

**Report to the Faculty Senate
Faculty Ad Hoc Committee on Environmental Sustainability
February 14, 2022**

Members:

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1. Introduction

1.1. Purpose of Report and Key Definitions

The Ad Hoc Faculty Committee on Environmental Sustainability was created in Spring 2021 in response to a Faculty Senate recommendation on fossil fuel divestment. The Faculty Senate leadership gave the ad hoc committee three main charges:

- To inventory the full array of relationships between the University and the fossil fuel industry, and to consider how fossil fuel divestment might affect these relationships;
- To give members of the Faculty Senate a general overview of environmental sustainability initiatives, and faculty participation in such initiatives, at the University of South Carolina;
- To present recommendations to the Faculty Senate relating to sustainability at UofSC.

We have not been charged with assessing the University's carbon footprint or making actionable recommendations for reducing carbon emissions or other environmental impacts. We will, however, explain how individuals involved in sustainability initiatives on campus view these issues.

We begin our report by affirming that the burning of fossil fuels and the accumulation of carbon in the atmosphere is a major problem globally and locally. We also recognize that atmospheric carbon is but one of many environmental problems facing our communities, including water,

soil and air pollution, habitat loss, and the overuse of natural resources. We believe that the University, as a public institution, has an important role in educating students and the community about environmental sustainability and in devising practical measures to enhance sustainability within and beyond campus.

For the purposes of this report, ‘environmental sustainability’ refers to an institutional commitment to conserve natural resources, to protect local and global ecosystems, to reduce carbon emissions, and to mitigate or eliminate harms to air, water, and land. To be ‘environmentally sustainable’ means to act responsibly in our interactions with the natural world and to ensure that future generations have access to healthy ecosystems and the resources these ecosystems provide. In actionable terms, environmental sustainability can involve:

- promoting energy and water efficiency
- encouraging the use of renewable energy and reducing the use of fossil fuels
- reducing or eliminating the use of toxins and chemical pollutants
- reducing waste and removing recyclable goods from the waste stream
- promoting practices that nourish and enhance the natural environment (for instance, composting, no-till agriculture, and wetland restoration)
- creating and re-working the built environment to conserve land, to minimize energy use, and to protect waterways.

1.2 Information Sources

This report is based on the following sources of information:

- the minutes of the ad hoc committee convened by the Board of Trustees of the University Educational Foundation in response to the Faculty Senate’s fossil fuel divestment resolutions, and direct observation of two of these meetings (November 30, 2021 and January 28, 2022) by members of our committee;
- publicly available information about university curricula, corporate recruitment on campus, research funding, and past and current sustainability initiatives;
- semi-structured interviews (12 total) with faculty, staff, and students actively involved in sustainability issues on campus;¹
- informal interviews with Associate Vice President of Facilities Services, Jim Demarest, and Assistant Director of Energy Management, Troy Nelson;
- a survey of department chairs about department-level sustainability practices (n = 23).

¹ All of our interviewees gave us permission to use their names in this report, but we have opted not to link particular comments to particular individuals. We only identify three of our interviewees by name in this report.

This report proceeds as follows:

- An overview of the University's relationships with the fossil fuel industry (and with the energy sector more generally);
- An overview of initiatives and activities on campus relating to sustainability;
- A discussion of the limitations of current sustainability initiatives;
- Recommendations on how the Faculty Senate can support moves toward institutional sustainability;
- Appendices containing our interview template, survey questions and results, and the membership of the President's Council on Sustainability.

2. Fossil Fuel Connections

Our committee was charged by the Faculty Senate with assessing the full array of the University's relationships with the fossil fuel industry with an eye to the potential effects of fossil fuel divestment on those relationships. We begin by focusing on the potential impacts of divestment on Educational Foundation investments, and we summarize on-going discussions between the Foundation board and various campus stakeholders about the feasibility and value of divestment. We then look beyond Foundation investments, describing the University's connections and interactions with the fossil fuel industry through faculty research and on-campus employer recruitment.

2.1. University Educational Foundation Fossil Fuel Exposure

The Faculty Senate resolution on fossil fuel divestment focuses exclusively on the Educational Foundation investment portfolio (the Educational Foundation is one of five University Foundations). The resolution recommends that the Foundation's board of directors divest from all stocks and other investments relating to the fossil fuel industry, which would include oil majors, like ExxonMobil and Chevron, and smaller firms involved the extraction and refining of petroleum, natural gas, and coal.

In response to the resolution, the Foundation board created an ad hoc committee to assess the feasibility of fossil fuel divestment and the impacts of divestment on Foundation operations. This committee has met four times since September 2021 and has provided our faculty committee with the minutes for all four meetings. The board has invited various stakeholders to these meetings. The October 12 meeting was attended by Interim President Harris Pastides and Interim Provost Stephen Cutler, and the November 30 meeting allowed representatives from UofSC student government to present their arguments for divestment (this meeting was

also attended by our committee member, Matt Souther). The January 28 meeting included representatives from the Faculty Senate, including Mark Cooper (former Faculty Senate President), Audrey Korsgaard (current Faculty Senate President), Matt Souther, and Caroline Nagel (faculty committee chair).

The following points summarize the Foundation's exposure to the fossil fuel sector:

- Allowing that exposure to particular stocks can change from day-to-day based on management decisions, the Foundations portfolio currently contains an estimated 4.1% direct exposure to energy-sector companies (or 4.8% if a broader measure of carbon exposure is used). Energy sector exposure in the Foundation's US-based equities is roughly 1%, mostly via the S&P Index Fund, which constitutes almost 20% of the entire equity portfolio. Energy-sector stocks constitute approximately 3% of the S&P Index (it should be noted here that 'energy' may include utilities, which can include non-fossil fuel assets).
- Mr. Stephen Hodson, investment consultant to the Foundations, noted that while there are replacement index funds available, they will be more expensive than S&P index funds, which are not actively managed, and are therefore very low-cost. The Foundation's current Investment Policy specifies that the portfolio should achieve the maximum return possible to create a multi-generational income stream that will allow the Foundation to support the University in perpetuity. The Investment Policy should be reviewed to ensure there is no conflicting language related to the Committee's decision (when made) related to fossil-fuel divestment.

