

Energy Framework, Version 2
College of the Atlantic
Campus Committee for Sustainability
For Vote at ACM, WI-17 Week 3
January 18th, 2017
(PASSED 52-0-6)

Preamble

Given that the use of fossil fuels is changing the climate and that the current rate of energy consumption by individuals, the campus, and global community is unsustainable, College of the Atlantic will meet its energy needs by using local and renewable energy sources. This will enable the college to become a fossil fuel free campus by 2030. This goal will be achieved both by reducing our overall energy consumption and by using fossil fuel free sources of energy.

The college strives to make COA a laboratory for students, faculty, and staff to explore the diverse prospects of a more sustainable energy future. A central part of the energy plan will include classes and project-based learning where students can practice the interdisciplinary skills needed to promote responsible energy use. Students will be involved in designing, constructing, maintaining, and monitoring all necessary changes on the campus, including its islands and farms. The college will be a place where energy production is an attractive and healthy part of the landscape, enhancing the quality of our lives, education, community, and environment.

These experiences, along with the college's interdisciplinary curriculum in human ecology, will prepare students to become advocates for the ecological integrity of the climate and planet and give them tools to influence change in their chosen professions and communities.

As the college moves toward a fossil fuel free campus by 2030, it is faced with the challenge of improving the energy efficiency of older buildings before trying to retrofit them with renewable heating systems. Improving the energy efficiency of buildings typically includes adding insulation, plugging leaks, and, where cost effective, as in the renovation of Turrets, installing energy-efficient windows and doors.

The technologies already exist to replace fossil fuel heating systems with renewable sources of heat. The challenge will be selecting, designing, and financing renewable heating systems to meet the needs of the wide variety of buildings on campus, a challenge that will provide opportunities for student involvement throughout the entire process.

More easily accomplished will be increasing the amount of solar electricity generated on campus. Actions taken to transition buildings to renewable heating sources and the continued sourcing of electricity from large wind farms while increasing on-campus solar PV will reduce the college's carbon footprint, but not eliminate it. The college can transition its fossil fuel vehicle fleet over time to alternatives such as more capable electric vehicles. However, COA will continue to rely on air travel to provide academic opportunities around the world for its students.

Teaching and learning about energy occurs in several classes at COA. Other courses, while not focused on energy, provide additional skills and background for students wishing to be effective advocates for renewable energy.

Targets and Actions

1. Reduce Fossil Fuel Use.

- (a) By 2020, COA's research stations on Great Duck Island and Mount Desert Rock will be fossil fuel free to the greatest extent possible.
- (b) By 2020, Beech Hill and Peggy Rockefeller Farms will be fossil fuel free to the greatest extent possible.
- (c) By 2025, 50% of all campus buildings' primary heating sources will be fossil fuel free.
- (d) By 2030, all remaining campus buildings' primary heating sources will be fossil fuel free.
- (e) By 2030, achieve a 20% reduction from fuel emissions by 2030 for COA's collective road vehicle fleet based on 2017 baseline data. Maintain the 20% reduction even if the fleet expands.
- (f) By 2030, achieve at least 20% biodiesel usage for all COA diesel vehicles, including trucks and boats.
- (g) In 2030, the College will conduct a full evaluation of its progress towards the goals set out in this Framework and develop a plan based on most current

technologies, policies, and financial considerations to address any remaining fossil usage from on-campus energy consumption.¹

2. **Reduce Total Energy Consumption.** Through a combination of energy efficiency and efforts to decrease individual energy consumption, total energy consumed on campus will be reduced.

- (a) By 2020, reduce total on-campus energy consumption by 10 percent.

- (b) By 2030, reduce total on-campus energy consumption by 20 percent.

3. **Generate Electricity.**

- (a) By 2020, COA will generate on campus at least 15 percent of all the electricity used on campus.

- (b) For all electricity not generated on campus, COA will purchase Renewable Energy Certificates (RECs) ensuring that its electricity comes from sources that do not actively emit carbon dioxide.

4. **Address Greenhouse Gas Emissions.**

- (a) By 2020, over 50 percent of COA's total on-campus energy consumption will be generated from fossil fuel free sources.

- (b) By 2030, all on-campus energy consumption from fossil fuels will be carbon neutral through offsetting remaining carbon emissions by supporting, funding, and/or purchasing carbon credits from local renewable energy and energy efficiency projects.

¹ "On-campus energy consumption" is defined as energy consumed by all activities taking place on the COA main campus, farms, research stations, and all other COA-owned properties. This includes energy consumed by the COA-owned vehicle fleet, but excludes transportation to and from these locations by personal vehicle, boat and/or airplane. This does not include "embodied energy" related to the production and transportation of food or other materials used/consumed by on-campus activities, as these energy costs are addressed by other College policies and initiatives.

(d) For all College-sponsored air travel (i.e., COA has paid for the plane ticket), COA will offset the carbon released by purchasing carbon credits from renewable energy and energy efficiency projects.

5. Educate. Opportunities to learn about energy and participate in projects will be made available to students of all genders, nationalities, and academic interests. Classes and student projects will build on themselves. Data from previous projects will be analyzed, current projects will be implemented, and future projects will be planned. These educational activities will help COA attain the goals laid out in this document.

(a) Each year, between 15 to 20 percent of COA's graduating class will have taken a course in energy and/or participated in a term-long project in renewable energy or energy efficiency.

(b) Each academic year offer one introductory energy class and one intermediate, project-based energy class. Provide support for and encourage independent studies, group projects, and senior projects in energy and efficiency.

6. Experiment. Take advantage of COA's small size and flexible curriculum to conduct experiments and explore different approaches to energy and efficiency as part of teaching, research, and community engagement efforts.

7. Monitor. Expand the quantity and quality of energy data available, make this data easily accessible, and use this information to inform continuing energy work at COA.

(a) By 2020, set up real-time monitoring of electrical and heating systems for all academic and residential buildings on campus.

(b) Establish and maintain an archive of COA energy data and energy projects, open and easily accessible to all COA community members.

(c) Create an Annex to this Energy Framework to monitor and assess progress towards the goals laid out in this Energy Framework in relation to baseline data.²

² Baseline data used to calculate progress towards the Energy Framework will be consumption levels averaged over a period of three years: 2010-11, 2011-12, and 2012-13.

8. **Report.** The Director of Energy Education and Management (or equivalent staff member) will report once a year to ACM on the progress made toward the targets laid out in this document.
9. **Revise.** The Campus Committee for Sustainability will review these targets at least every five years and will bring any changes to the ACM. CCS and the Director of Energy Education and Management, in collaboration with other administrators and campus bodies, including the Administrative Dean and the Campus Planning and Building Committee, will expand upon this framework to produce an action plan by Spring 2017, further detailing how various reductions will be achieved.
10. **Fund and Finance.** Funding for these initiatives will require approval of the President and Administrative Dean, who will balance the goals laid out here with other needs of the College in consultation with the Director of Energy Education and Management, as well as other students, faculty, and staff as appropriate. Where possible, seek grants and third-party funding to help finance renewable energy and energy efficiency projects.