



# MICHIGAN UNIVERSITIES LEADING ON CLIMATE

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2023 REPORT

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MICHIGAN  
**CLIMATE ACTION**  
NETWORK

We acknowledge the original Indigenous inhabitants and stewards of the Great Lakes and the land we now call Michigan. This land encompasses the ancestral, traditional, and contemporary lands of the Anishinaabeg: the Three Fires People who also identify as Ojibwe, Odawa, and Potawatomi. We recognize Michigan's 12 federally recognized Native Nations, historic Indigenous communities in Michigan, Indigenous individuals and communities who live here now, and those who were forcibly removed from their homelands. In offering this land acknowledgement, we affirm Indigenous sovereignty, history and experiences.

## WRITTEN BY



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# INTRODUCTION

The Intergovernmental Panel on Climate Change conclusions clearly convey that deep emission reductions must be put in place as quickly as possible, yet analyses of the reduction measures put in place by the Paris Climate Accords indicate that even with current carbon mitigation efforts, we are likely to still reach a global temperature increase, from pre-industry levels, of 1.5° C, sometime in the 2030s.<sup>1</sup> Fortunately, the evidence also shows that we can halve emissions by as soon as 2030, with significant drops in the cost of renewable energy sources and opportunities in renewables opening up in both urban and rural areas.<sup>2</sup> In the absence of federal policy, local governments<sup>3</sup> and states like Michigan have led the way. Several anchor institutions such as hospitals, faith communities, and businesses are also implementing their own measures toward carbon neutrality, and this report focuses on the efforts of Michigan's public universities.

Universities, like the cities that hold them, are communities in their own right. In Michigan, these communities house, educate, and even employ hundreds of thousands of students per year. Likewise, Michigan universities employ tens of thousands of faculty and staff to run programs, manage facilities, engage in research, and provide an education to those enrolled. **Representing a considerable part of Michigan's economy and society, higher education institutions can help solve the novel scientific, technological, political, and social challenges climate change will create in their students' lifetimes.** The efforts of Michigan universities better the state in many ways: they connect communities across the state, provide groundbreaking research in many sectors, create pathways for students, enrich local areas, and much more. **One of the most important things that institutions of higher education can do at this point in history is to educate people about climate change and to use their intellectual resources to devise and implement effective climate action plans to model and actuate a more sustainable world.** Many universities have already committed to accelerated action and the goal of this report is to showcase how all of Michigan's public universities are responding to the climate crisis.

While universities have often called for the decarbonization of current systems, it is important to remember that these institutions themselves have a high demand for electricity. Some universities have such a high demand that they have built their own power plant for university facilities, while others purchase a majority of their electricity from Michigan utility companies. The annual emissions rate for some universities can easily reach over fifty thousand metric tons of CO<sub>2</sub>e. That is equal to powering over six thousand homes for a year.<sup>4</sup>

Students and faculty alike have called for these institutions to be leaders in climate action, demanding that universities create ambitious carbon neutrality goals that include in-depth planning, equitable actions, and frequent review. With the *MiHealthyClimate Plan* recently finalized, and the state of Michigan setting its pathway towards a 2050 carbon neutrality date,<sup>5</sup> these voices demand that Michigan universities spearhead the climate movement, going above and beyond state standards. In response, all universities have put steps in place to plan for sustainability at their respective institutions, and many universities have created carbon neutrality dates, adopted aggressive energy conservation measures, increased access to public transportation, and more.

To lead Michigan in climate solutions, universities cannot stop with just the mitigation of carbon emissions. They can also create cultures of sustainability through both campus initiatives and community partnerships that engage student voices. **Universities that foster cultures of sustainability, educate on climate issues, and provide adequate resources for students at their respective institutions, are those that develop students to integrate knowledge and skills from multiple fields to help solve the most complex global issues of the 21st century.** Promoting student involvement with local climate efforts creates support for building strong communities and helps students learn what they can do to ensure a sustainable future. Likewise, all students, and the larger community, benefit from climate initiatives, having resilient communities, and having a culture that can sustain itself.

