

Climate Action Planning Analysis Worksheet: Utah State University (USU)

A) Summary and Main Takeaways:

Utah State University's Climate Action Plan described useful implementation strategies with a heavy focus on student engagement and partnerships. The plan developed a sufficient GHG emissions portfolio focusing on scope one, two, and several scope three emissions. It should be noted that commuting in individually owned cars (a scope three emission source) was not included in its portfolio, which undoubtedly skews USU's findings. The plan commits to producing an annual emissions portfolio to adequately assess its performance and adjust to meet targets and goals. The plan highlighted various mitigation strategies aimed at reducing GHG emissions related to energy, community engagement, and research. Each mitigation strategy was described in varying detail, while community and student engagement remained a focal point of the plan. Educational programs, hands-on activities, and a sustainability-based curriculum all work in tandem to increase awareness and encourage involvement among students. The plan provided a full appendix describing funding opportunities in great detail including, life cycle costing, rebates, grants, and other incentives supporting sustainable development. The plan mentioned the challenge of gathering data and securing funding, often citing the lack of resources.

B) Potential Interviewing Questions and Curiosities:

- Plan states: "Future plans call for adding recycling bins to all the offices on campus and converting to a single-stream recycling process", has this been accomplished? (11)
- What is the status of the "brief document updating progress toward carbon neutrality every other year"? (30)
- Is the Sustainability Plan 2020 Update an update to the 2010 CAP or to a separate Sustainability Plan?

C) Analysis Questions:

1. Does the CAP include information on creating a baseline?

Does the plan discuss its baseline? In other words, does the plan reference its natural greenhouse gas emissions (GHG) levels used to inform planning, goal-setting, and climate policy structure? There are several possibilities for setting a baseline. Some plans

may focus on a single historical emissions level, while others may reference future baseline projections.

- “In 2008 USU created a GHG emissions portfolio, which primarily focused on scope one, two, and several significant scope three emissions. The largest portion of emissions was from travel, electricity generation, and natural gas consumption, suggesting that the largest opportunities for emissions related to energy use on campus.” (7).
- “Attaining carbon neutrality by 2050 will require major shifts in behaviors, policy, economics, and technology.” (8).
- “USU used the Greenhouse Gas Inventory Calculator (volume 5.0), which is developed specifically for universities to generate a GHG inventory”. (36).
- “The majority of emissions were from travel, electricity, and natural gas consumption. This is approximately the amount of GHG emitted by 20,720 cars per year”. (43).
- “The largest opportunities for GHG emissions are related to electricity and natural gas consumption”. (44).
- “Utilizing the intensity index, we assume that each of the 625 new students per year will increase USU’s GHG emissions by 6.25 MTCO₂e per year. We utilize this projection as a baseline from which we can quantify the emissions reductions that would be required to meet particular reduction targets through 2022.” (45).

Summary: USU created a comprehensive emissions portfolio establishing its baseline. The inventory focused on scope one, two, and several scope three emissions. The scope three emissions included in the inventory consisted of air travel, solid waste, and commuting in individually owned vehicles. USU developed its portfolio through the Greenhouse Gas Inventory Calculator (voulume5.0) tailored specifically for Universities. The largest opportunities for GHG reductions were found in electricity and natural gas consumption. As of 2007, electricity consumption was responsible for 26% of total emissions. Natural gas was responsible for emitting approximately 23% of total emissions.

2. By what measure is success tracked and reported?

Does this plan discuss how progress is tracked and reported? Does the plan reference a system that assesses its sustainability performance? Many different approaches can be used, but make sure to take note of STARS and AASHE.

- USU is committed to producing annual GHG emissions inventories. This enables the university to track its progress and continue to evaluate its goals, targets, and implementation process.
- “USU has recorded a 20% increase in student populations since 1990, but only a 1% increase in our corresponding energy growth. This is a strong indicator of the energy conservation and energy efficiency projects and policies that have been implemented during this time, both from the state level and on our campus have been effective” (8)
- “By determining how many unique individuals we have reached in SOAR, Connections, LEAP and other courses by the time they graduate, we will be able to monitor our success at reaching ‘all students’ as required by the ACUPCC” (16)
- “Plans also have been made to include specific questions on sustainability in the annual freshman/sophomore survey and the survey of recent USU graduates” (16)
- The Utah State Sustainability Council will continue to produce annual GHG emissions inventories. These are and will continue to be critical in determining how the University is doing overall on emissions goals. In addition, they will produce a brief document updating progress toward carbon neutrality every other year [Including ...]” (30)
- Sustainability Plan 2020 update, compares STARS rating of USU to other regional schools (including CSU, MSU, and Weber State)
 - Academic & Engagement; Community, Culture, & Communication; Operations; Energy & Built Environment; USU Greenhouse Gas Inventory; Air Quality & Transportation; Sustainability Council Collaborations; Food; Inclusion; Planning, Administration, & Human Resources; Purchasing; Waste & Recycling; Big To-Do List all included.