The various stakeholders present at these meetings have offered different viewpoints with respect the significance of Foundation investments in the fossil fuel sector and potential pathways forward in light of faculty and student concerns about climate change.

- There is broad agreement among board members, reiterated in each meeting, that fossil-fuel exposure is very low. At the same time, Board members acknowledged that large institutional investors are increasingly factoring environmental concerns into investment decision-making. Mr. Hodson noted that over half of the 800 universities represented in the National Association of College and University Business Officers have formal Environmental, Social, and Governance (ESG) statements in their investment policies. Board members also discussed pressure on publicly traded corporations to disclose environmental impacts and carbon emission data.²

² See, for instance, KPMG's 'Your Impact Solution' website: <https://www.kpmg.us/services/kpmg-impact.html>; for examples of university ESG statements, see <https://investments.georgetown.edu/socially-responsible-investing/>; <https://investment.brown.edu/esg-standards/integrating-esg>;

- In the October 12 meeting, President Pastides emphasized to the Foundation board the importance of having an open and honest line of communication with the Faculty and Student Senates on the issue of fossil fuel divestment, regardless of the ultimate decision. He emphasized that bringing attention to sustainability is a ‘positive step in the right direction for everyone’. President Pastides noted that ‘a measured and systematic approach of considering the replacement of certain investment holdings over time, and at a time that would not put portfolio returns at risk, may be best’. Interim Provost Cutler expressed hope that the Foundations will find a plan of action that will balance faculty and student input on ‘social benefits’ with the Foundation’s fiduciary responsibility to donors and the University.
- In the November 4 meeting, student government fossil-fuel divestment leaders Claire Windsor, Louis Rubino, and Morgiana McDevitt reiterated student support for divestment and specified that they are not seeking total divestment of all passive index funds (like the S&P index funds), but rather, divestment from direct investments in the fossil fuel industry via private equity funds. (The Board responded that it is difficult to liquidate these direct investments, but that these investments have a fixed term and will be winding down over the next few years).
- At the January 28 meeting, Faculty Senate representatives expressed faculty concerns motivating the divestment resolution and shared preliminary observations from the faculty committee’s research (outlined in full in this report). Faculty representatives presented different views on the value of divestment as a strategy to address atmospheric carbon emissions, acknowledging that there are cases to be made for and against divestment. They reiterated, though, that they share the goal of addressing climate change at an institutional level and of identifying the most effective and efficient ways of reducing the University’s environmental impacts. Former Faculty Senate President Mark Cooper re-stated the principle of shared governance, emphasizing that the divestment resolution passed with a clear majority, signifying widespread support among faculty for divestment (Board members clarified that the Foundation operates at a distance from the University to maintain its independence, and that shared governance therefore does not factor into their operations; however, the Foundation does seek to align itself with University values and the University’s mission, which can include environmental sustainability).

<https://sustainability.illinois.edu/u-of-i-investing-in-climate-solutions-from-the-ground-up/>;
<https://www.ucop.edu/investment-office/sustainable-investment/index.html>; and <https://www.usmf.org/wp-content/uploads/2020/08/ESG-USMF-Statement-FINAL.pdf>

The Foundation Board will continue to meet with different University stakeholders during the Spring semester to gather more information and to consider how, or whether, it will change its investment strategies in light of the divestment resolution.

The Faculty Senate will need to consider how it wishes to respond to the Foundation Board's analysis and eventual decision in light of conflicting perspectives on the efficacy of divestment measures. Current research suggests that institutional divestment does not have a sizable impact on firms' cost of capital, and that institutional investors may have more influence over the behavior of fossil fuel firms if they remain invested (as seen with recent shareholder action against ExxonMobil's board of directors).³ At a purely practical level, the University may have more impact on carbon emissions by taking measures on campus to reduce energy use, by promoting multimodal transport, by encouraging shifts to electric vehicles, and by creating new knowledge and technologies to hasten low- or no-carbon solutions. However, fossil fuel divestment has moral and political value, and it conveys a commitment on the part of the University to work toward sustainability goals. A growing number of large institutions are committing to fossil-fuel divestment, and collectively, the divestment actions of large institutional investors and public universities signal to fossil fuel companies that 'business-as-usual' is no longer acceptable. Given all of these considerations, and depending on the outcome of the Foundation's deliberations, the Faculty Senate may wish to consider other actions to support the original resolution. Or it may modify the original resolution to specify (for instance) that the Foundation desist from *future* investments in fossil-fuel extraction and refining. We discuss these options in our recommendations below.

2.2. Research Funding

Moving beyond Foundation investments, our committee has identified other points of interaction between the University and the fossil fuel industry (and the energy sector more broadly, though, again, 'energy' can include renewable and non-carbon emitting resources).

Fossil fuel and energy firms sponsor some research at the University. Specifically, between FY 2017 and FY 2021 (5 fiscal years), CAS, ASPH, and CEC collectively received over \$477 million in

³ There is no shortage of debate about the wisdom and effectiveness of fossil fuel divestment. Two recent articles in *Forbes* concisely outline the actual and potential impacts of divestment and the alternative strategy of engaging with fossil fuel companies:

<https://www.forbes.com/sites/davidcarlin/2021/02/20/the-case-for-fossil-fuel-divestment/?sh=4d8abee376d2> .

<https://www.forbes.com/sites/davidcarlin/2021/03/02/the-case-for-fossil-fuel-engagement/?sh=65f1d725d726>.

A recent report from Stanford University casts some doubt on the efficacy of divestment on the behavior of fossil fuel companies: <https://www.gsb.stanford.edu/faculty-research/working-papers/impact-impact-investing>

Another analysis that leans toward shareholder engagement is Broccardo, Hart, and Zingales (2020):

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3680815.

external awards. Approximately \$2.3 million (0.48%) of this total came from large and small companies that operate in the fossil fuel and/or energy sector. These funds were spread over 12 different projects on a range of topics, including:

- Energy efficiency
- Production of biomass
- Combustion of biomass
- Natural gas purification, including CO₂ capture/sequestration
- Hydrogen fuel cells

The above information refers only to *corporate* funding for research. As reported by the VPR at the Fall 2021 Provost retreat, in FY 2020, UofSC received a total of \$12.0M in funding from the Department of Energy, or 7.4% of the total federal awards to UofSC. DOE is a vast enterprise that includes offices focused on electricity, energy efficiency, renewable energy, nuclear energy, and environmental management. One DOE office of particular interest is the Office of Fossil Energy and Carbon Management. Formerly, this was just the Office of Fossil Energy, and it mostly promoted research on production and utilization of coal, oil, and gas. But it recently rebranded itself with the term 'Carbon Management', and the office appears to be re-orienting itself in response to climate-change concerns (though priorities can shift with changes in government).