**This report illustrates how Michigan universities have taken steps to address climate change and build a culture of sustainability.** It highlights university climate plans, public transportation, community involvement, and other relevant steps. Each university has unique challenges and many need to overcome a much different set of issues than others. For example, some universities have a student population that mostly commutes, while others have most students living on campus. Some are connected to large city centers with many resources, while others are in towns with a population less than ten thousand. Some have offices covering campus sustainability, with staff pushing for sustainable practices everyday, while others have a few dedicated faculty making as much progress as they can. While there are many differences between the universities in the state, one thing is the same across all of them: the need to confront the climate crisis.

## METHODS

**T**his report only researched the 15 public universities in Michigan and focused on three categories of reduction of carbon emissions: the reduction of carbon emissions from campus facilities, the promotion of sustainable transportation, and community-involvement in climate efforts. For campus facilities, energy procurement, electricity reduction, renewable energy sources, climate plans, creative

innovations, and other efforts were highlighted. For sustainable transportation, access to public transit, average student commutes, and student resources were shown. For community-involvement, student organizations, university involvement in the local community, university membership in climate organizations, and other relevant information was featured. **Every university has unique challenges in the areas listed and many have thus created unique solutions to work on these issues.**

Many universities have reported on their climate efforts both through news outlets and a reporting structure by The Association for the Advancement of Sustainability in Higher Education (AASHE) titled The Sustainability Tracking, Assessment, & Rating System (STARS). Other available assessments include the *Climate Leadership Network* by Second Nature, and a climate ranking by Times Higher Education. While the *Climate Leadership Network* is a climate-focused program, unlike AASHE STARS—which ranks scores based on the university’s overall sustainability—it is less common than the AASHE program. Seven public universities in Michigan have STARS reports that are not currently expired. In the criteria for their reporting, AASHE STARS looks for emissions, renewables, and other climate related metrics, but also places a heavy emphasis on university curriculum, research, and administration. In Second Nature’s *Climate Leadership Network*, there is a list of [climate commitments](#), [emissions reporting](#), and [University Climate Change Coalition members](#), of which University of Michigan is a member.



This report analyzed these primary sources, university plans and documents, and information was buttressed by interviews with faculty and staff, completed during the spring semester 2023. Although all universities were contacted, not all were able to get back to us. Universities that were not able to review their inclusion in this report include: Wayne State University, Oakland University, Central Michigan University, Ferris State University, Saginaw Valley State University, and Lake Superior State University.







**Public universities in Michigan have varying sizes of students, faculty and staff<sup>6</sup> and institution size is an important consideration when analyzing carbon neutrality.** Becoming carbon neutral is generally defined as having a total of zero emissions either by completely removing the use of fossil fuels (net-zero), or by offsetting carbon emissions through buying carbon syncs or renewable energy credits. Types of emissions are divided into three categories: scope 1, 2, and 3. Scope 1 emissions are the direct emissions from an institution, if a power plant or gas-powered vehicle is owned by a university it's categorized here. Scope 2 is any purchased electricity from an institution. Scope 3 are emissions not caused directly by an institution, but indirectly from their activities. For most purposes, universities tend to focus on reducing their scope 1 and 2 emissions.

For each university, we also developed its own short report (linked to its name in **Table A**).








## Michigan Public Universities



Table A

University	University of Michigan (UM)? [all campuses]*	Michigan State University (MSU)	Wayne State University (WSU)	Grand Valley State University (GVSU)	Western Michigan University (WMU)	Oakland University (OU)
Total Student Enrollment	65,731	50,023	24,000	21,517	16,643	16,108
Number of Faculty and Staff	29,700	20,630	6,805	3,500	6,094	4,364
AASHE STARS Rating	Gold	Gold	N/A	Gold	Silver - Expired	N/A
Fun Fact	<p>UM has a \$25 million revolving energy fund to help finance its energy conservation efforts</p> <p><i>*UM's climate action plan and carbon neutrality goals include its campuses at Ann Arbor, Dearborn, and Flint, so this report treats the UM system as a whole.</i></p> 	<p>MSU built North America's largest solar carport in 2017</p> 	<p>In 2022 WSU was awarded the Association of Physical Plant Administrators Award for Sustainable Innovation for the university's compost program</p> 	<p>GVSU has transitioned more than 60% of the university fleet to electric vehicles</p> 	<p>WMU requires all students take essential studies in sustainability</p> 	<p>OU has partnered with Oakland county to involve students and faculty with local sustainability plans</p> 

