2023

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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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 granting 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 and create more awareness for the work UMass Amherst is doing. 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
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.

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

2010
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 wins the 2017 Second Nature Climate Leadership Award in the ‘Doctorate Granting Institution’ category

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

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

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

2022
UMass Amherst becomes the largest food-service provider in the nation to sign on to the Real Food Campus Commitment

2023
UMass Amherst wins the prestigious 2014 Second Nature Climate Leadership Award in the ‘Doctorate Granting Institution’ category

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

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

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

Institute institution-wide undergraduate sustainability focused learning outcomes

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

Administer annual sustainability literacy assessments to track changes in sustainability knowledge

<table>
<thead>
<tr>
<th>STARS credit</th>
<th>Description</th>
<th>Data holder</th>
<th>Score 2020</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>
<td>8.0</td>
<td>33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 3</td>
<td>Undergraduate program</td>
<td>SES</td>
<td>3.0</td>
<td>3.0</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC 4</td>
<td>Graduate program</td>
<td>SES</td>
<td>3.0</td>
<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 (OAP A)</td>
<td>4.0</td>
<td>4.0</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<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>
<td></td>
</tr>
<tr>
<td>AC 8</td>
<td>Campus as a living lab</td>
<td>SES; Physical Plant Sustainability</td>
<td>4.0</td>
<td>4.0</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IN 38</td>
<td>Sustainability course designation</td>
<td>SES</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT
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.

### Research and Scholarship

| AC 9 | Research and scholarship | Examine the percentage of employees and academic departments that conduct sustainability research | SES | 11.1 | 12.0 | 93% | 
| AC 10 | Support for sustainability research | Recognize institutions that incentivize students and academic staff to conduct sustainability research | SES | 4.0 | 4.0 | 100% | 
| AC 11 | Open access to research | Recognize institutions that facilitate open access publishing | UMass Libraries | 2.0 | 2.0 | 100% | 
| IN 41 | Textbook affordability | Recognize institutions that support higher education affordability and open digital scholarship by encouraging the use of free and low-cost textbooks | UMass Libraries | 0.5 | 0.5 | 100% | 

### U.N. Sustainable Development Goal Alignment

1. **Sustainable Cities and Communities**: 
2. **Ensure availability and affordable housing**: 
3. **Sustainable cities and communities**: 
4. **Quality education**: 
5. **Water and sanitation**: 
6. **Clean energy**: 
7. **Climate action**: 
8. **Climate action**: 
9. **Climate action**: 
10. **Climate action**: 
11. **Climate action**: 
12. **Climate action**: 
13. **Climate action**: 
14. **Climate action**: 
15. **Climate action**: 
16. **Climate action**: 
17. **Climate action**: 
18. **Climate action**: 
19. **Climate action**: 
20. **Climate action**:

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<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 9</td>
<td>Research and scholarship</td>
<td>Examine 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</td>
<td>Recognize 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</td>
<td>Recognize 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</td>
<td>Recognize 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>
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</table>

### By the Numbers

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

**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.**

---

**UMASS AMHERST | 12**

**2023 STARS REPORT | 13**
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.

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<th>Change from 2020</th>
<th>Comparison to peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 1 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>
<td></td>
</tr>
<tr>
<td>EN 2 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>
<td></td>
</tr>
<tr>
<td>EN 3 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>
<td></td>
</tr>
<tr>
<td>EN 4 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>
<td></td>
</tr>
<tr>
<td>EN 5 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>
<td></td>
</tr>
<tr>
<td>EN 6 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>
<td></td>
</tr>
<tr>
<td>EN 7 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>
<td></td>
</tr>
<tr>
<td>EN 8 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>
<td></td>
</tr>
<tr>
<td>EN 9 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>
<td></td>
</tr>
</tbody>
</table>

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.

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT
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.

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

<table>
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<tr>
<th>STARS credit</th>
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<th>% achieved</th>
<th>Change from 2020</th>
<th>Comparison to peers</th>
</tr>
</thead>
<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>3.0</td>
<td>3.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>EN 11</td>
<td>Inter-campus collaboration</td>
<td>Identifies collaborations with other colleges and universities to support and help build the campus sustainability community</td>
<td>Physical Plant Sustainability</td>
<td>3.0</td>
<td>3.0</td>
<td>100%</td>
<td></td>
</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, CESC, Engagement and Service-Learning</td>
<td>1.4</td>
<td>5.0</td>
<td>25%</td>
<td></td>
</tr>
<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>
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<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.

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.”

