculty Senate Executive Committee Member

UMaine Faculty Senate Motions

- 2015: THEREFORE, BE IT RESOLVED that the University of Maine Faculty Senate, in support of Divest UMaine, calls upon the University of Maine Board of Trustees to stop any new investment in fossil fuel companies and to set a goal of full divestment within 5 years

- 2017: Be it hereby resolved that the Faculty of the University of Maine as represented by the Faculty Senate strongly support any campus power and heating infrastructure investments that will assist the campus in achieving net zero carbon emissions by 2040.

1. Starting from the time that the last motion was passed in 2017 (see previous slide), have any substantial changes and upgrades to the campus power and heating systems been planned or accomplished? If yes, what are they and are they moving us closer to the goal of realistically achieving zero carbon emissions by 2040? Have any opportunities been lost for achieving the goal of carbon footprint elimination as opposed to just reducing the footprint?

- University of Maine Energy Project (UMEP) supply-side energy initiative - in negotiations with Honeywell to move into the conceptual design stage
- The UMEP project may include:
  - Demand-side energy projects to be considered as an integral part of the UMEP
  - Electrical infrastructure study & improvements forthcoming in association with UMEP
  - District steam system study & improvements forthcoming in association with UMEP

2. In terms of new building construction projects on campus since 2017, are those projects increasing or decreasing the carbon emissions of the campus? By how much?

- Machine Tool Lab - 12,816 sq.ft. of old construction
  - Replaced by the North Engineering Annex building - 4,200 sq.ft. of modern construction
  - Overall footprint reduction of 8,616 sq.ft.
- EEDC ~110,000 sq. ft. building - currently planning for LEED Certification
- At this point, GHG emissions from each building can only be estimated
  - Individual building energy meters will ultimately be used to calculate the building's energy use and associated GHG emissions

3. In terms of proposed future building construction projects on campus, are such projects likely to increase or decrease the carbon emissions of the campus? By how much? If an increase, what is the extent of investment in wind, solar, or other renewable energy resources that would be needed to offset any increased carbon emissions?

- Maine Climate Council recommendations: net-zero carbon emissions for new construction in Maine by 2035 & “Lead by Example” in Publicly Funded Buildings - UMaine will strive to meet these goals
- Life Sciences Building (conceptually designed for Net Zero Carbon during construction & Net Zero Energy during operation)
- Carbon offsets - a one-time purchase will be necessary to achieve Net Zero Carbon during construction standard for each new building (~$3 to $15 per metric ton)
- Offsets cannot be estimated until building energy consumption is known

4. Are buildings or other facilities being closed or taken offline that can offset increases in carbon caused by construction of new facilities? What are they and what are the estimates of the offsets?

- The University always looks for opportunities to take old buildings offline - estimates of avoided energy use (and associated GHG emissions) will be calculated as buildings are taken offline.

5. What is the extent of investment in wind, solar, or other renewable energy resources that will allow the campus to meet its zero carbon emissions commitment by 2040? What is the nature of the financial plan that is being pursued or should be pursued in order to achieve the long standing commitment?

- Each potential design option has cost implications related to capital construction & ongoing fuel-supply costs - the University is in the process of this analysis as it develops the UMEP
- UMEP Phase 2 (conceptual & schematic design) will determine the best path forward for our central energy infrastructure, taking into account capital construction costs and debt service payback over time
- Currently, UMaine has accomplished a 20-year Net Energy Billing Renewable Electricity Commitment of ~27,000,000 kWh per year of our total 42,000,000 kWh per year total
- Assuming a carbon offset price of ~$5, UMaine can be 100% carbon neutral for ~$300,000 per year

6. What other issues are being addressed or approaches are being followed to eliminate the carbon footprint of the campus?

- UMEP, demand-side improvements, and Net Energy Billing Renewable Electricity Commitment (i.e. Scope 1 & 2 emissions)
- Plans for Scope 3 emissions (i.e. commuting and university-related travel) to be discussed
- America East Conference Sustainability Administrators - Sustainable UMaine Athletics

7. What actions do you suggest for faculty and students working with the administration that might better help the campus in achieving its commitment?

- Support UMaine's Carbon Commitment
- Support carbon offsets as a temporary measure to achieve Carbon Commitment goals
- Support the procurement and use of renewable energy to meet the campus' thermal and electrical needs
- Support necessary capital investments needed to build efficient infrastructure to reduce campus energy use
- Serve on the President's Sustainability Council
- Be aware of campus energy use and conserve energy (e.g. turn off lights, unplug unnecessary appliances, conserve water, put on a sweater, etc…)
- Turn down the heat in unoccupied campus spaces