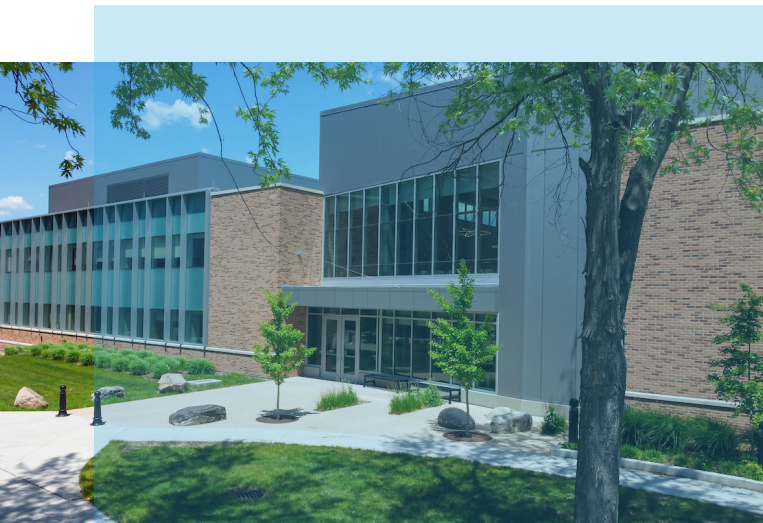
**Table A continued**







Eastern Michigan University (EMU)	Central Michigan University (CMU)	Ferris State University (FSU)	Saginaw Valley State University (SVSU)	Northern Michigan University (NMU)	Michigan Technological University (MTU)	Lake Superior State University (LSSU)
14,408	14,594	10,072	7,147	6,970	7,074	1,812
2,400	2,200	1,568	1,100	1,650	3,154	617
Bronze	Gold	N/A	N/A	Silver	Silver	N/A
EMU helps university employees get rooftop solar through EnergySage	CMU has a completely student-run office of sustainability	FSU has a bus line traveling from campus all the way to Grand Rapids	SVSU created Bachelor of Arts degree in Environmental Studies and Sustainability in 2022	NMU has a \$50,000 Solar Array funded entirely by students	MTU has a Sustainability Demonstration House that showcases many sustainable options for a homeowner	LSSU has a dedicated forum on its own app to help students participate in ridesharing
						

# SUMMARY

## FACILITIES & CARBON NEUTRALITY

The University of Michigan<sup>7</sup>, Michigan State University<sup>8</sup>, Wayne State University<sup>9</sup>, Grand Valley State University<sup>10</sup>, Western Michigan University<sup>11</sup>, Eastern Michigan University<sup>12</sup>, and Northern Michigan University<sup>13</sup> all have stated goals to become carbon neutral. The University of Michigan has established a plan towards neutrality by the year 2040 with multiple interim goals, Grand Valley State University a plan to reach neutrality by 2043, Michigan State University and Northern Michigan University both have established plans setting neutrality by 2050 with interim goals of 2030, and Western Michigan University has established a neutrality goal inline with the state of Michigan at 2050.



University (with goals in Carbon Emission Reductions)	Interim Goals (Baseline Year)	Carbon Neutrality Goals (Baseline Year)	When targets were set or neutrality plans released
	50% reduction of emissions by 2025 (2010)	100% reduction of emissions by 2040 (2010)	Set goals in 2021; has yearly reviews on progress
	50% reduction of emissions by 2030 (2010)	100% reduction of emissions by 2050 (2010)	Set goals in 2021
	50% reduction of emissions by 2030 (2015)	<i>Same as interim</i>	Set goals in 2023
	N/A	100% reduction of emissions by 2043 (2005)	Set goals in 2015
	N/A	100% reduction of emissions by 2050 (2005)	Set goals in 2012 at 2065, updated 2022
	Goals to increase the amount of renewable sources and transition 50% of the current fleet with EV by 2050	100% reduction of emissions by 2050 (2010)	Set goals in 2021

**Table B**









Universities like UM<sup>14</sup>, MSU<sup>15</sup>, and WMU<sup>16</sup> all have their own power plants, and produce most of their electricity, while the other universities in the state purchase most of their electricity from a variety of sources. Some universities procure sustainable energy options in a few different ways. Michigan Technological University, for example, purchases renewable energy credits equalling fifty percent of their total electricity use,<sup>17</sup> helping support renewable energy production in the lower peninsula. Similarly, Central Michigan University procures twenty-five percent of their electricity through wind farms.<sup>18</sup>

