2023 Sustainability Report

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UNIVERSITY OF MASSACHUSETTS AMHERST

2023 SUSTAINABILITY REPORT

BASED ON THE ASSOCIATION FOR THE ADVANCEMENT OF SUSTAINABILITY IN HIGHER EDUCATION’S SUSTAINABILITY TRACKING, ASSESSMENT, AND RATING SYSTEM REPORT
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EXECUTIVE SUMMARY

The University of Massachusetts Amherst (UMass Amherst) is a sustainability leader serving as a model for communities across the country. The year 2023 marks the sixth consecutive submission with which UMass Amherst has achieved a Gold rating from the Association for the Advancement of Sustainability in Higher Education (AASHE). The 2023 v2.2 report score is 75.29, a decrease from 76.93 in 2020. This score places UMass Amherst #8 in the U.S. among peer institutions (defined as public doctorate grant- ing institutions with 20,000+ full-time equivalent enrollment) as of May 8, 2023.

While UMass Amherst is about ten points away from achieving a Platinum rating, our operations score is already on par with other platinum institutions (see figure 1). We scored higher on operations than both the University of Massachusetts Lowell (UMass Lowell) and the University of New Hampshire (UNH), however, the university is falling behind its peers in engagement, academics, and planning and administration. Despite a 5.38 increase from our 2020 operations score, our overall 2023 STARS score was lower than our overall 2020 score.

To continue leading in sustainability, UMass Amherst needs to reinvest in the academics, engagement, and planning and administration portions of their work. A Platinum rating will put UMass Amherst back on par with our peers and continue our status as a model of sustainability in higher education. The investment necessary to increase our STARS score to Platinum will advance the culture of sustainability on campus and have far reaching impacts beyond the rating itself.

This report breaks sustainability down into twelve categories and articulates recommended next steps for each topic. Along with these detailed recommendations, there are three overarching steps that UMass Amherst can take to advance sustainability on campus quickly and efficiently.

RECOMMENDATION 1

UPDATE THE SUSTAINABILITY INTEGRATION PROJECT

Based on this report, as well as a post-STARS analysis developed by GreenerU, UMass Amherst should create a three-year sustainability roadmap to a Platinum rating. Since the Sustainability Integration Project (SIP) was published in 2017, its goals and strategies for advancing sustainability have either been achieved or need to be updated. UMass Amherst should revisit and revise the SIP goals and strategies using the STARS metrics as a guide to a more sustainable campus.

RECOMMENDATION 2

INCREASE CAMPUS-WIDE BUY-IN

UMass Amherst should increase buy-in and investment from stakeholders across campus. This will not only increase UMass Amherst’s engagement score, but impact the methodology of the report itself. As this report illustrates, many different parties are data holders for the sustainability information covered in this report; however, the Sustainability Manager and Assistant Director of the School of Earth and Sustainability (SES) usually do a disproportionate amount of the data collection, analysis, and entering. With buy-in and engagement from campus data holders, sustainability work would be done more efficiently and effectively, and more offices on campus would have an active role in improving sustainability on campus.

RECOMMENDATION 3

EXPAND SUSTAINABILITY PROGRAMMING

UMass Amherst should expand sustainability programming to and beyond pre-pandemic levels. Many programs, particularly those that relied on in-person participation, were suspended during the pandemic. Some of these programs have not been reinstated, which should become a priority. Expanding engagement programs would advance the culture of sustainability on campus. An engaged campus will generate more creative and inclusive solutions, activities, and initiatives.

Figure 1: Overall STARS scores by category for UMass Amherst and peer schools

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ABOUT THE REPORT

Institutions of higher education play a pivotal role in transforming the lives of individuals and in enhancing their communities. UMass Amherst recognizes its responsibility as a leader in sustainable development and education for the community, state, and nation. Imparting knowledge of sustainability is vital to achieving our campus-wide mission of producing citizens who serve as leaders in their fields working to create a just, healthy, and sustainable world.

One of the most recognized and used sustainability reporting tools in higher education is the Sustainability Tracking, Assessment & Rating System™ (STARS), a program run by AASHE. STARS is a transparent, self-reporting sustainability framework for higher education institutions designed to:

• Provide a framework for understanding sustainability in all sectors of higher education
• Enable meaningful longitudinal peer comparisons using a common set of measurements developed with broad participation from the international campus sustainability community
• Create incentives for continuous improvement toward sustainability
• Facilitate information sharing about higher education sustainability practices and performance
• Build a stronger, more diverse campus sustainability community

By submitting information to STARS, institutions can earn a Bronze, Silver, Gold, or Platinum rating. The scoring system is based on the percentage of applicable points earned across five categories: Academics, Engagement, Operations, Planning & Administration, and Innovation. UMass Amherst has earned a Gold rating every year we have submitted (see pages 6 and 7 for details). This year, our STARS data is the most accurate it has ever been, and we are proud of the progress we've made in our methodology and analysis.

The STARS system creates a benchmark that higher education institutions can use to compare their progress with their peers. This report uses two of UMass Amherst's peers to benchmark our performance: UMass Lowell (v2.2 Gold) and University of New Hampshire (v2.2 Platinum). These peers were selected based on their similarities to UMass Amherst in structure and STARS score. The University of Connecticut was also recognized as a peer school, but their most recent STARS submission expired as of the draft of this report.

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Comparison with the selected peer schools was used to assess the progress UMass Amherst has made on sustainability advancement. GreenerU, a Massachusetts-based sustainability consulting firm, assisted UMass Amherst with this comparison. An average was taken of each credit score from the most recently published reports from UMass Lowell and the University of New Hampshire and compared to UMass Amherst's scores. Research was done to determine the causes of score differences and identify potential strategies UMass Amherst can use to improve our sustainability work. This report contains the results of this analysis.