2.3. Career Placement and Recruitment

The University Career Center hosts many corporate employers at career fairs during the academic year. The Career Center lists 91 companies identified with 'Oil and Gas Industry'. These include energy-sector majors and smaller firms oriented around fossil fuel or renewables. There are, in addition, firms listed under 'Utilities and Renewable Energy', including Duke Energy and Dominion Energy. The Career Center's main priority in working with recruiters is to create equitable access to employment opportunities with companies that adhere to legal and ethical standards in their hiring and work practices. The Center uses predetermined standards to vet companies and employment opportunities. At this time, sustainability principles are not among the standards set by the Career Center.

In response to our queries about corporate recruitment activities on campus, the University Career Center offered the following information:

- ExxonMobil attended the Virtual STEM Fair this fall. Marathon Petroleum Company LP participated in on-campus interviewing in Fall 2020 and was on DMSB's employer list for 2021.
- Chevron, PBF Energy, and ConocoPhillips designated DMSB as a top-tier (i.e. most preferred) recruiting ground in 2020.

- Koch Industries attended the STEM Fair in Spring 2020, and Wood attended the STEM Fair in Spring 2019, but neither has attended since those semesters.

In identifying these connections with the fossil-fuel and energy sectors, we emphasize that it is difficult to assess the sustainability bona fides of companies based solely on sector. An energy company may be aggressively expanding into renewables, while a non-energy company might be doing little to address its environmental impacts. Two UofSC recruiters, Pepsico and Nestle, for instance, have been implicated in the large-scale production of single-use plastics that pollute waterways and end up in landfills; likewise, Walmart, another campus recruiter, has been sued by a dozen district attorneys in California for dumping 80 tons of lithium batteries, insecticide, aerosol cans, cleaning supplies, electronic waste, and paint in landfills throughout the state for the past five years.⁴ We address this point in our recommendations below.

3. Overview of Environmental Sustainability Initiatives and Activities at UofSC

The University created an Environmental Policy Statement (UNIV 5.50) in 2000, and revised this statement in 2016.⁵ This statement articulates several goals: to incorporate sustainability issues into the University curriculum; to increase student opportunities for integrative, beyond-the-classroom learning on sustainability issues; to encourage research that aids in understanding environmental issues and in finding solutions to sustainability challenges; and to foster sustainable thinking within the larger community. It also states that the University should serve as an ‘example in operational sustainability’ by conserving resources, reducing waste, using locally sourced products, and minimizing negative impacts of the University on the environment.

Evidence points to some progress being made toward these goals. As we explain further below, however, most efforts toward sustainability are being led by individual faculty/staff members, clubs, or departments around campus, rather than by the central Administration. We highlight some of the more prominent initiatives here:

3.1. UofSC Office of Sustainability

Many sustainability initiatives at UofSC emanate from the Office of Sustainability. This office has a director (Larry Cook), an assistant director (Grace Kazmierksi), and a budget for student-oriented environmental activities on campus. Larry Cook has been the director for approximately three years. The Office of Sustainability was previously part of Facilities

⁴ <https://www.latimes.com/business/story/2021-12-20/walmart-california-lawsuit-alleges-hazardous-waste-dumping-landfills>; <https://www.reuters.com/business/retail-consumer/pepsico-slash-plastic-use-sustainability-push-2021-09-15/>

⁵ https://sc.edu/about/offices_and_divisions/sustainability/documents/univ_policy_550.pdf

Management, but it is now situated within the Office of Student Services, and many of its activities are oriented toward students. However, the Office of Sustainability has a campus-wide remit, and in addition to student programming, it engages with academic and operational/administrative departments across the university (e.g. Facilities, Dining Services, Conferences and Events Services, etc.). Among its on-going initiatives are the Green Certification program to promote sustainable practices in offices and departments. The program website lists 24 offices and departments that received green certification between Fall 2015 and Spring 2018. The Office also runs a community garden that utilizes student volunteers.

In his role as a director of the Office of Sustainability, Larry Cook heads the President's Council on Sustainability (hereafter 'Council'). This Council was created (under a different name) in the 1990s, and it was revived by President Caslen in Spring 2021 after seven years of inactivity. As part of the strategic planning process, President Caslen charged the Council with creating a new campus sustainability plan to replace the 2017 plan, which was drafted by Larry Cook's predecessor.⁶ The current Council includes 6 faculty members, 3 student representatives, and 11 administrators and staff members, including representatives from the offices of Student Life, Athletics, University Housing, Purchasing, Vehicle Management and Parking Services, Facilities Planning, Design and Management, and Dining Services. The Council will be divided into workgroups that will focus on specific areas in which sustainability measures can be implemented. The aim is to produce a plan that, in contrast to the 2017 plan, has actionable, realistic goals with clear benchmarks and metrics. The Council had its first meeting in January 2022, having been delayed for almost a year, in part because of the departure of President Caslen and the interim status of current University leadership.