HIGHLIGHT: UMASS CARBON ZERO

MISSION

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.

CURRENT INITIATIVES

LIVING LABORATORIES

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.

SOLAR POWER

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.

CARBON LITERACY PROJECT

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CARBON LITERACY PROJECT

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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

<table>
<thead>
<tr>
<th>Reductions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>38%</td>
<td>reduction in total source energy consumption per unit of floor area from a 2004 baseline</td>
</tr>
<tr>
<td>44%</td>
<td>reduction in adjusted net Scope 1 and Scope 2 GHG emissions per weighted campus user from a 2004 baseline</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>SDG</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Poverty</td>
</tr>
<tr>
<td>2</td>
<td>Zero Hunger</td>
</tr>
<tr>
<td>3</td>
<td>Good Health and Well-Being</td>
</tr>
<tr>
<td>4</td>
<td>Quality Education</td>
</tr>
<tr>
<td>5</td>
<td>Gender Equality</td>
</tr>
<tr>
<td>6</td>
<td>Clean Water and Sanitation</td>
</tr>
<tr>
<td>7</td>
<td>Affordable and Clean Energy</td>
</tr>
<tr>
<td>8</td>
<td>Decent Work and Economic Growth</td>
</tr>
<tr>
<td>9</td>
<td>Industry, Innovation and Infrastructure</td>
</tr>
<tr>
<td>10</td>
<td>Reduced Inequalities</td>
</tr>
<tr>
<td>11</td>
<td>Sustainable Cities and Communities</td>
</tr>
<tr>
<td>12</td>
<td>Responsible Consumption and Production</td>
</tr>
<tr>
<td>13</td>
<td>Climate Action</td>
</tr>
<tr>
<td>14</td>
<td>Life below Water</td>
</tr>
<tr>
<td>15</td>
<td>Life on Land</td>
</tr>
<tr>
<td>16</td>
<td>Peace and Justice</td>
</tr>
<tr>
<td>17</td>
<td>Partnerships for the Goals</td>
</tr>
</tbody>
</table>
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 when possible and hosts several educational events to raise awareness and reduce post-consumer waste.

Establish a reusable to-go ware program that can be universally accepted by all food service facilities.

Expand reusable dining ware to all food service facilities on campus with access to dishwashing capacity.

Reduce single-use food service items in all dining locations on campus.

<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>48%</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

UMASS AMHERST | 22

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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. Wauh 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.

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

BY THE NUMBERS

STARS Credit Description Data holder Score Total % Achieved Change from 2020 Comparison to peers

OP 9 Landscape management Quantifies the amount of the total managed grounds that are managed organically or in accordance with an Integrated Pest Management (IPM) program Physical Plant Sustainability, Landscapes Services 1.8 2.0 90% ▲

OP 10 Biodiversity Conducts an assessment to identify endangered and vulnerable species and areas of biodiversity importance on the institution’s land Physical Plant Sustainability, Landscapes Services 2.0 2.0 100% ▲ ▲

OP 21 Water use Reports on potable and non-potable water use Central Heating Plant 4.0 4.0 100% ▲ ▲

OP 22 Rainwater management Describes green infrastructure and low impact development (LID) practices to help mitigate stormwater run-off impacts Physical Plant Sustainability; Design & Construction Management; Campus Planning 2.0 2.0 100% ▲ ▲

IN 20 Grounds certification Highlights third party certification for the protection and promotion of biodiversity Physical Plant Sustainability 0.5 0.5 100% ▲ ▲
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.

### Institute IT and equipment sustainability purchasing criteria
- Require all new electronic purchases to be EPEAT Gold
- Increase the purchase of sustainably-certified cleaning products
- Increase the purchase of TSC-certified paper products

### 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

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

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.

The number of campus fleet vehicles that are hybrid, electric, and/or alternatively fueled is 22%.
The number of UMass employees who commute sustainably is 39%.
The number of students who commute sustainably is 74%.

BY THE NUMBERS

STARS CREDIT

<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 mode 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

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. Peaceful and inclusive societies
17. Partnerships for the goals

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, furniture, lamps, and televisions 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.