This report contains one section for each subcategory of the STARS report. Each section highlights UMass Amherst's initiatives, contains a table of STARS credit information and scoring, and provides up to three recommendations for continuous improvement. Each subcategory section also provides the alignment of the topic with the United Nations' Sustainable Development Goals (U.N. SDGs), which are seventeen global initiatives encompassing education, human rights, public health, community development, and economic growth. A summary of these goals can be found in Appendix A.
SUSTAINABILITY TIMELINE

2007
UMass System President signs the five UMass campuses onto the American College & University Presidents’ Climate Commitment

2008
UMass Amherst publishes a Climate Action Plan

2011
UMass Amherst becomes the largest food-service provider in the nation to sign on to the Real Food Campus Commitment

2013
UMass Amherst named 1 of 17 "amazing green college campuses" by Mother Nature Network

2014
UMass Amherst wins the prestigious 2014 Second Nature Climate Leadership Award in the ‘Doctorate Granting Institution’ category

2015
UMass Amherst establishes the School of Earth and Sustainability

2016
UMass Amherst completes the largest campus solar project in New England, installing over 15,000 solar panels on five buildings & two parking lots

2017
UMass Amherst completes the largest campus solar project in New England, installing over 15,000 solar panels on five buildings & two parking lots

2018
UMass Amherst is honored with the 2019 Tree Campus USA recognition by the Arbor Day Foundation for its commitment to effective urban forest management

2019
UMass Amherst is ranked #7 in 2018 Sierra Magazine Cool Schools

2020
UMass Amherst unveils UMass Carbon Zero — an ambitious vision to limit the dangers of climate change and power the commonwealth’s 1,500-acre flagship campus with 100% renewable energy by approximately 2032

2021
The John W. Olver Design Building wins the COTE Top Ten Award

2022
UMass Amherst is ranked #7 in 2018 Sierra Magazine Cool Schools

2023
UMass Amherst completes the largest campus solar project in New England, installing over 15,000 solar panels on five buildings & two parking lots

v1.0 66.49 points
v1.2 70.93 points
v2.0 68.18 points
v2.1 75.77 points
v2.2 76.93 points
v2.2 75.29 points
v1.0 66.49 points
v1.2 70.93 points
v2.0 68.18 points
v2.1 75.77 points
v2.2 76.93 points
v2.2 75.29 points

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CURRICULUM

Through offerings of learning opportunities and demonstrating best practices on campus, the higher education sector is uniquely positioned to equip students for a role in leading society to a sustainable future. UMass Amherst offers a broad range of curricula that help launch careers in mitigating climate change.

UMass Amherst’s professional offshore wind certificate program offers education for professionals and graduate students seeking to up-skill and broaden their knowledge of the offshore wind industry across a broad range of disciplines. Participants will receive professional development and networking support; direct introductions to hiring offshore wind companies; and a non-curriculum stipend to help address specific personal and professional barriers on an as-needed basis.

CityLab is a two-week immersive program for students interested in exploring building construction, sustainability, engineering, architecture, and technology-related career paths. Students in this course will learn by doing—they will explore and apply building science principles in the real-world classroom of the Boston Metro region.

UMass Clean Energy Corps is an interdisciplinary service learning program. Each spring semester, the class conducts clean energy studies and building audits for several cities and towns across Massachusetts. The program’s holistic approach also helps to create healthier buildings and improved work and learning environments by addressing ventilation, indoor air quality, humidity, and temperature control issues.

Expand faculty incentives to increase the quantity and diversity of sustainability courses offered.

Institute institution-wide undergraduate sustainability-focused learning outcomes.

Administer annual sustainability literacy assessments to track changes in sustainability knowledge.

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<th>Description</th>
<th>Data holder</th>
<th>Score</th>
<th>Total</th>
<th>% achieved</th>
<th>Change from 2020</th>
<th>Comparison to peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 1</td>
<td>Academic courses</td>
<td>SES</td>
<td>8.8</td>
<td>14.0</td>
<td>63%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 2</td>
<td>Learning outcomes</td>
<td>SES</td>
<td>2.6</td>
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<td>33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 3</td>
<td>Undergraduate program</td>
<td>SES</td>
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<td>3.0</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 4</td>
<td>Graduate program</td>
<td>SES</td>
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<td>3.0</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 5</td>
<td>Immersive experience</td>
<td>SES</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 6</td>
<td>Sustainability literacy assessment</td>
<td>SES; Office of Academic Planning and Assessment (OAPAP)</td>
<td>4.0</td>
<td>4.0</td>
<td>100%</td>
<td></td>
<td></td>
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<tr>
<td>AC 7</td>
<td>Incentives for developing courses</td>
<td>SES</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td></td>
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<tr>
<td>AC 8</td>
<td>Campus as a living lab</td>
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<td>4.0</td>
<td>100%</td>
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<td>IN 38</td>
<td>Sustainability course designation</td>
<td>SES</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
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<td>SES</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
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<td></td>
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<tr>
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<td>100%</td>
<td></td>
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<td>SES</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
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</tbody>
</table>
RESEARCH

By researching sustainability issues and refining theories and concepts, UMass Amherst helps our students understand sustainability challenges and develop new technologies, strategies, and approaches to address them.

The UMass School of Earth and Sustainability (SES) offers seed grant funding to spark inter- and transdisciplinary sustainability research that can help eradicate inequities, enhance environmental and social justice, and build a more resilient future. There is up to $10,000 available for each project.

The Sustainability Curriculum Fellowship is an interdisciplinary grant program that partners librarians and faculty for a one-year experience, including monthly group meetings to discuss the integration of sustainability-related library resources into the curriculum. Sustainable UMass makes use of the UMass Library system’s Institutional Repository (ScholarWorks) to preserve and disseminate campus output related to sustainability.

BY THE NUMBERS

- **20%** of employees are engaged in sustainability research
- **64%** of departments are engaged in sustainability research

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<thead>
<tr>
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<th>Total % Achieved</th>
<th>Change from 2020</th>
<th>Comparison to Peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 9</td>
<td>Research and scholarship: Examines the percentage of employees and academic departments that conduct sustainability research</td>
<td>SES</td>
<td>11.1</td>
<td>12.0</td>
<td>93%</td>
<td>▼</td>
</tr>
<tr>
<td>AC 10</td>
<td>Support for sustainability research: Recognizes institutions that incentivize students and academic staff to conduct sustainability research</td>
<td>SES</td>
<td>4.0</td>
<td>4.0</td>
<td>100%</td>
<td>▼</td>
</tr>
<tr>
<td>AC 11</td>
<td>Open access to research: Recognizes institutions that facilitate open access publishing</td>
<td>UMass Libraries</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td>▼</td>
</tr>
<tr>
<td>IN 41</td>
<td>Textbook affordability: Recognizes institutions that support higher education affordability and open digital scholarship by encouraging the use of free and low-cost textbooks</td>
<td>UMass Libraries</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
<td>▼</td>
</tr>
</tbody>
</table>

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

Increase the number of departments that conduct interdisciplinary sustainability research

Expand faculty incentives for pursuing interdisciplinary research

Create a mechanism for faculty to "tag" their proposals as sustainability-related
CAMPUS ENGAGEMENT

Engaging in sustainability through co-curricular activities allows students, faculty, and staff to deepen and apply their understandings of sustainability principles. UMass Amherst’s co-curricular sustainability offerings help to integrate sustainability into the campus culture and encourage behavior changes that promote sustainability.