3.2. *'Green' Infrastructure*

Separate from the Office of Sustainability and the President's Council on Sustainability, there have been various efforts around campus to enhance sustainability. One notable, early effort was the construction in 2007 of an almost \$20 million biomass-fueled steam turbine plant (located on Sumter and Whaley) that was intended to generate electricity for campus. An accident at the plant in 2009 led to the facility's shutdown and raised questions about the contract the University had negotiated with the firm that designed and built it. While the University recouped some of its investment in contract settlement (according to press reports), one of our interviewees suggested that this debacle dampened enthusiasm on campus for ambitious renewable energy projects.⁷

⁶<https://uscsustainability.wixsite.com/sustainabilityreport>

⁷ <https://forestpolicy.com/2011/10/12/u-of-south-carolinas-biomass-experiment/>. Local journalist Andy Shain reported on the University's settlement with Johnson Controls:

Several 'green' infrastructure projects nonetheless have come to fruition. In 2004, the University opened the Green Quad, a silver-level LEED-certified student residence hall with room for 500 students. A total of 15 LEED-certified projects have been completed since then, including the LEED platinum-level Darla Moore School of Business, and the gold-level Honors College Residence Hall, Hollings Library Addition, Center for Health and Wellbeing, and the renovated School of Journalism. Another ten buildings are 'Green Globes' certified, including the football operations building. Interviewees did note, however, that some elements of LEED certification in campus buildings were never implemented or maintained, including the use of solar power and hydrogen-fuel cells in the DMSB and the Green Quad, respectively. According to our interviewees in Facilities, our LEED facilities have never been formally recommissioned, as formal commissioning presents a cost to the University that does not generate any energy savings.

The University has also made an effort to improve bike and pedestrian accessibility. A new bike lane on Greene Street, for instance, was added as part of the re-development of the area between DMSB and the Colonial Life Arena; there is also a bike lane on Wheat Street running between Pickens and South Main. The University closed Greene Street between Sumter and Pickens to vehicular traffic, and it enhanced the safety of pedestrian crosswalks on Assembly. Finally, the University has increased the number of bike racks on campus (largely in response to student activism on this issue).

3.3. Faculty Research and Teaching

Several faculty members in the University community are involved in environmental sustainability through research, teaching, and activism on campus and in the broader community.

Of the 23 chairs, program directors, and deans who responded to our survey, slightly more than half reported that their departments offer courses and programming relating to environmental sustainability, and nearly three-quarters reported that at least some faculty members in their departments are engaged in sustainability-related research.

One important hub for research and teaching is the School of Earth, Ocean, and Environment (CAS), which includes a diverse group of physical and social scientists focused on an array of environmental issues, including water resources, climate change, coastal resilience, ecology (especially marine ecology), and environmental and energy policy. The SEOE offers a BS in

<https://www.energyjustice.net/content/usc-reaches-24-million-settlement-developer-closed-biomass-facility>

Environmental Science (ENVS, 90 majors), a BA in Environmental Studies (ENVR, 160 majors); many of the courses for these majors are cross-listed and/or taught by other departments (including Biology, Chemistry, History, Philosophy, Geography, and Political Science). There are several dedicated ENVR courses focused specifically on sustainability, including ENVR 231 (Introduction to Sustainability Management and Leadership); ENVR 352 (Energy, Society, and Sustainability); ENVR 533 (Sustainability Projects Course). At the graduate level, the SEOE offers the MEERM program (Master's of Earth and Environmental Resources Management), which can be completed in conjunction with a law degree. The Baruch Institute, a major center of research on coastal ecology and marine processes, is housed within the SEOE.

The Department of Geography (CAS) which shares 4 jointly appointed faculty with the SEOE, also has a strong research and teaching profile on issues of climate change, adaptation to environmental change, and social vulnerability to natural hazards. As well, Geography houses expertise on digital techniques for detecting, modelling, and visualizing environmental change. Geography has an internship program that connects students to a number of local environmental research and advocacy groups, including the Palmetto Cycling Coalition, the Congaree Land Trust, the City of Columbia Greenways, SC Forestry Commission, SC Conservation Voters, SC Audubon.

The Darla Moore School of Business offers International Business and Sustainable Development (IBUS 738) and Economics of Sustainable Development (ECON 509), and it has proposed two new courses on sustainability, one relating to marketing and the other to supply chain/operations management. The DMSB, in addition, will be launching a new undergraduate Sustainability concentration in Fall 2022, and a new sustainability elective is currently in the review process. DMSB will be launching the second iteration of a sustainability stakeholder survey this Spring, and it is continuing to expand composting efforts in the DMSB building. As well, the DMSB adjudicates the annual Page Prize for Sustainability Issues in Business Curricula, which encourages the integration of sustainability principles into business courses and programs. Elsewhere in the University, the College of Hotel, Retail, and Tourism Management offers several courses including Ecotourism HRTM 383, Sustainable Tourism (485), Sustainable Tourism Planning and policy (482), and Sustainable Foodservice Systems (428). The College of Engineering and Computing offers courses entitled Sustainable Construction for Engineers (ECIV 557) and Sustainable Design and Development (EMCH 529).

Finally, we note that the College of Arts and Sciences selected 'Climates' as its Fall 2021 semester theme. Over the course of the semester, the College sponsored several high-profile events relating to climate science, climate change, and climate justice, including a climate-change research panel in November 2021 featuring an interdisciplinary group of UofSC faculty. Several departments and programs, including Marine Science, History, and English, offered special courses on the climate topic, as well.

3.4. Faculty and Staff Extracurricular and Extramural Activism

Several faculty members actively advocating for environmental sustainability at the University and in the broader community. For many of sustainability advocates, research, teaching, and community-based work are inextricably connected. We provide here just a few notable examples of environmental advocacy among the faculty.

Lori Ziolkowski (interviewed for this report): A member of the SEOE, Dr. Ziolkowski has been active in teaching about climate change (including a course called ‘The Science of Climate Fiction’ for the Fall 2021 CAS theme semester), and she is currently involved in the City of Columbia’s Climate Protection Action Committee (CPAC).⁸ CPAC, created in 2006 after the Mayor signed the US Conference of Mayors Climate Action Plan, coordinates the City’s efforts on air quality, climate change, renewable energy, recycling, and waste reduction. In her advisory role on this committee, Dr. Ziolkowski has been engaging with Dominion Energy to move the city toward renewable energy (Note: Larry Cook of the Office of Sustainability and Troy Nelson from Facilities have also engaged with CPAC and are involved in discussions about increasing the City’s and University’s use of solar power).

Matt Kisner (interviewed for this report): A member of the Philosophy faculty, Dr. Kisner leads a philosophy course on the ‘Ethics of Climate’, and he has been planning the Climate Ready Columbia Conference, to be held April 1 and 2, 2022. This conference, which has funding from the Ann Johnson Foundation Institution, will focus on municipal policy options for managing climate change. The conference, which is targeted at city workers and local community organizations, has around 15 partner organizations, including the Gills Creek Watershed Association, Conservation Voters of South Carolina, and Sustainable Midlands. The conference will feature panels on different policy issues, including heat-mitigation planning and enhancement of green spaces.