<table>
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</thead>
<tbody>
<tr>
<td>OP 18 Waste minimization and diversion</td>
<td>Compiles data on the weight of materials recycled, composted, donated-to-sold, and disposed in a landfill or incinerator</td>
<td>Physical Plant Sustainability, Office of Waste Management, Facilities and Campus Services</td>
<td>5.3</td>
<td>8.0</td>
<td>66%</td>
<td></td>
<td></td>
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<tr>
<td>OP 19 Construction and demolition waste diversion</td>
<td>Explains efforts to divert non-hazardous construction and demolition waste from the landfill and/or incinerator</td>
<td>Campus Planning</td>
<td>0.7</td>
<td>1.0</td>
<td>69%</td>
<td></td>
<td></td>
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<tr>
<td>OP 20 Hazardous waste management</td>
<td>Determines the level of responsibility taken towards using sustainability-friendly practices within the hazardous waste department</td>
<td>Environmental Health and Safety (EH&amp;S)</td>
<td>1.0</td>
<td>1.0</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT
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.

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

- **1. No poverty**
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- **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. Life below water**
- **14. Life on land**
- **15. Peace and justice, strong institutions**
- **16. Partnerships for the goals**

### STARS CREDITS AND COMPARISON TO PEERS

<table>
<thead>
<tr>
<th>PA</th>
<th>Sustainability coordination</th>
<th>Description</th>
<th>Data holder</th>
<th>Score</th>
<th>Total</th>
<th>% achieved</th>
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<th>Comparison to peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA 1</td>
<td>Sustainability planning</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>
<td>—</td>
</tr>
<tr>
<td>PA 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>5.0</td>
<td>100%</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>PA 3</td>
<td>Indicators 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>71%</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>PA 4</td>
<td>Reporting assurance</td>
<td>Submission independent affirmation that the information in an institution’s STARS report meets credit criteria</td>
<td>GreenerU</td>
<td>1.0</td>
<td>1.0</td>
<td>100%</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>PA 5</td>
<td>Consistency of monitoring and reporting</td>
<td>Identifies a formally established and active committee on investor responsibility (CID)</td>
<td>UMass Foundation</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>PA 6</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>
<td>—</td>
</tr>
<tr>
<td>PA 7</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>
<td>—</td>
</tr>
<tr>
<td>IN 9</td>
<td>External reporting assurance</td>
<td>Recognizes engagement in an external, comprehensive data quality audit prior to a STARS submission</td>
<td>GreenerU</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
<td>—</td>
<td>—</td>
</tr>
</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

Institute a mandatory living wage for all employees at UMass
Make JEDI trainings mandatory for academic staff

U.N. SUSTAINABLE DEVELOPMENT GOAL ALIGNMENT

<table>
<thead>
<tr>
<th>STARS credit</th>
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<th>Data holder</th>
<th>Score</th>
<th>Total % achieved</th>
<th>Change from 2020</th>
<th>Comparison to peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA 5</td>
<td>Diversity and equity coordination</td>
<td>Office of Equity and Inclusion (OEI)</td>
<td>1.9</td>
<td>2.0</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>PA 6</td>
<td>Assessing diversity and equity</td>
<td>OEI</td>
<td>1.0</td>
<td>1.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>PA 7</td>
<td>Support for under-represented groups</td>
<td>OEI, HR</td>
<td>3.0</td>
<td>3.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>PA 8</td>
<td>Affordability and access</td>
<td>Campus initiatives that make the institution affordable to lower-income students.</td>
<td>3.0</td>
<td>4.0</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>PA 12</td>
<td>Employee compensation</td>
<td>President’s Office</td>
<td>0.0</td>
<td>3.0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>PA 13</td>
<td>Employee satisfaction</td>
<td>OEI</td>
<td>0.4</td>
<td>1.0</td>
<td>42%</td>
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</tr>
<tr>
<td>PA 14</td>
<td>Wellness programs</td>
<td>HR, Student Life</td>
<td>1.0</td>
<td>1.0</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>PA 15</td>
<td>Workplace health and safety</td>
<td>EH&amp;HS</td>
<td>1.3</td>
<td>2.0</td>
<td>67%</td>
<td></td>
</tr>
<tr>
<td>IN 4</td>
<td>Campus pride index</td>
<td>Campus Pride Index Website</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>IN 9</td>
<td>Diversity and equity recognition</td>
<td>OEI</td>
<td>0.5</td>
<td>0.5</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
## 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 and student workers</td>
</tr>
<tr>
<td>Zero hunger</td>
<td>No provision of food to employees, or employees on-site contractors, and student workers</td>
</tr>
<tr>
<td>Good health and well-being</td>
<td>Teaching and research student and employee engagement, community partnerships, and advocacy related to ending hunger and promoting public health</td>
</tr>
<tr>
<td>Gender equality</td>
<td>Institutional plans and administrative policies that aim to end discrimination</td>
</tr>
<tr>
<td>Clean water and sanitation</td>
<td>Operational policies and programs that reduce water use efficiency and pollution and reduce storm water runoff and rainwater pollution</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>Decent work and economic growth</td>
<td>Institutional procurement of responsibly produced goods that ensure fair labor rights and support disadvantaged businesses and workplaces</td>
</tr>
<tr>
<td>Responsible consumption and production</td>
<td>Institutional procurement of responsibly produced goods, focusing especially on food, paper, electronics, and cleaning chemicals certified to meet sustainability criteria and through waste minimization</td>
</tr>
<tr>
<td>Sustainable cities and communities</td>
<td>Institutional plans or programs in place to protect or positively affect biodiversity and natural habitats and/or environmentally sensitive areas</td>
</tr>
<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>
</tr>
<tr>
<td>Partnerships for the goals</td>
<td>Programs and policies that facilitate open access to research</td>
</tr>
</tbody>
</table>