The UMass Permaculture Initiative is a unique, cutting-edge sustainability program that converts underused grass lawns on the campus into low-maintenance, easily replicable gardens filled with edible plants. This initiative was created by students and then adopted and funded by UMass Amherst’s administration in 2010.

Launch a sustainability training program that empowers an employee in every department across campus to teach their peers what they have learned.

Distribute materials detailing campus sustainability policies and initiatives to all incoming graduate students and employees.

Expand current sustainability-focused professional development offerings and track participation in these opportunities.

The UMass Carbon Literacy Project (CLP) trains students to become peer ambassadors for the cause of raising awareness about the costs and impacts of carbon emissions. The CLP provides knowledge that fundamentally shift how the UMass community lives, learns, works, and thinks. By participating in CLP training, UMass students develop an understanding of anthropogenic carbon impacts. This knowledge equips student educators to make more informed choices, think and speak critically about systems and processes, and facilitate collective meaningful change.

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</thead>
<tbody>
<tr>
<td>EN 1</td>
<td>Student education program</td>
<td>Captains understanding of the programs that allow students to share sustainability knowledge with their peers</td>
<td>SES, Physical Plant Sustainability</td>
<td>3.0</td>
<td>4.0</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>EN 2</td>
<td>Student orientation</td>
<td>Determines how many new students are offered the opportunity to learn about sustainability during orientation</td>
<td>New Student Orientation and Transitions Office</td>
<td>1.5</td>
<td>2</td>
<td>75%</td>
<td></td>
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<tr>
<td>EN 3</td>
<td>Student Life</td>
<td>Identifies sustainability-related student co-curricular programs and initiatives</td>
<td>Student Life, Physical Plant Sustainability, SES</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>EN 4</td>
<td>Outreach materials and publications</td>
<td>Identifies university outreach materials that engage and educate the campus community on sustainability</td>
<td>Physical Plant Sustainability, University Relations</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>EN 5</td>
<td>Outreach campaign</td>
<td>Compiles recent sustainability-related outreach campaigns that yielded measurable results</td>
<td>Physical Plant Sustainability</td>
<td>4.0</td>
<td>4.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>EN 6</td>
<td>Assessing sustainability culture</td>
<td>Identifies assessments used by the institution to understand sustainability culture</td>
<td>OAFA</td>
<td>1.0</td>
<td>1.0</td>
<td>100%</td>
<td></td>
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<tr>
<td>EN 7</td>
<td>Employee education program</td>
<td>Captains understanding of ongoing peer-to-peer sustainability programs for employees</td>
<td>Physical Plant Sustainability</td>
<td>0.0</td>
<td>3.0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>EN 8</td>
<td>Employee orientation</td>
<td>Determines how many new employees are offered sustainability outreach and guidance materials during orientation</td>
<td>Human Resources (HR)</td>
<td>0.0</td>
<td>1.0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>EN 9</td>
<td>Staff professional development</td>
<td>Identifies professional development and training opportunities in sustainability for non-academic staff</td>
<td>Physical Plant Sustainability, Workplace Learning and Development</td>
<td>1.0</td>
<td>2.0</td>
<td>50%</td>
<td></td>
</tr>
</tbody>
</table>
PUBLIC ENGAGEMENT

Engagement in problem-solving with UMass Amherst’s expanded community and organizations in the governmental, nonprofit, and for-profit sectors encourages widespread solutions to sustainability challenges.

The Northeast Center for Coastal Resilience (NCCR) serves as a regional knowledge hub to provide actionable coastal science, inform local decision-making, support sustainable economic development, and facilitate strategic regional collaborations. Leveraging world-class scientists from public universities, the Center aims to be a catalyst, accelerating resilience, adaptation planning, and a just blue economy in New England. In 2021, the NCCR conducted a climate resilience survey of Massachusetts municipalities with the goal of aligning the Center’s activities with the actual regional needs of municipalities and decision makers.

Identify solutions to return student community service hours to pre-pandemic levels
Measure continuing education data in future STARS reports using a consistent methodology
Serve as a peer reviewer of another institution’s sustainability data

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

<table>
<thead>
<tr>
<th>STARS credit</th>
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<tbody>
<tr>
<td>EN 10</td>
<td>Community partnerships</td>
<td>Highlights formal partnerships between the university and community organizations to advance sustainability</td>
<td>SES, Physical Plant Sustainability</td>
<td>5.0</td>
<td>5.0</td>
<td>100%</td>
<td></td>
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<tr>
<td>EN 11</td>
<td>Inter-campus collaboration</td>
<td>Identifies collaborations with other colleges and universities to support and build the campus sustainability community</td>
<td>Physical Plant Sustainability</td>
<td>5.0</td>
<td>5.0</td>
<td>100%</td>
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</tr>
<tr>
<td>EN 12</td>
<td>Continuing education</td>
<td>Identifies continuing education courses and programs that are sustainability-related</td>
<td>SES</td>
<td>5.0</td>
<td>5.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>EN 13</td>
<td>Community service</td>
<td>Calculates student engagement in community service and identity formal programs that support employee volunteering</td>
<td>OAPA, CASL: Engagement and Service-Learning</td>
<td>1.4</td>
<td>5.0</td>
<td>27%</td>
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<tr>
<td>EN 14</td>
<td>Participation in public policy</td>
<td>Identifies the institution’s advocacy for public policies that support campus sustainability or that otherwise advance sustainability</td>
<td>University Relations; Physical Plant Sustainability</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>EN 15</td>
<td>Trademark licensing</td>
<td>Describes how the institution promotes labor rights and sustainable production of its trademarked products</td>
<td>Auxiliary Enterprises</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>IN 47</td>
<td>Innovation A</td>
<td>Open-ended credit; UMass chose to highlight the Art Sustainability Activism partnership</td>
<td>SES, Fine Arts Center</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

The UMass Clean Energy Extension (CEE) developed a Community Planning for Solar Toolkit to empower municipal governments with the knowledge and tools to plan proactively for solar development in their communities. They also provide a resource to reduce market barriers and accelerate the adoption of clean energy for Massachusetts cities and towns, businesses, institutions, farms, low-income and multi-unit housing, and others.