Kirstin Dow (not interviewed for this report): Dr. Dow is a faculty member in Geography and has served for ten years as Director of the Carolinas Integrated Sciences and Assessments (CISA). The CISA team has supported the development of adaptive capacity to address climate change in the Carolinas by hosting the biannual Carolinas Climate Resilience Conference, developing a set of resources of heat and health, providing information on precipitation extremes and future climate projections, and conducting vulnerability research in collaboration coastal communities.⁹ The CISA team also piloted the citizen-science drought monitoring effort in the Carolinas that is now a permanent element of the national Community Collaborative Rain, Hail, and Snow program (CoCoRaHS).¹⁰ Dr. Dow is currently partnering with

⁸ <https://cpac.columbiasc.gov/>

⁹ www.cisa.sc.edu

¹⁰ <https://www.cisa.sc.edu/cocorahs.html>

the City of Columbia's Tree and Appearance Commission and others in applying for detailed mapping of the urban heat island. Dow is also Co-Chair of NOAA's Climate Working Group, a standing committee of the Science Advisory Board, and a recently elected fellow of the AAAS.

Kealy Carter (interviewed for this report): A clinical faculty member in the DMSB, Dr. Carter has led several sustainability efforts in the Business School. For instance, she created a sustainability stakeholder survey within DMSB for students, faculty, and staff to identify areas of focus for sustainability (e.g. building operations, reporting, and curriculum development). She has worked with the Office of Sustainability in the past to align campus sustainability goals with UN sustainability goals, and she has also been involved in efforts to collect data about cost savings relating to energy efficiency. She was involved in creating the proposal for a sustainability concentration for DMSB majors, and she is also working on a 'sustainability elective' for MBA students. Finally, she has been crafting an operational sustainability plan for DMSB.

3.5. Student Sustainability Efforts and Initiatives

There are several notable student efforts oriented around sustainability:

- There are 500 student residents of the Green Quad who have committed themselves to sustainable living. In addition, the Residence Halls Association has a sustainability officer (student position), and the Student Housing Office has appointed 'EcoReps' in several dorms, including the Women's Quad, Capstone, Maxcy, Honors, East Quad, and Preston. EcoReps can design their own events, and they have access to residence-hall funds for programming and initiatives.
- Students run the Green Certification program through the Office of Sustainability, and student volunteers maintain the Green Quad garden.
- The UofSC student government recently created an Environmental Sustainability Committee, and the student senate passed a Fossil Divestment Resolution in Spring 2021. Senators on the Environmental Sustainability Committee have been investigating a variety of issues, including re-introducing electric scooters on campus, increasing the number of bike racks, and improving recycling in the Greek Village. Student representatives we interviewed also mentioned interests in composting and creating 'green roofs'.
- There is an active chapter of the Sierra Club on campus. Another key student organization is Net Impact, which is based in the DMSB and is dedicated to fostering sustainability in the business sector¹¹. This organization has hosted an annual Sustainability Symposium over

¹¹ <https://garnetgate.sa.sc.edu/organization/netimpact>

the past 6-7 years, and they have undertaken efforts to make the DMSB itself operate more sustainably (for instance, through composting).

4. The limitations on sustainable practices at UofSC

The activities described above (along with the faculty resolution in support of fossil fuel divestment) indicate that there is substantial interest among faculty and students in environmental sustainability and a desire to promote sustainable practices on campus. Our interviewees, however, were in agreement that the Administration has not worked in a consistent, concerted fashion to support sustainability or to instill a sustainability ethic across the University. Our interviewees expressed frustration at what they see as a lack of coordination and leadership at UofSC on environmental issues. They described the University as operating in 'silos', with individual offices and departments making their own independent operational decisions, and they remarked that faculty and staff members are unaware of what their colleagues are doing elsewhere on campus with respect to sustainability measures.

Our survey of department chairs lends some support to this general impression. While nearly three-quarters of our 23 respondents indicated that they are aware of the Office of Sustainability, only around one-third were aware of the Green Certification program, and fewer than half were aware of the President's Council on Sustainability. Only one respondent reported having a departmental-level sustainability coordinator or leading department-level efforts to reduce energy consumption. In response to an open-ended question asking what the University can do to encourage sustainability at the department level, respondents provided comments like 'Better advertise programs; I didn't know they existed'; 'I would like more guidance on what I can do'; 'Provide simple solutions that are actionable'; and 'This is the first I have considered it. I have no useful ideas, but if some are shared, I will embrace them'.

Further to this point, our interviewees all praised the Office of Sustainability for its efforts and accomplishments. But interviewees lamented that the University has not given the Office of Sustainability the resources it needs to make substantive, campus-wide changes toward sustainability. Our interviewees provided a litany of missed opportunities, describing a pattern whereby the Administration makes symbolic gestures toward sustainability but does not follow through with substantive action. One example mentioned by faculty, staff, and student interviewees is non-motorized transportation. While the University has installed two bike lanes (on Greene and Wheat Streets) and has added bike racks, it has not worked with the city to improve cycling safety and access, and pedestrian crossings continue to be very dangerous. Our student interviewees described feeling discouraged by the heavy traffic around parking garages, noting that many students who live close to campus drive into campus more than once

a day rather than taking a shuttle bus or walking/cycling. One interviewee described in detail a failed project that would have involved the refurbishment of abandoned bicycles, which could then be sold at low cost to students. The student spent a year and a half trying to work with various University offices to implement this program, but she encountered bureaucratic obstacles at every turn, and the whole effort fell apart. Meanwhile, this interviewee noted, a group of Clemson students, using her proposal as a model, successfully designed and implemented a similar project at Clemson.

Two of our interviewees also mentioned a failed effort to create a composting facility that would process food waste from University dining halls. The Landscape office within Facilities had advocated for a composter and had researched different composting systems that would have produced compost at a large scale for University grounds. But after getting quotes, the University decided that the effort did not merit further consideration because it did not offer enough of a financial return (as noted above, activists in the DMSB have continued to pursue composting, but this will not have a campus-wide impact).