**Many universities have focused on reducing electricity use through efforts in energy conservation.**

UM has recently implemented an energy revolving fund that dispersed twenty-five million dollars, over five years, in energy projects across all three campuses, it then provided fifteen million in funding in fiscal year 2022, and will become fully operational this fiscal year (2023).<sup>19</sup> In conversations with Michigan Technological University, it was stated that a fund with a similar purpose is stated to be announced by the university. Using many different methods of funding, almost every university in the state has made efforts in energy conservation. Projects often include purchasing more efficient LED lighting, more efficient heating/cooling systems, and building a structure to certain requirements. Likewise, if a building reaches a certain level of energy efficiency, it is eligible to receive Leadership in Energy and Environmental Design (LEED) certification, from the U.S. Green Building Council. This certification is sought out by many universities to both show reductions in energy use and highlight the architectural standards of the university.





University						
Purchased Electricity Source	Renewable and traditional energy sources bought from DTE	Purchases from Consumers Energy with a support system connected to the campus power plant	Purchases from DTE for the majority of campus electricity	Purchases from Consumers Energy for a majority of campus electricity	Some purchases to fill in gaps from Consumers Energy	Purchases most electricity from DTE
Is There a Campus Power Plant?	Yes, a central power plant that supports campus electricity through natural gas	Yes, the T.B. Simon Power Plant which powers most of campus through natural gas	No	No	Yes, the Beam Power Plant powers the majority of campus through natural gas	No
Buildings with LEED Certification(s) (From Platinum to Regular Certification)	17 Gold Certifications 6 Silver Certifications	4 Gold Certifications 6 Silver Certifications	2 Gold Certifications 3 Silver Certifications	1 Platinum Certification 12 Gold Certifications 10 Silver Certifications 3 Regular Certifications	2 Gold Certifications 1 Silver Certification 1 Regular Certification	1 Platinum Certification 3 Gold Certifications

**Table C**



Purchases most electricity from DTE

Purchases most electricity from Consumers Energy, with 25% assured as renewable

Purchases most electricity from Consumers Energy

Purchases most electricity from Consumers Energy

Purchases most electricity from municipally-owned natural gas power plant: Marquette Board of Light & Power

Purchases most electricity from Wolverine Power Co-op. Purchases renewable energy credits to cover 50% of its electricity use

Purchases most electricity from Cloverland Electric Cooperative

No

No

Yes, but only a plant to heat campus; provides around 90% of campus heating

No

No

No

No

1 Gold Certification

2 Platinum Certifications

5 Gold Certifications

1 Silver Certification

3 Silver Certifications

N/A

N/A

1 Gold Certification

2 Silver Certifications

2 Regular Certifications

4 Regular Certifications






**Table C continued**

Many universities in Michigan still invest money in fossil fuel companies, and almost every university has had students speak out against this action, including students at WMU<sup>20</sup>, MSU<sup>21</sup>, and GVSU<sup>22</sup>. The largest divestment by Michigan Universities has so far been done by UM, with UM divesting in the top one hundred coal and oil companies and setting standards for divesting in the future.<sup>23</sup> Similarly, in conversations with NMU, they highlighted that only a small proportion of their investments, 4.6 percent, are tied to fossil fuels, and at WMU only 1 percent.

## TRANSPORTATION

**Campus fleets are large sources of carbon emissions for most universities.** Most institutions still have fleets mostly powered by gas or diesel fuels. GVSU stands out in its electric fleet, though, with ninety-six EV vehicles, four hybrid, and fifty-three gasoline.<sup>24</sup> Multiple universities have created plans to transition to a more sustainable fleet. MSU has acquired 40 EV vehicles recently in an effort to reach their 2030 emission goals<sup>25</sup> and NMU has planned to replace at least half their vehicles with EV or hybrid options by the same date.<sup>26</sup>