U.N. S.D.G. | Content captured in AASHE STARS |
 Industry, innovation, and infrastructure | Facility open access to research |
 Reduced inequalities | Institutional procurement of responsibly produced goods that ensure fair labor rights and support disadvantaged businesses and small and medium-sized enterprises |
 Sustainable cities and communities | Operational policies and plans that support sustainable transport on campus, reduce air pollution and minimize waste |
 Responsible consumption and production | Institutional procurement of responsibly produced goods, focusing especially on food, paper, electronics, and cleaning chemicals |
 Climate action | Efforts to reduce air pollution and waste on campus |
 Life below water | Operational policies and institutional plans that focus on reducing greenhouse gases to mitigate climate change |
 Life on land | Institutional procurement of sustainably sourced seafood |
 Industry, innovation, and infrastructure | Energy efficiency of campus infrastructure |
 Reduced inequalities | Make the institution more accessible to low-income students and underrepresented groups |
 Sustainable cities and communities | Limiting the compensation of the highest paid individual relative to the compensation of the lowest paid individual |
 Responsible consumption and production | Efforts to reduce air pollution and waste on campus |
 Climate action | Investments in consumption engaged in responsible consumption and production |
 Life below water | Educating and raising awareness about climate change |
 Life on land | Investments in consumption that take climate action |
 Industry, innovation, and infrastructure | Institutional procurement of sustainably sourced seafood |
 Reduced inequalities | Institutional plans or programs in place to protect or positively affect species habitats and/or environmentally sensitive areas |
 Sustainable cities and communities | Climate action | Institutional plans that promote or commit to engaging with the SDGs |
 Responsible consumption and production | Peace, justice and strong institutions | Partnerships for the goals | Institutions that promote or commit to engaging with the SDGs |

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Sustainability Integration Project

Life-Cycle Cost Analysis is a method for assessing the total cost of ownership over the life cycle of a product, system, or service. It includes acquisition, operation, maintenance, and disposal costs. This method helps in making informed decisions about the most cost-effective and sustainable choices. It is particularly useful in the early stages of design and planning to reduce costs and environmental impacts.

Forest Stewardship Council (FSC)

Purchasing materials, products, and services in a manner that integrates fiscal responsibility, social equity, and community and environmental stewardship. The FSC promotes responsible forest management and sustainable forestry practices.

United Nations Sustainable Development Goals

Renewable energy

The energy produced from sources that do not depleted or can be replenished within a human’s lifetime. The most common examples include wind, solar, geothermal, biomass, and hydropower. This is in contrast to non-renewable energy sources such as fossil fuels.

Electric vehicle (EV)

Northeast Center for Coastal Resilience

Scope 3 emissions

The indirect emissions not covered in Scope 2. Some examples of Scope 3 GHG emissions are: Purchased goods and services, capital goods, waste generated in operations, business travel, commuting (employee and student), end-of-life treatment of sold products, downstream leased assets, franchises, and investments.

Sustainable procurement

Purchasing materials, products, and services in a manner that integrates fiscal responsibility, social equity, and community and environmental stewardship.

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.

Scope 1 and Scope 2 emissions

Scope 1 emissions are direct, on-site greenhouse gas emissions that are a consequence of activities that take place at the institution’s facilities, such as fuel combustion for heating or electricity generation. Scope 2 emissions are indirect, off-site greenhouse gas emissions that are a consequence of activities that take place at facilities owned or controlled by another entity. Scope 2 emission sources include purchased electricity, purchased cooling, and purchased heating.

Scope 3 emissions

The total indirect emissions that contribute to the institution’s overall carbon footprint. These emissions result from activities that take place beyond the institution’s direct control and ownership, such as the use of purchased goods and services, non-renewable energy sources, transportation, and waste management.