Summary: USU committed itself to produce annual emissions reports to use as a framework to follow its progress. Annual reports give USU the opportunity to compare data and continue to adjust goals and targets in the implementation process. In addition to the annual emissions report, USU dedicated itself to writing up a report updating its progress towards carbon neutrality every other year. USU created plans to survey all freshman/sophomore students on questions of sustainability to assess how successful its efforts were to increase sustainability awareness.

3. Does the CAP set goals, strategies, or action items for implementation?

Does the plan address potential next steps for the plan to be carried out? Take note if plans mention tracking progress or improvements. Does the plan provide recommendations, contain reduction and mitigation strategies, or set interim goals to ensure implementation?

- USU replaced its coal-generated power plant with hydroelectric and co-generation installations reducing emissions from 265 tons per year to less than 20 tons per year over the last five years. (9).
- The Aggie shuttle buses now run on natural gas instead of diesel, while the Aggie Blue Bikes Program enables students to check out over 200 bicycles for their own use. The USU motor pool facility has purchased more efficient vehicles, including hybrids and electric vehicles. (10).
- The IT department has implemented an energy conservation program through purchasing Energy Star equipment and educating students on powering down equipment where appropriate. (10).
- Four USU buildings have been retro-commissioned to maximize efficiency. USU has two LEED-certified buildings and in total retrofitted 3.5 million square feet of space with new, efficient fluorescent lighting. (9).
- “This will be achieved by (1) reducing campus energy consumption, (2) obtaining energy from renewable and sustainable sources, (3) institutionalizing a sustainable culture among students, faculty, and staff, and as a last resort (4) purchasing carbon offsets.” (4)
- “Detailed operational actions will be developed as a set of five-year plans, continually revised as new technologies and opportunities arise” (4)
- “We have installed occupancy sensors for lighting in several campus locations and retrofitted 3.5 million square feet of space with new efficient fluorescent lighting” (9)
- “The State of Utah recently adopted policies that will require all new state buildings to meet at least LEED silver standards” (9)
- “Future plans call for adding recycling bins to all the offices on campus and converting to a single-stream recycling process” (11)
- “However, we are committed to purchasing [carbon credits] only as a last resort” (11)
- “Future programs to enhance community outreach for sustainability at USU will include: ...” (13)
- To-Do list in Sustainability Plan update, & broken down by section

Summary: USU has taken many measures to increase energy efficiency across campus, with a focus on energy, community engagement, and climate research. USU replaced its coal-generated power plant with both hydroelectric and co-generation installments. 3.5 million square feet of space was retrofitted with efficient fluorescent lighting, while four buildings in total benefitted from retrofitting. As of 2007, USU had two LEED-certified buildings receiving platinum

certification. However, Utah has adopted policies requiring new state buildings to meet at least LEED silver certifications. USU incentivized biking to campus through Aggie Blue Bikes, a program enabling students to check out bikes for their own use. USU pledged to purchase vehicles that were hybrid or alternatively fueled. USU also offers an impressive recycling program, with 10,000 square feet of space and 11 employees. Lastly, USU committed itself to purchase carbon credits as a last resort.

4. How is the CAP funded?

Does the plan discuss efforts? In particular, where do sources of funding come from? Are these sources public or private entities?