Public transportation methods differ a lot based on the location and placement of the university. For instance, universities like the University of Michigan, Wayne State University, Michigan State University, Western Michigan University, and Eastern Michigan are located centrally and in cities with more options for pedestrians. Universities like Saginaw Valley State University and Grand Valley State University are connected to city centers, but the main campus is separated from the city. Other universities like Ferris State University, Michigan Technological University, and Oakland University are in smaller cities that tend to have less options for pedestrian travel. Likewise, universities have varying numbers of on and off campus students. Overall some university highlights have been GVSU's extensive busing from Allendale to Grand Rapids proper,<sup>27</sup> and free access to busing options from both UM<sup>28</sup>, WMU<sup>29</sup>, and on-campus MSU routes.<sup>30</sup>

University	Fleet Size (Gas, Diesel, Hybrid, EV)	Student Commuter Split (Sustainable to Unsustainable)
	977 (473 Gas, 48 Hybrid, 1 EV) - Also includes 62 higher biofuel and leased vehicles	86% use sustainable transportation - 14% use single-occupancy vehicles
	1,123 (698 Gas, 87 Diesel, 56 Hybrid, 45 EV) - Also includes 162 higher biofuel and 72 low-level fuel	77% use sustainable transportation - 20% use single-occupancy vehicles - 3% online
	158 (53 Gas, 5 Diesel, 4 Hybrid, 96 EV)	59% use sustainable transportation - 41% use single-occupancy vehicles
	331 (9 Gas, 1 Diesel, 5 EV) - Also university leased vehicles	79% use sustainable transportation - 21% use single-occupancy vehicles
	239 (198 Gas, 36 Diesel, 5 EV)	62% use sustainable transportation - 38% use single-occupancy vehicles
	335 (325 Gas, 9 Diesel, 1 EV)	69% use sustainable transportation - 31% use single-occupancy vehicles
	94 (91 Gas, 2 Diesel, 1 Hybrid)	59% use sustainable transportation - 41% use single-occupancy vehicles
	63 (6 Gas) - Also university leased vehicles	54% use sustainable transportation - 46% use single-occupancy vehicles

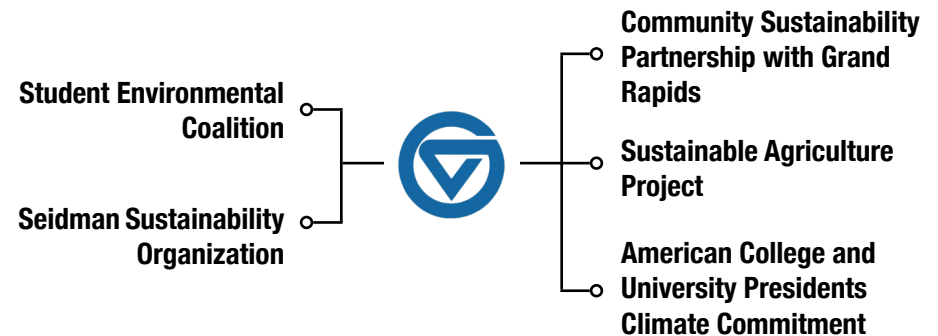
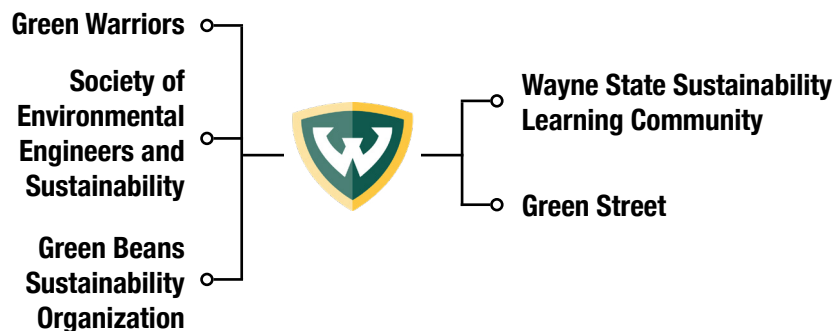
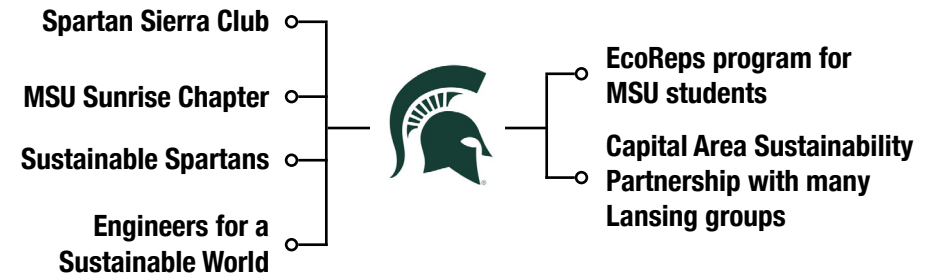
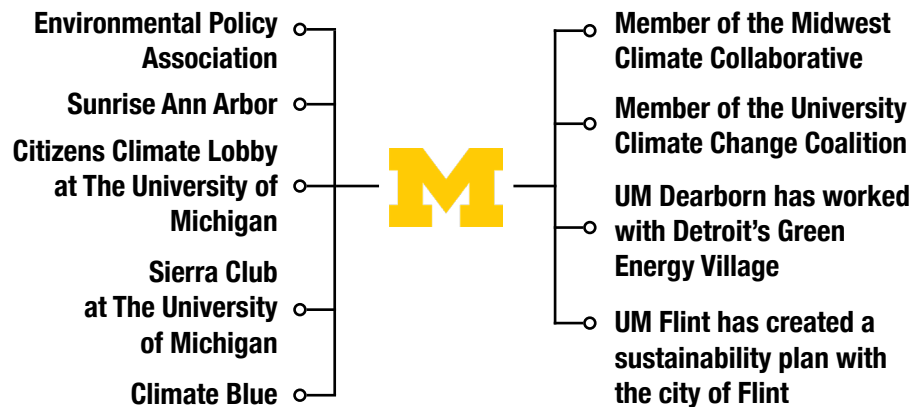
**Table D**