While most of our interviewees were critical of what they view as the University Administration's lack of prioritization of environmental concerns, they were also mindful of structural barriers to sustainability measures—especially in terms of shifting to renewable energy. UofSC does not generate any electricity on-campus, and all electrical power comes through a long-standing state contract with Dominion Energy. UofSC receives a special rate for state agencies in the Columbia area, of which UofSC is the largest. Energy on this contract comes from multiple sources that supply Dominion's grid (within the state of South Carolina, nuclear and natural gas are the main sources of fuel for power generation, but the Dominion grid draws on energy generated in multiple states).¹² UofSC's arrangement with Dominion saves the University about \$1 million per year because it helps Dominion balance demand needs across all its customers in the event of severe weather or pipeline restrictions. Given this favorable cost structure, the University is understandably reluctant to abandon its long-term contract. Thus, part of Dr. Lori Ziolkowski's (and others) efforts with CPAC is to re-work the City's contracts with Dominion Energy and to encourage Dominion to include more renewable energy in the mix. According to Facilities, solar panels are likely to be part of the utility master plan, and Facilities hopes to generate a revenue stream by putting unused power back into the grid. But there are no quick fixes to the University's reliance on fossil fuels. Long-term contracts, it must be noted, feature in many other components of University operations (including, for instance, Dining and Purchasing); these contracts are negotiated with cost savings, rather than sustainability, as the primary objective.

¹² In 2020, 55% of South Carolina's energy was generated from nuclear fuels, 24.6% from natural gas, 12.65% from coal, 4 percent from hydroelectric, and less than 2% from solar. In 1990, almost one-third of energy in the state was generated from coal, which produces more than double the CO₂ in lb/kWh as natural gas. UofSC also burns fossil fuels (almost entirely natural gas, with about 10% low-sulfur diesel fuel) to produce steam for heat and humidity control.

Also relevant to understanding the University's seeming lack of prioritization of sustainability is the institution's chronic lack of resources, especially for infrastructural improvements. As described to us by the two Facilities managers we interviewed, the University is currently facing millions of dollars in deferred maintenance costs. They described the University as limping along with an aging infrastructure and as scrambling to keep its existing infrastructure functioning. Long-term energy savings and carbon reductions involve significant upfront investment, but resources for such investments are not forthcoming from the state legislature. In the case of the shift to LED lighting at Thomas Cooper Library, the \$1 million upfront cost was covered by a loan from University Foundations. It is difficult to see how this model can be replicated across the entire University given the scale of needs. In short, the year-to-year struggle to cover the operational costs greatly hinders the University's long-term investments in sustainability.

5. Recommendations

As a committee, we believe that a concerted, institution-wide effort toward sustainability is important for the sake of our environment, which is experiencing unprecedented stresses from high levels of resource consumption, habitat destruction, and carbon emissions. It is also crucial to the university's reputation as a forward-thinking, innovative institution. UofSC is a public, flagship university that has a public mission to work for the good of the state's citizens. We therefore have an institutional responsibility (affirmed in the University's Environmental Policy Statement) to reduce the University's impact on the environment and to lead the broader community in implementing sustainable practices.

Working toward environmental sustainability at the University will be very complex and challenging, and if the Faculty Senate wishes to put its political weight behind sustainability, it will need to look well beyond the Education Foundation's fossil-fuel and energy portfolio. This is not to say that divestment as a strategy lacks merit, but, rather, that it cannot be relied upon, on its own, to bring substantive change.

Our recommendations are as follows:

1. Insofar as the Faculty Senate wishes to pursue divestment further, it could request that the Board craft a comprehensive ESG policy that encompasses different facets of corporate environmental responsibility. As noted earlier, ESG statements are increasingly common among institutional investors, and there is plenty of guidance available on crafting and implementing these statements. While the Educational Foundation mainly holds passive investments (e.g. index funds), Foundation trustees can investigate, as a matter of course, the (the monetary and non-monetary) costs and benefits of fossil-free index funds and ESG-centered mutual funds. For the relatively

small share of Foundation investments in private equity, the Foundation board could purposefully direct any new investments outside of the fossil fuel sector.

2. The Faculty Senate needs to hold the Administration accountable for the requirements spelled out in the University's Environmental Policy Statement. According to this policy, the University Administration is responsible for monitoring progress toward sustainability goals by collecting institutional data, quantifying savings from sustainable practices, and incorporating sustainability into campus strategic planning. As well, the President is required to convene the President's Council for Sustainability on a regular basis. To improve faculty oversight, we recommend that the Faculty Senate create a permanent Faculty Committee for Environmental Sustainability. Ideally, this committee would liaise with the President's Council for Sustainability and would convey faculty interests, priorities, and ideas to the Council.
3. The Faculty Senate should consider asking the Administration to move the Office of Sustainability out of Student Services and that it elevate the position of Sustainability Director, perhaps even to the level of Vice President. The Office of Sustainability does not have the capacity (i.e. budget, staff, and institutional authority) to coordinate sustainability initiatives across the University (e.g. energy efficiency and waste reduction), to properly assess the university's environmental footprint, or to evaluate the potential impacts (both costs and savings) of sustainability measures. Creating a higher-level sustainability position might provide more capacity to lobby state legislators for investments in long-term energy savings; to secure outside funding (from government agencies and donors) for creative sustainability initiatives; to build relationships between the University and community organizations, the City, and the State Energy Office; and to promote research initiatives centered on renewable energy, climate-change mitigation and adaptation, and reduction in waste and pollution.
4. The Faculty Senate can request that all corporations that recruit on campus (and perhaps those that do business with the University), make available detailed information about their carbon-mitigation strategies and other measures to reduce environmental impacts.
5. Using its role in crafting and approving curricula and general education requirements, the Faculty Senate should consider adding sustainability and environmental issues to the new Core and/or in the University 101 curriculum. It might also work with the Provost and with deans to spearhead new cross-disciplinary programs and student-oriented learning experiences centered on sustainability.
6. The Faculty Senate should consider voicing its support for Student Government efforts to enhance sustainability, including the creation of a 'sustainability fund' to facilitate

student-led initiatives. The student body has voted three times in favor of a small fee to support sustainability activities, but this has been rejected each time by the Administration. Clemson University students, meanwhile, have successfully implemented an optional sustainability fee for student-led initiatives.