UMass Amherst is an active member of the Leading By Example (LBE) Council, an initiative of the Massachusetts Department of Energy Resources. The LBE Council provides public policy guidance and guides the development of legislation and ordinances, including energy efficiency, greenhouse gas emissions, green buildings, and sustainable transportation in Massachusetts.
With support from the UMass community, our carbon-zero project will transition the campus to 100 percent renewable energy as we build a new infrastructure that will sustain a net-zero carbon emissions campus energy system for generations to come.

Our energy transition efforts intensified two years ago when Chancellor Kumble Subbaswamy created a campus Carbon Mitigation Task Force and charged it with finding out if, how, and how quickly UMass Amherst could achieve 100 percent reliance on renewable energy sources for heating, cooling, and electricity usage on our campus. We formed a consulting team composed of engineers and other experts, received input from hundreds of staff, faculty, and students, and made a rigorous assessment of the work needed.

The team concluded that carbon zero is indeed technologically achievable and outlined a path to reach carbon neutrality many years ahead of the 2050 target set by the Commonwealth of Massachusetts to decarbonize statewide energy systems.

Our recent feasibility study quantified the vast advantages of revolutionizing the campus energy system. Seventy percent of the energy consumed by our campus is used to heat buildings with steam. A new energy system would require 65 percent less energy, lowering operational expenses by about 20 percent, even while accounting for projected campus growth.

**HIGHLIGHT: UMASS CARBON ZERO**

**MISSION**

“As a global leader in research, entrepreneurship, and innovation, UMass Amherst must seize our unparalleled opportunity to limit the climate crisis in our own community and throughout the world and to educate the next generation of leaders in sustainability.”

**CURRENT INITIATIVES**

**LIVING LABORATORIES**

As one of the nation’s top research universities, a campus-wide living, learning, and research component will be integral to UMass Carbon Zero. Living Lab participants will engage in the community, share best practices, and help to ensure that our research and teaching are guided by a deep understanding of justice, equity, diversity, and inclusion issues.

**SOLAR POWER**

We are a leader in on-campus solar, with five parking canopy systems and five rooftop systems that produce 10 million kilowatts of renewable electricity annually, the equivalent to powering 1,430 homes.

**CARBON LITERACY PROJECT**

UMass Amherst is the first university in the United States to offer this international, award-winning program. Participants gain an understanding of the science of the climate crisis, environmental justice issues, climate mitigation tools, high impact solutions, communication strategies, and ways to take action.
AIR, CLIMATE, AND ENERGY

University campuses often function as small cities and have the carbon emissions to match their scale. UMass Amherst is in a unique position to model innovative solutions for carbon reduction that make a big impact in both emissions and in the community.

Following a multi-year planning process, UMass Amherst launched UMass Carbon Zero, committing to powering the campus with 100 percent renewable energy. Given the challenges posed by UMass' s large, historic campus and cold climate, the highest-impact component of the institution’s transition will be a large-scale conversion of the campus energy infrastructure. This will include a transition from fossil-fueled steam production to a modern, hot-water heating system paired with geothermal heating and cooling, as well as energy storage from the rapidly greening grid.

BY THE NUMBERS

38% reduction in total source energy consumption per unit of floor area from a 2004 baseline

44% reduction in adjusted net Scope 1 and Scope 2 GHG emissions per weighted campus user from a 2004 baseline

Complete a full Scope 3 greenhouse gas emissions inventory

Track air pollutant emissions from one additional source, such as off-site electricity production

Push for all new building space to be minimum LEED Gold certified

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT
FOOD AND DINING

UMass Amherst can wield its large purchasing power to support environmentally friendly and humane farming methods and local economies. These choices reduce environmental impacts, preserve regional farmland, improve local food security, support resilient food systems, and reduce food waste.

UMass Dining has been voted number one for Best Campus Food by the Princeton Review six years in a row while working to meet the Real Food Challenge (met in 2020) and focusing on purchasing sustainably or ethically certified food and beverages. Nineteen and a half percent of food and beverage purchases met these criteria in 2022, putting UMass Amherst in the top twenty AASHE institutions.

In the spring of 2022, UMass launched an A-E carbon rating system for Dining Commons menu options. This analysis is conducted by My Emissions, a third-party consultant that analyzes recipes by ingredient and amount.

UMass sources fresh produce in the summer and fall and maximizes its longevity using the Individually Quick Frozen technique. In the winter, UMass Dining uses locally sourced meat and dairy, as well as storage crops such as squash, root vegetables, apples, greens, and mushrooms. UMass Dining also purchases from four-season farmers who use extended growing season techniques.

To reduce food waste, UMass Dining supports the UMass student chapter of the Food Recovery Network, which recovers food and provides meals to a local homeless shelter during the academic year. UMass Dining also repurposes food into new menu items whenever possible and hosts several educational events to raise awareness and reduce post-consumer waste.