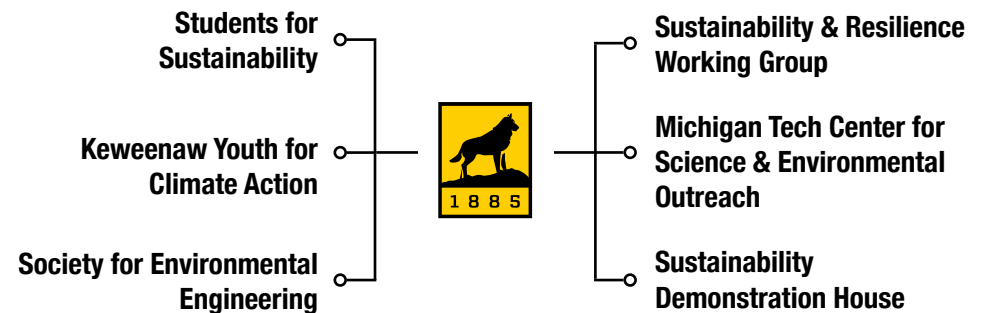
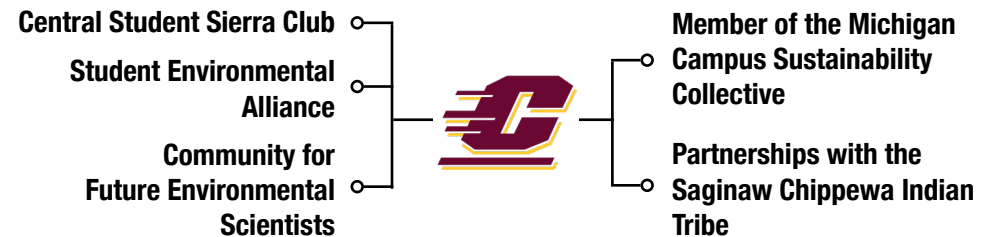
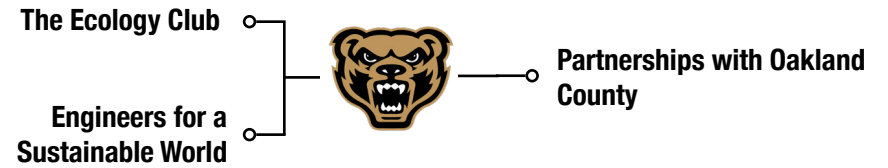
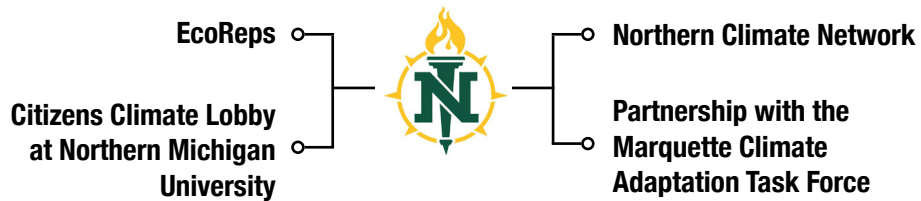
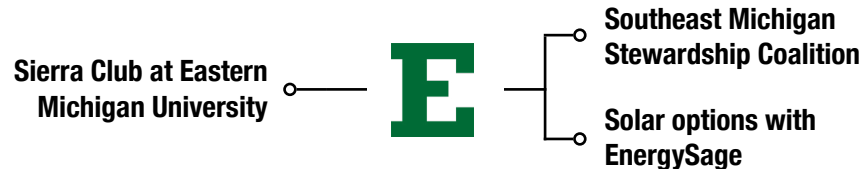
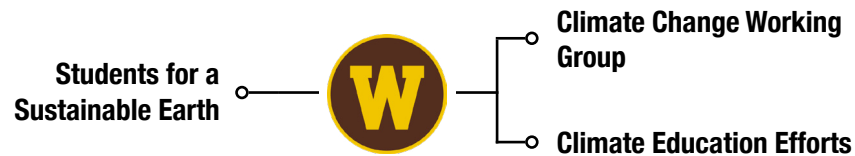