Finally, while it has not been our task as a committee to provide an exhaustive inventory of the University's environmental impacts or to suggest specific 'green' policies or practices, we wish to highlight two areas that, according to our interlocutors, potentially offer the highest returns on future sustainability investments: (1) transportation and parking and (2) building heating, cooling, and lighting. These issues, we wish to emphasize, are complex and do not lend themselves to easy solutions. Encouraging alternative transportation, for instance, might require the installation of costly infrastructure (e.g. electric charging stations), as well as an increase in parking fees, which would undoubtedly be controversial; it would also require coordination between Parking Services, state fleet management, campus and city police, and so on. Likewise, reducing energy consumption in buildings would require not only physical upgrades, but also a shift in weekend and after-hour building use policies (currently, reserving a room for a weekend event requires that the entire building be heated or cooled, even if only one or two rooms are being used). Also on the table would be the introduction of temperature set-points that might strike some employees as too warm in the hot months and too cold in the cold months. Working through these kinds of complexities will take time and careful management, and faculty should be prepared to consider the costs and benefits of different measures.

6. Appendices

List of Appendices:

- Interviewee invitation to participate email
- Interviewee template
- Survey questions and report
- President's Council on Sustainability membership list

6.1. Interviewee Invitation to Participate Email

Dear ,

I am writing to you as a member of the Faculty Ad Hoc Committee on Environmental Sustainability, which was created by the Faculty Senate last Spring [maybe add: following the adoption of a fossil-fuel divestment resolution]. The Faculty Senate has asked us to recommend how it might better support and promote sustainability at UofSC. Toward this end, we are trying to learn more about existing sustainability efforts on campus, and we are interviewing individuals who have been involved in sustainability initiatives/issues. The Sustainable Carolina office shared your name with us, and I'm hoping you can spare a half hour to share your experiences and thoughts with me regarding environmental sustainability at UofSC. I should emphasize that you do not need to speak on the record, and you can opt to remain anonymous in the final report.

Let me know if you can spare some time in the next month. My schedule is open _____. I'm happy to meet in person or via Teams/Zoom—whatever is convenient for you.

Thanks for your time, and hope we have a chance to meet soon.

6.2. *Semi-structured Interview Template*

- We've contacted you because you've been involved in environmental and sustainability issues on campus. Can you say a few words about what sustainability means to you?
- What are the campus environmental sustainability initiatives/activities you have been involved in?
- What have been your successes?
- Which of your efforts/plans didn't succeed as you had hoped? [or: Are there goals you set but weren't able to achieve?]
- What obstacles have you experienced/encountered in trying to plan/implement sustainability initiatives?
- What opportunities do you see for making campus more environmentally sustainable?
- Are there others whom we should contact?

6.3. Department Chair Survey and Response Report

1. Questions

Questions can be divided into 4 main categories: awareness, departmental issues, suggestions on university's efforts, research and teaching, and faculty engagement.

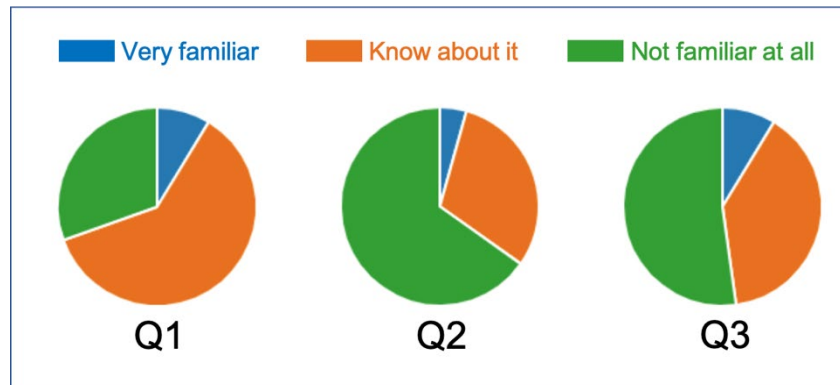
1.1 Awareness

Summary: There is very little knowledge across campus regarding ongoing efforts at UofSC

Q1: Are you aware of the Office of Sustainability and the programs they offer?

Q2: Are you aware of the Green Office Certification program?

Q3: Are you aware of the President's Council on Sustainability and their mission?



1.2 Departmental Issues

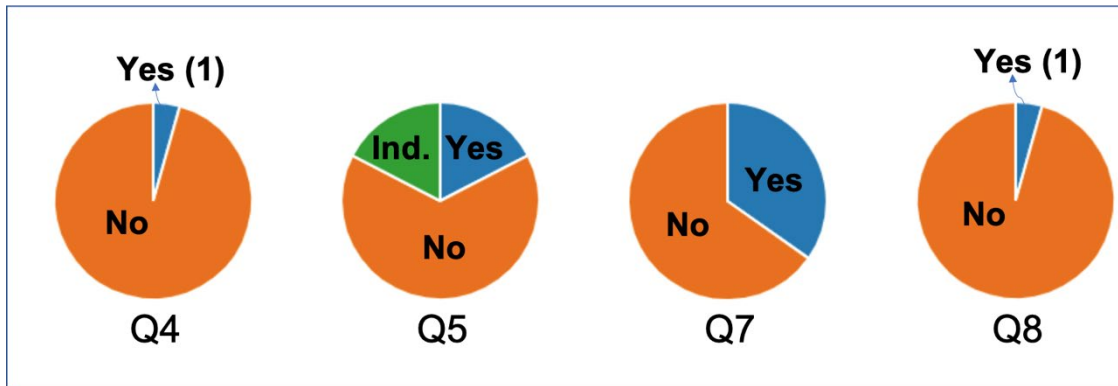
Summary: Sustainability is not dealt explicitly at the departmental level. Most concerns regarding sustainability come from recycling management.

Q4: Does your department have a sustainability committee or representative?

Q5: In the past 3 years, has any sustainability issue been raised in a faculty meeting?

Q7: As Chair, do you encourage waste reduction and/or recycling?

Q8: As Chair, have you led any efforts to reduce electricity/power usage in your building?



concern that facilities was trashing recyclables

Recycling bins are available and are clearly marked.