<table>
<thead>
<tr>
<th>STARS credit</th>
<th>Description</th>
<th>Data holder</th>
<th>Score</th>
<th>Total</th>
<th>% achieved</th>
<th>Change from 2020</th>
<th>Comparison to peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 7</td>
<td>Food and beverage purchasing</td>
<td>Compiles an inventory of food and beverage purchases that are sustainably or ethically produced and/or plant-based</td>
<td>Auxiliary Services: Dining Sustainably</td>
<td>2.4</td>
<td>6.0</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>OP 8</td>
<td>Sustainable dining</td>
<td>Describes programs and initiatives to support sustainable food systems and minimize food waste</td>
<td>Auxiliary Services: Dining Sustainably</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

1. NO POVERTY
2. ZERO HUNGER
3. GOOD HEALTH AND WELL-BEING
4. QUALITY EDUCATION
5. GENDER EQUALITY
6. CLEAN WATER AND SANITATION
7. AFFORDABLE AND RENEWABLE ENERGY
8. DECENT WORK AND ECONOMIC GROWTH
9. INDUSTRY, INNOVATION AND INFRASTRUCTURE
10. REDUCE POVERTY IN URBAN AND RURAL AREAS
11. MAKE SUSTAINABLE CITIES AND COMMUNITIES
12. ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL
13. ACTION ON CLIMATE CHANGE
14. LIFE below ZERO
15. LIFE ON LAND
16. LIFE UNDERWATER
17. STRONG, SUSTAINABLE AND INCLUSIVE INTEGRATED CIRCULAR ECONOMIES
18. PARTNERSHIPS FOR THE GOAL
Grounds and Water

Campus grounds can be maintained while minimizing the use of toxic chemicals, protecting wildlife habitat, conserving water, and effectively managing rainwater.

UMass Amherst maintains the extensive Frank A. Waugh Arboretum, which covers the core campus and is home to 8,000 actively managed trees of more than 350 species. The institution also runs an interactive website that displays information about the location, species, health history, canopy size, champion points, and historic value of the trees in the Arboretum. In 2015, UMass Amherst became recognized by the Arbor Day Foundation as a Tree Campus USA for its commitment to effective urban forest management.

UMass Amherst has also installed rain gardens across campus to filter stormwater runoff, alleviate problems associated with flooding and drainage, recharge the groundwater supply, provide habitat and food for wildlife, and enhance campus beauty.

Manage all land using organic practices

By the Numbers

- 768 acres managed organically
- 180 acres managed using an Integrated Pest Management program
- 12 acres managed conventionally

U.N. Sustainable Development Goal Alignment

Manage all land using organic practices

By the Numbers

- 768 acres managed organically
- 180 acres managed using an Integrated Pest Management program
- 12 acres managed conventionally

U.N. Sustainable Development Goal Alignment
SUSTAINABLE PROCUREMENT

In fiscal year 2018, UMass Amherst contributed $2.5 billion in economic activity to the state’s economy. Each purchasing decision UMass Amherst makes influences the local economy, presenting an opportunity to choose environmentally and socially preferable products and support companies with strong commitments to sustainability, the elimination of unsafe working conditions, and the alleviation of poverty.

UMass Amherst participates in the Western Mass Anchor Collaborative (WMAC), which has established multi-year targets to increase local procurement opportunities from women- and minority-owned businesses. The institution is also a member of the Worker Rights Consortium (WRC) and the Fair Labor Association (FLA), ensuring any branded merchandise purchased and sold is created using fair labor practices.

UMass also has an institution-wide sustainable purchasing policy and employs life cycle cost analyses (LCCA) when evaluating all energy- and water-using products, systems, and building components.

BY THE NUMBERS

- 72% of electronics purchases are EPEAT Gold certified
- 42% of cleaning and janitorial product purchases are sustainably certified
- 32% of office paper purchases contains 30–49% post-consumer recycled material

UMASS AMHERST | 26

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<tr>
<th>STARS credit</th>
<th>Description</th>
<th>Data holder</th>
<th>Score</th>
<th>Total</th>
<th>% achieved</th>
<th>Change from 2020</th>
<th>Comparison to peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 11</td>
<td>Sustainable procurement</td>
<td>Describes sustainability criteria applied when making procurement decisions</td>
<td>Unified Procurement Services (UPST)</td>
<td>2.5</td>
<td>3.0</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>OP 12</td>
<td>Electronics purchasing</td>
<td>Reports the institution’s purchases of environmentally and socially preferable electronic products</td>
<td>Admin &amp; Finance Services</td>
<td>0.9</td>
<td>1.0</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>OP 13</td>
<td>Cleaning and janitorial purchasing</td>
<td>Reports the institution’s purchases of environmentally and socially preferable cleaning and janitorial products</td>
<td>Admin &amp; Finance Services</td>
<td>0.4</td>
<td>1.0</td>
<td>42%</td>
<td></td>
</tr>
<tr>
<td>OP 14</td>
<td>Office paper purchasing</td>
<td>Reports the institution’s purchases of environmentally and socially preferable office paper products</td>
<td>Admin &amp; Finance Services</td>
<td>0.1</td>
<td>1.0</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>IN 2</td>
<td>Anchor institution network</td>
<td>Highlights participation in external networks to develop and share strategies for deploying higher education’s resources to enhance the wellbeing of the communities they serve</td>
<td>UMass News Office</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
<td></td>
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</tbody>
</table>

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

- Institute IT and equipment sustainability purchasing criteria requiring all new electronic purchases to be EPEAT Gold
- Increase the purchase of sustainably-certified cleaning products
- Increase the purchase of FSC-certified paper products
Transportation-related emissions and pollutants contribute to health problems which, due to disproportionate exposure, are more pronounced in low-income communities near major transportation corridors. UMass Amherst can positively impact human and ecological health and support local economies by modeling sustainable transportation systems.

Multiple Western Massachusetts communities contracted with Bewegen Technologies to bring bike share facilities to the region in 2018. To meet the Pioneer Valley’s unique challenges, ValleyBike Share is designed to promote short bike trips within core communities, where clusters of large employers, colleges, shopping, tourist destinations, and residents can readily be connected. Six of 80 total stations are located on the UMass Amherst campus. The system, one of the largest such programs in the world, has 760 electric-assisted bicycles available. The campus has significant electric vehicle (EV) charging infrastructure on campus for all visitors and permit holders. There are 46 total Level II charging heads on the main UMass Amherst campus and eight at the Mount Ida campus.