## STUDENT ENGAGEMENT & COMMUNITY INVOLVEMENT

Almost every university has student organizations related to sustainability. Some universities, like UM<sup>31</sup> and MSU<sup>32</sup> have chapters of national organizations, as well as university programs sponsoring sustainable practices, like the PlanetBlue<sup>33</sup> Ambassador and EcoReps<sup>34</sup> programs respectively. Most Michigan universities have environmentally focused student organizations unrelated to larger organizations. At WMU, there's Students for a Sustainable Earth,<sup>35</sup> at GVSU, there's GVSU Green Team,<sup>36</sup> at NMU, there's the Conservation Club.<sup>37</sup> **These students are the hands-on people addressing issues on these campuses, working together to build sustainable initiatives in their community.**

Below, view a list of each university's student groups branching to the left of its logo, and its community involvement to the right.







# CONCLUSION

**H**igher education institutions play a crucial role in our energy infrastructure. By conducting research, developing innovative solutions, and implementing sustainable practices, universities can help communities build climate resilience. **They also promote a culture of sustainability as a core value, inspiring students to become advocates for positive change and providing them with the necessary resources to make a difference.**

Strategic plans, whether focused on climate or sustainability, provide a roadmap for institutions to achieve carbon neutrality. Climate commitments, such as those made by Michigan State University, the University of Michigan, and Grand Valley State University, give way to action. Reaching carbon neutrality requires a comprehensive and coordinated effort, especially during a global push to eliminate fossil fuels. As Michigan's institutions of higher education, being the leaders of this push is vital.

**This research highlighted three main categories where universities can make a significant impact on climate change: campus facilities, transportation, and community involvement.** However, universities must also consider a range of other factors when developing climate policies. For example, divesting from fossil fuels is becoming an increasingly important issue, and universities must carefully consider their investments and funding sources.

In addition, universities must also address the educational component of climate change. How are students being taught about climate issues and sustainability? Are these topics integrated into the curriculum across all departments? What resources are available to students who are interested in pursuing careers in environmental fields? These are all important questions that universities must consider as they develop climate policies.

Furthermore, the institutional structure of universities themselves can also have a significant impact on climate change. How are decisions made about funding, infrastructure, and other resources? Universities must create a culture that values sustainability and encourages participation from all members of the community in order to effectively address climate change, and integrate sustainability into all aspects of the institution.

It's worth noting that many university climate policies are still fairly new, with most being developed within the past five years. The implementation of these policies is critical to their success, and universities must take concrete steps to ensure that their climate goals are being met. This may involve significant changes to campus infrastructure, transportation systems, and community engagement initiatives. **Ultimately, universities have a unique position to lead by example, to foster a culture of climate resilience, and to build a better future promoting environmental values in all aspects.**



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