New recycling cannisters in building

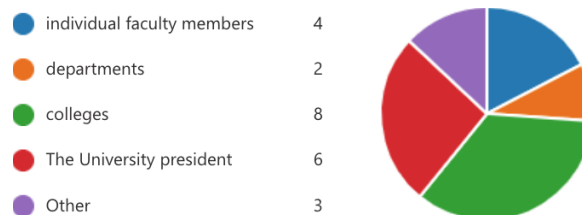
We do not have anything meaningful

Moving all personnel files, including the T&P process to online. Is there a need to any of these files to be paper? I believe the faculty senate may even require paper copies of some aspects of these files.

I haven't heard of any. In relation to question 7, the efforts are encourage in terms of reducing printing and this is driven by finance

1.3 Suggestions Regarding University Efforts

Q11: In your opinion, which level of University governance is MOST responsible for implementing sustainability goals?



- Committees with focus
- Setting goals: the faculty senate in coordination with the provost. Implementing these goals: the provost office

Q10: What, if anything, can the University do to encourage environmental sustainability at the department level?

Summary: 13 out of 23 responses (56%).

- Simple actionable solutions that can be easily implemented and won't result in extra costs.
- Better advertisement of programs and coordination.

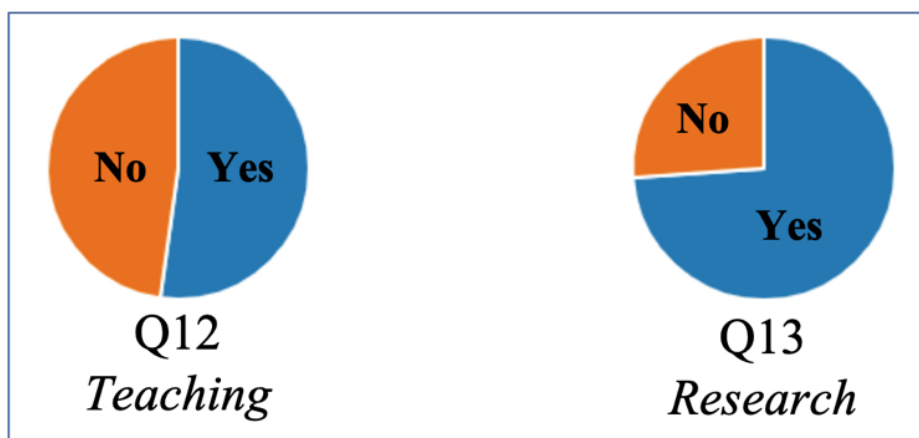
Give us a list of specific things we can do to encourage sustainability. Recognize that we are short-staffed so these should be relatively easy to implement and sustain.

Tie it to a more functional and reliable facilities program
Better advertise programs. I did not know they existed. Manage temp in buildings better. It is often so cold in the summer (and right now, in fact) that we need to wear sweaters. Also, the university should encourage more biking to campus and do regular checks on leaks. E.g., I complained about leaky showers in the men's locker room in Blatt for a LONG time and I'm still not sure they are fixed. Have more sustainable options in cafeterias.
Moving all personnel files, including the T&P process to online. Is there a need to any of these files to be paper? I believe the faculty senate may even require paper copies of some aspects of these files.
we had a difficult time getting some shredding done, we had six boxes from clearing out file cabinets and it took months to get it done
Reach out to department chairs, maybe through their group meetings at the school/college level (that way Deans are involved too) to educate them about what the programs are and what chairs can do to help with the most important issue of our time.
I'd be happy to push this more. I would like more guidance on what I can do. Covid has taken over alot of my thinking, so the more detail I get about this, the better :)
Encourage virtual meetings, paperless practice.
Provide simple solutions that are actionable. I don't have a lot of time and energy at the end of the day for anything that isn't breathing down my neck.
No all faculty are comfortable moving to online tests for large lectures, but COVID force more to do so. Photocopying tests is where a lot of the paper waste happens in our department. So this has gone down.
Provide tips
I cannot incur a new cost. That seems to be the biggest issue. I don't have the budget for it.
This is the first I have considered it. I have no useful ideas, but if some are shared, I will embrace them

1.4 Research and Teaching

Q12: Does your department offer any courses or programming focused on environmental and/or sustainability issues?

Q13: Are any of your faculty members engaged in research that deals with environmental and/or sustainability issues?



1.5 Faculty Engagement

Q14: What would you guess to be the level of interest among your faculty overall in implementing sustainability measures at the department level?



- High interest: Faculty are very eager to make our workplace more sustainable.
- Medium interest: Faculty would support some basic measures to reduce waste and energy consumption.
- Neutral: the issue has never come up, but faculty probably would not oppose sustainability measures if the University administration gave us some resources to implement them.
- Other: Overall I think faculty would support measures, but I have not heard any conversations on the topic.

1.6 Other Remarks

Q15: Please share any thoughts you have on sustainability and barriers to/opportunities for creating a more sustainable campus.

5 responses (22%)

I listed the college as the coordinating unit as building services will likely be involved and there is sharing that should be possible across many units.

Again, anything we can do relatively easily is more likely to be sustained. I wish we could do more, but are staff and time limited.

There may be barriers but this is the most important issue of our time, so we need to work through them. I am excited to hear there are initiatives, embarrassed I was not aware of them, and eager to tackle this at the department level with knowledge of the UofSC initiatives. Please educate me.

In general we have made everything especially our business practices difficult and Byzantine. Our computer systems and software have failed us consistently in terms of efficiency and capability. In addition, there is a range of competency (and complacency) among the cogs in the wheel which really slows things down, decreases efficiency, and reduces the time one can dedicate to such peripheral/non-urgent matters related to sustainability.

Bike paths on campus and around Columbia

6.4. President's Council on Sustainability Membership List

COUNCIL ADMINISTRATION

Office of Sustainability/Sustainable Carolina

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Grace Kazmierski, Asst. Director, 777- 6404, kazmierg@mailbox.sc.edu

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Campus Dining: Scott Warner, Sustainability Manager, Marketing Assistant at Carolina Food Co., warner-scott@aramark.com, 803-777-2638

Healthy Carolina: Emily Cato, Associate Director, Healthy Carolina Initiatives, ec23@mailbox.sc.edu, 803-777-3164

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