### BY THE NUMBERS

<table>
<thead>
<tr>
<th>Credit</th>
<th>Description</th>
<th>Data holder</th>
<th>Score</th>
<th>Total</th>
<th>% achieved</th>
<th>Change from 2020</th>
<th>Comparison to peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 15</td>
<td>Campus fleet</td>
<td>Transportation Services</td>
<td>0.2</td>
<td>1.0</td>
<td>22%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OP 16</td>
<td>Commute modal split</td>
<td>Parking Services</td>
<td>3.4</td>
<td>5.0</td>
<td>67%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OP 17</td>
<td>Support for sustainable transportation</td>
<td>Physical Plant Sustainability; Transportation Services</td>
<td>1.0</td>
<td>1.0</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

- 22% of campus fleet vehicles are alternatively fueled
- 74% of the student population commutes sustainably
- 39% of UMass employees commute sustainably

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**Replace retired, conventionally fueled vehicles with alternatively fueled vehicles.**

**Research obstacles to sustainable commuting.**

**Separate employee and student responses in commuter surveys for more accurate data.**
WASTE MANAGEMENT

Waste reduction mitigates the need to extract new materials from the earth and reduces waste flow to incinerators and landfills that contaminate air and water, produce greenhouse gas emissions, and result in disproportionate negative impacts on low-income communities.

At UMass Amherst, a campus-wide waste assessment study was commissioned by the Office of Waste Management in 2019–2020. The process evaluated campus waste system infrastructure and education and engagement programs. The study also explored compost program expansion options and included a financial and economic analysis. The study produced high-level recommendations from the consultant to help the campus achieve its zero waste goals over the next five to ten years.

The New2U Sustainable Move-Out Collection and Move-In Tag Sale is a waste-reduction program run by students and staff. Volunteers and campus staff collect unwanted items such as clothing, futons, lamps, and television sets during spring move-out periods, and resell these items in the fall during move-in periods. Now in its seventh year, New2U is able to sell thousands of new or gently used items back to students, faculty, and staff at affordable prices. Since the program’s inception, New2U has been able to divert more than 80,000 pounds of items from being sent to a landfill.

BY THE NUMBERS

30% reduction in total waste generated per weighted campus user from a 2009 baseline

65% of materials diverted from the landfill in 2022

STARS credit Description Data holder Score Total % achieved Change from 2020 Comparison to peers

OP 18 Waste minimization and diversion: Complex data on the weight of materials recycled, composted, donated to, sold, and disposed in a landfill or incinerator
Physical Plant Sustainability, Office of Waste Management, Facilities and Campus Services 5.3 8.0 66% ↑

OP 19 Construction and demolition waste diversion: Explain efforts to divert non-hazardous construction and demolition waste from the landfill and/or incinerator
Campus Planning 0.7 1.0 69% ↓

OP 20 Hazardous waste management: Determines the level of responsibility taken towards using sustainability-friendly practices within the hazardous waste department
Environmental Health and Safety (EH&S) 1.0 1.0 100% ↑

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation and infrastructure
10. Reduced inequalities
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace and justice
17. Partnerships for the goals
Coordination and planning provide the infrastructure to foster sustainability, establish priorities, guide decision making and budgeting, and clarify a vision for a sustainable future.

UMass Amherst formed a cross-campus Sustainability Strategy Working Group (SSWG) in 2021 to help develop a unifying vision of sustainability research, education, and engagement for UMass. This working group includes more than 30 faculty members from across all nine academic colleges. The working group is transdisciplinary in nature and collaborative in practice. The working group’s role includes leading a collaborative, cross-campus engagement process for broad input.

Hire a new full-time sustainability staff member
Add an existing staff member at the university to the STARS coordination team
Update SIP with new goals and strategies

Following a multi-year planning process, UMass Amherst launched UMass Carbon Zero, committing to powering the campus with 100 percent renewable energy. This complex, large-scale undertaking will have ramifications far beyond campus. UMass Amherst will be a leader of carbon mitigation efforts in the Commonwealth of Massachusetts and UMass Carbon Zero will serve as a model for other large research universities as they embark upon their own energy transitions.

The UMass Foundation divested from all direct holdings in fossil fuels in 2016. The Foundation’s Investment Policy includes environmental, social, and governance (ESG) criteria; 0.11 percent of the investment pool is in positive sustainability investments.

### U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

<table>
<thead>
<tr>
<th>SDG</th>
<th>Description</th>
<th>Data holder</th>
<th>Score</th>
<th>Total</th>
<th>% achieved</th>
<th>Change from 2020</th>
<th>Comparison to peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Sustainability coordination</td>
<td>Describes sustainability committees, offices and/or officers that advise on and implement sustainable campus policies and programs</td>
<td>Physical Plant Sustainability</td>
<td>1.0</td>
<td>1.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Sustainability planning</td>
<td>Reports on published sustainability plan and the inclusion of sustainability in the institution’s highest guiding document</td>
<td>Physical Plant Sustainability</td>
<td>5.0</td>
<td>4.0</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>Induce and participatory governance</td>
<td>Reports on formal governance bodies and diversity in the institution’s highest governing body</td>
<td>Student Government Association; Board of Trustees</td>
<td>2.1</td>
<td>3.0</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>Reporting assurance</td>
<td>Submission independent affirmation that the information in an institution’s STARS report meets credit criteria</td>
<td>GroenerU</td>
<td>1.0</td>
<td>1.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>9.9</td>
<td>Committee on investor responsibility</td>
<td>Identifies a formally established and active committee on investor responsibility (CIR)</td>
<td>UMass Foundation</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>10.10</td>
<td>Sustainable investment</td>
<td>Identifies the institution’s positive sustainability investments and investor engagement policies and practices</td>
<td>UMass Foundation</td>
<td>1.7</td>
<td>5.0</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>11.11</td>
<td>Investment disclosure</td>
<td>Identifies a publicly accessible snapshot of investment holdings</td>
<td>UMass Foundation</td>
<td>0.0</td>
<td>1.0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>11.11</td>
<td>External reporting assurance</td>
<td>Recognizes engagement in an external, comprehensive data quality audit prior to a STARS submission</td>
<td>GroenerU</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
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</tbody>
</table>
DIVERSITY, AFFORDABILITY, AND WELL-BEING

Higher education opens doors to opportunities that create a more equitable world and must be accessible to all regardless of race, gender, religion, socioeconomic status, and other differences.