DEFINITIONS

Sustainability

The condition of being able to meet the needs of the present without compromising the ability of future generations to meet their needs. This includes social, economic, and environmental dimensions.

Scope 2 emissions

Direct GHG emissions occurring from sources that are owned or controlled by the institution. This includes: combustion of fuels to produce electricity, steam, heat, or power using equipment in a fixed location such as boilers, burners, heaters, furnaces, incinerators and combustion fuels by institutions-owned cars, trucks, buses, and other transportation devices.

Scope 3 emissions

Emitted gases like carbon dioxide, methane, and nitrous oxide that contribute to solutions.

Renewable energy

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.

Environmental and justice

Climate change

The increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

Greenhouse gas

The state of being without reliable access to a sufficient quantity of affordable, nutritious food.

Food insecurity

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

Diversion rate

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.

Forest Stewardship Council

Purchasing materials, products, and services in a manner that integrates fiscal responsibility, social equity, and community and environmental stewardship.

Zero waste

SUSTAINABILITY

Scope 2 emissions

Life-Cycle Cost Analysis is a method for assessing the total cost of ownership over the life cycle of a product, system, or service. It includes acquisition, operation, maintenance, and disposal costs. This method helps in making informed decisions about the most cost-effective and sustainable choices. It is particularly useful in the early stages of design and planning to reduce costs and environmental impacts.

Forest Stewardship Council (FSC)
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United Nations Sustainable Development Goals

Renewable energy

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Electric vehicle

Northeast Center for Coastal Resilience

Scope 3 emissions

The indirect emissions not covered in Scope 2. Some examples of Scope 3 GHG emissions are: Purchased goods and services, capital goods, waste generated in operations, business travel, commuting (employee and student), end-of-life treatment of sold products, downstream leased assets, franchises, and investments.

Sustainable procurement

Purchasing materials, products, and services in a manner that integrates fiscal responsibility, social equity, and community and environmental stewardship.

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.

Scope 2 emissions

Direct GHG emissions occurring from sources that are owned or controlled by the institution. This includes: combustion of fuels to produce electricity, steam, heat, or power using equipment in a fixed location such as boilers, burners, heaters, furnaces, incinerators and combustion fuels by institutions-owned cars, trucks, buses, and other transportation devices.

Scope 3 emissions

Indirect GHG emissions that are a consequence of activities that take place beyond the institution’s direct control and ownership, such as the use of purchased goods and services, non-renewable energy sources, transportation, and waste management.

DEFINITIONS

Sustainability

The condition of being able to meet the needs of the present without compromising the ability of future generations to meet their needs. This includes social, economic, and environmental dimensions.

Scope 1 and Scope 2 emissions

School of Earth and Sustainability

The total indirect emissions that contribute to the institution’s overall carbon footprint. These emissions result from activities that take place beyond the institution’s direct control and ownership, such as the use of purchased goods and services, non-renewable energy sources, transportation, and waste management.

Scope 3 emissions

All indirect emissions not covered in Scope 2. Some examples of Scope 3 GHG emissions are: Purchased goods and services, capital goods, waste generated in operations, business travel, commuting (employee and student), end-of-life treatment of sold products, downstream leased assets, franchises, and investments.

Sustainable procurement

Purchasing materials, products, and services in a manner that integrates fiscal responsibility, social equity, and community and environmental stewardship.

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.

Scope 2 emissions

Direct GHG emissions occurring from sources that are owned or controlled by the institution. This includes: combustion of fuels to produce electricity, steam, heat, or power using equipment in a fixed location such as boilers, burners, heaters, furnaces, incinerators and combustion fuels by institutions-owned cars, trucks, buses, and other transportation devices.

Scope 3 emissions

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

DEFINITIONS

Sustainability

The condition of being able to meet the needs of the present without compromising the ability of future generations to meet their needs. This includes social, economic, and environmental dimensions.

Scope 1 and Scope 2 emissions

School of Earth and Sustainability

The total indirect emissions that contribute to the institution’s overall carbon footprint. These emissions result from activities that take place beyond the institution’s direct control and ownership, such as the use of purchased goods and services, non-renewable energy sources, transportation, and waste management.

Scope 3 emissions

All indirect emissions not covered in Scope 2. Some examples of Scope 3 GHG emissions are: Purchased goods and services, capital goods, waste generated in operations, business travel, commuting (employee and student), end-of-life treatment of sold products, downstream leased assets, franchises, and investments.
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