UMass Amherst’s Office of Equity and Inclusion (OEI) was launched in fall 2017. The OEI is responsible for nurturing a campus-wide culture of inclusion, developing an affirmative emphasis on workplace climate, conducting campus-wide assessments of campus climate for data-driven strategic actions, and supporting diversity, inclusivity, and equity goals within schools, colleges, and administrative and executive units. Initiatives include:

- A campus climate survey conducted every four years
- Campus Climate Improvement grants
- UMass Employee Resource Groups (ERGs)
- Annual Martin Luther King Day of Racial Healing events
- An annual JEDI conference
- Regular trainings and workshops for students and employees
- Learning Communities book groups
- The JEDI Collaborative, a resource and information sharing group
- Make DEI trainings mandatory for academic staff
- Institute a mandatory living wage for all employees at UMass
- Increase on-campus food security by institutionalizing a campus food pantry

BY THE NUMBERS

83% of need is met for students awarded need-based aid
36% of students graduate without student loan debt
26% of entering students are low-income
80% of low-income students graduate

STARS credit Description Data holder Score Total % achieved Change from 2020 Comparison to peers
PA.5 Diversity and equity coordination Identifies a diversity and equity entity that advances and implements diversity-based campus policies and programs. Office of Equity and Inclusion (OEI) 1.9 2.0 95% 
PA.6 Assessing diversity and equity Identifies a structured assessment process to improve DEI on campus. OEI 1.0 1.0 100% 
PA.7 Support for under-represented groups Completes initiatives that support underrepresented groups and foster a more diverse and inclusive campus community. OEL HR 3.0 3.0 100% 
PA.8 Affordability and access Completes initiatives that make the institution affordable to low-income students. President’s Office 3.0 4.0 75% 
PA.12 Employee compensation Reports on the compensation provided to employees relative to the living wage. HR 0.0 3.0 0% 
PA.13 Employee satisfaction Measures employee satisfaction and engagement assessments. OEI 0.4 1.0 42% 
PA.14 Wellness programs Describes wellness and employee assistance programs. HR; Student Life 1.9 1.9 100% 
PA.15 Workplace health and safety Identifies an occupational health and safety system and work-related ill health. EH&S 1.3 2.0 67% 
IN 4 Campus pride index Recognizes rating at above mid-level by the Campus Pride Index. Campus Pride Index Website 0.5 0.5 100% 
IN 5 Diversity and equity recognition Recognizes leadership role in improving diversity, equity, and inclusion on campus and in higher education. OEI 0.5 0.5 100% 
U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation, and infrastructure
10. Reduced inequalities
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice, and strong institutions
17. Partnerships for the goals
APPENDIX A: U.N. SUSTAINABLE DEVELOPMENT GOALS

<table>
<thead>
<tr>
<th>U.N. S.D.G.</th>
<th>Content captured in AASHE STARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>No poverty</td>
<td>Institutional plans and administrative policies that support low-income students</td>
</tr>
<tr>
<td></td>
<td>Payment of a living wage to employees, employees on-site contractors, and student workers</td>
</tr>
<tr>
<td></td>
<td>Institutional procurement of responsibly produced goods that ensure fair labor rights and support disadvantaged businesses</td>
</tr>
<tr>
<td>Zero hunger</td>
<td>Teaching and research, student and employee engagement, community partnerships, and advocacy related to ending hunger</td>
</tr>
<tr>
<td></td>
<td>Hosting a community garden on institution-owned land</td>
</tr>
<tr>
<td>Good health and well-being</td>
<td>Efforts to reduce air pollution and use of hazardous chemicals</td>
</tr>
<tr>
<td></td>
<td>Health promotion via building design, construction and maintenance</td>
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<td></td>
<td>Sustainability learning outcomes, academic programs in sustainability, and applied learning for sustainability</td>
</tr>
<tr>
<td></td>
<td>Peer-to-peer sustainability education programs</td>
</tr>
<tr>
<td>Quality education</td>
<td>Institutional plans and administrative policies that facilitate access to higher education</td>
</tr>
<tr>
<td></td>
<td>Support programs for underrepresented groups</td>
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<tr>
<td></td>
<td>Programs that increase accessibility to low-income students</td>
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<tr>
<td>Gender equality</td>
<td>Institutional plans and administrative policies that aim to end discrimination</td>
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<td></td>
<td>Participation of women on the institution’s highest governing body</td>
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<tr>
<td>Clean water and sanitation</td>
<td>Operational policies and plans that relate to water use efficiency</td>
</tr>
<tr>
<td></td>
<td>Policies and programs to reduce stormwater runoff and reduce water pollution</td>
</tr>
<tr>
<td></td>
<td>Reducing water pollution by purchasing products (e.g., food, paper and cleaning chemicals) certified to meet sustainability criteria and through waste minimization</td>
</tr>
<tr>
<td>Affordable and clean energy</td>
<td>Facilitating access to clean energy research and technology through support for sustainability research and open access to research</td>
</tr>
<tr>
<td></td>
<td>Operational policies and institutional plans that aim to increase the share of renewables in the campus’ energy mix and increase campus energy efficiency</td>
</tr>
<tr>
<td></td>
<td>Investments in clean energy companies</td>
</tr>
<tr>
<td>Decent work and economic growth</td>
<td>Institutional procurement of responsibly produced goods that ensure fair labor rights and support disadvantaged businesses</td>
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<td></td>
<td>Workplace health and safety programs</td>
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<td>Ensure apparel is produced under fair conditions</td>
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<td></td>
<td>Payment of a living wage and requirements that major campus contracts pay a living wage</td>
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<tr>
<td></td>
<td>Investments in compliance that provide decent work</td>
</tr>
</tbody>
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U.N. S.D.G. | Content captured in AASHE STARS |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Industry, innovation, and infrastructure</td>
<td>Facilitating open access to research</td>
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<td></td>
<td>Energy efficiency of campus infrastructure</td>
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<tr>
<td>Reduced inequalities</td>
<td>Institutional procurement of responsibly produced goods that ensure fair labor rights and support disadvantaged businesses and small and medium-sized enterprises</td>
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<tr>
<td></td>
<td>Make the institution more accessible and welcoming to low-income students and underrepresented groups</td>
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<td></td>
<td>Limiting the compensation of the highest paid individual relative to the compensation of the lowest paid individual</td>
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<tr>
<td>Sustainable cities and communities</td>
<td>Operational policies and plans that support sustainable transport on campus, reduce air pollution and minimize waste</td>
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<td></td>
<td>Protection of natural spaces on campus</td>
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<tr>
<td>Responsible consumption and production</td>
<td>Institutional procurement of responsibly produced goods, focusing especially on food, paper, electronics, and cleaning products</td>
</tr>
<tr>
<td></td>
<td>Efforts to reduce air pollution and waste on campus</td>
</tr>
<tr>
<td></td>
<td>Investments in companies engaged in responsible consumption and production</td>
</tr>
<tr>
<td>Climate action</td>
<td>Operational policies and institutional plans that focus on reducing greenhouse gases to mitigate climate change</td>
</tr>
<tr>
<td></td>
<td>Educating and raising awareness about climate change</td>
</tr>
<tr>
<td></td>
<td>Investments in companies that take climate action</td>
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<tr>
<td>Life below water</td>
<td>Operational policies and institutional plans that reduce marine pollution from land-based activities, such as properly managing waste and runoff</td>
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<td>Institutional procurement of sustainably sourced seafood</td>
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<tr>
<td>Life on land</td>
<td>Purchasing wood products from sustainably managed forests</td>
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<td></td>
<td>Institutional plans or programs in place to protect or positively affect species habitats and/or environmentally sensitive areas</td>
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<tr>
<td>Peace, justice and strong institutions</td>
<td>Participatory and inclusive mechanisms to engage campus and community stakeholders in governance of the institution</td>
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<td></td>
<td>Institutional plans that promote or commit to engaging with the SDGs</td>
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</tbody>
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**APPENDIX B: KEY TEAMS AND ABBREVIATIONS**

### DEFINITIONS

**Carbon neutral**
Having no greenhouse gas (GHG) emissions, to be achieved by either eliminating net GHG emissions, or by minimizing GHG emissions as much as possible, and using carbon offsets or other measures to mitigate the remaining emissions.

**Climate change**
A change in global or regional climate patterns, or a particular climate phenomenon, from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

**Diversion rate**
The total amount (reflected as a percentage) of a material, diverted from disposal through waste prevention, recycling, or reuse.

**Environmental and climate justice**
"Climate justice" is a term, and more than that, a movement, that acknowledges climate change can have differing social, economic, public health, and other adverse impacts on underprivileged populations. Advocates for climate justice are striving to have these inequities addressed head-on through long-term mitigation and adaptation strategies.

**Electric vehicle**
Any vehicle that gets its energy from electricity, such as battery or fuel cell electric vehicles.

**Environmental, social, and governance, which is a framework**
The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.

**Fair Labor Association**
Any gas that has the property of absorbing infrared radiation (net heat energy) emitted from Earth’s surface and reradiating it back to Earth’s surface, thus contributing to the greenhouse effect.

**Forest Stewardship Council**
A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

**Greenhouse gases**
Any gas that has the property of absorbing infrared radiation (net heat energy) emitted from Earth’s surface and reradiating it back to Earth’s surface, thus contributing to the greenhouse effect.

**Green building**
As a living lab, campus buildings and grounds become teaching tools to further sustainability learning. By blending campus infrastructure and operations with multi-disciplinary student learning projects, students are able to gain insight into campus sustainability challenges and even contribute to solutions.

**Indirect GHG emissions**
Indirect GHG emissions that are a consequence of activities that take place within the organizational boundaries of the institution, but that occur at sources owned or controlled by another entity. Scope 2 emission sources include purchased electricity, purchased heating, purchased cooling, and purchased steam.

**Learning laboratory**
A path of continuous improvement where our actions protect and enhance the human and natural resources needed for future generations to enjoy a quality of life equal to or greater than our own.

**Life Cycle Analysis**
A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

**Life-Cycle Cost Analysis**
The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.

**Maintenance**
A path of continuous improvement where our actions protect and enhance the human and natural resources needed for future generations to enjoy a quality of life equal to or greater than our own.

**Sustainability**
The total amount (reflected as a percentage) of a material, diverted from disposal through waste prevention, recycling, or reuse.

**Zero waste**
The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.

### ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ASHIE STARS</td>
<td>The Association for the Advancement of Sustainability in Higher Education (ASHIE) runs the Sustainability, Tracking, Assessment and Rating System (STARS)</td>
</tr>
<tr>
<td>CEE</td>
<td>Clean Energy Extension</td>
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<tr>
<td>CLP</td>
<td>Carbon Literacy Project</td>
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<tr>
<td>EPEAT</td>
<td>Electronic Product Environmental Assessment Tool</td>
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<tr>
<td>ERG</td>
<td>Employee Resource Group</td>
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<td>FSC</td>
<td>Forest Stewardship Council</td>
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<tr>
<td>FLA</td>
<td>Fair Labor Association</td>
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<tr>
<td>FSC</td>
<td>Forest Stewardship Council</td>
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<tr>
<td>FTE</td>
<td>Full-time equivalent</td>
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<tr>
<td>GHG</td>
<td>Greenhouse gas</td>
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<tr>
<td>IPM</td>
<td>Integrated Pest Management</td>
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<tr>
<td>IPM</td>
<td>Integrated Pest Management</td>
</tr>
<tr>
<td>LCCA</td>
<td>Life-Cycle Cost Analysis</td>
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<tr>
<td>LEED</td>
<td>Leadership in Energy and Environmental Design</td>
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<tr>
<td>NCCR</td>
<td>Northeastern Center for Resilience</td>
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<tr>
<td>OEU</td>
<td>Office of Equity and Inclusion</td>
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<tr>
<td>SIP</td>
<td>Sustainability Integration Project</td>
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<tr>
<td>SES</td>
<td>School of Earth and Sustainability</td>
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<tr>
<td>SSWG</td>
<td>Sustainability Strategy Working Group</td>
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<td>UN’s SDGs</td>
<td>United Nations Sustainable Development Goals</td>
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<tr>
<td>WMAC</td>
<td>Western Mass Anchor Collaborative</td>
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<tr>
<td>WHRC</td>
<td>Western Mass Anchor Collaborative</td>
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