- “Many institutions are adopting Life Cycle Cost Analysis (LCCA) to drive capital investment decisions. LCCA is an economic method to project evaluation that considers all costs and savings over the long term from initial investments to operations, maintenance, and renewal.” (72).
- “In most cases, LCCA will demonstrate that sustainability projects have favorable returns on investment and that longer-term approaches to campus planning will maximize performance from overall institutional investments.” (72).
- “If the administration supports allocating student fees to sustainability, it can be a great way to involve students more directly in sustainability programs and foster new collaborations between students, faculty, and staff.” (73).
- “Revolving loan funds are another way to bridge capital and operating costs, as well as a way to gain visibility for sustainability efforts. Campuses such as Harvard State University, California State University have used this model to grow their sustainability program, while quantifying the benefits of each of their projects.” (73).
- “Potential funding sources may include parking fee revenue, establishment of a revolving loan fund, building endowments, utility company incentives, federal and/or state grants, donations, voluntary student fee increases, and/or increasing the institutional operating budget” (4)
- “Identifying ways to pay for emissions reduction measures or offsets is challenging” (29)
- “Utah State University will not be able to make significant progress on its climate commitment without designated funding from the College” (29)
- “List of funding strategies to be pursued where appropriate and in combination to finance the reductions steps outlined in this plan [parking fee revenue, revolving loan fund, building endowments, utility incentives and rebates, grants and donations, voluntary student contributions or fees, institutional operating budget” (29)
- Further [funding] discussion occurs in Appendix F, “Building the Business Case for Campus Sustainability” (29)

Summary: USU recognized its critical need for funding in order to achieve a carbon-neutral campus. A list of potential strategies to exploit financing opportunities was presented including parking fee revenue, revolving loan fund, building endowments, utility incentives and rebates, grants and donations, student volunteered fees, and lastly USU's institutional operating budget. When sustainability is integrated with business it can reveal investment opportunities and essential tools such as LCCA, grants, and rebates that lead to long-term operations.

5. How did the CAP inform/engage stakeholders?

Did the plan include discussions about stakeholder involvement? Specifically, how did the plan address engaging stakeholders in participating in the CAP?

- “USU has several extension programs specializing in community outreach. These programs have partnered with local, state, and federal agencies and provide educational programs state-wide that focus on sustainability. These programs include the Utah Botanical Center and the Swaner Preserve and EcoCenter.” (14).
- “USU’s Wellness Program promotes local organic food, drinking water from reusable containers, and alternative transportation choices.” (12).
- “The Service Learning Program integrates hands-on sustainability projects as a part of the educational experience.” (12).
- “The Sustainability Council launched its first sustainability week in 2009, promoting awareness and highlighting the success of sustainability efforts through fun, educational presentations and events.” (14).
- “USU seeks to implement sustainable practices in all areas of the University with students serving key roles, particularly in special events such as Sustainability Week, Earth Day, multicultural events, and the bioneers and Sustainable Landscapes conferences.” (6)
- “Most recently, an effort was launched to involve all incoming freshmen and new students to our mission through workshops and exhibits during the Student Orientation Advisory and Registration (SOAR) and “Connections” programs” (6)
- “The University also has instituted a program working with science departments to encourage closing of fume hood sashes in laboratories to minimum levels when hoods are inactive” (9)
- “Wherever possible we encourage and incentivize the following for faculty, staff, and students: [bicycle commuting, videoconferencing, purchase of alternate-fueled, hybrid, and “right-sized” university vehicles]” (10)
- “USU actively promotes sustainability efforts on campus and in the greater community by increasing awareness and encouraging involvement. An important first step for the Sustainability Council was to create a universal symbol for sustainability

- with a new tagline, “Blue Goes Green,” and the corresponding logo shown above” (12)
- “The Council maintains a presence at many USU events and organized USU’s first sustainability Week in 2009. Members of the Council created and maintains a University Sustainability Website, and has implemented a pledge program titled “Take the Challenge,” in which students, faculty, and staff who commit to lowering their personal carbon footprint are provided with T-shirts, tote bags or other items and track their progress via email” (12)
 - “The Public Relations and Marketing department at USU has a designated staff member to work with the Sustainability Council’s standing Committee on Outreach” (13)
 - “USU is in the process of making climate neutrality and sustainability a part of both curriculum and other educational experiences for all students” (15)
 - “We have identified over 50 faculty members at USU who routinely teach sustainability and/or climate change in some 70 courses across campus” (16)
 - “Utah State University has several established and newly developed programs that perform cutting-edge, sustainability-related research” (17)
 - “The institution is committed to growing its portfolio of research to address global challenges in climate change and sustainability, including studies to promote new policies that support emerging technologies. To address this goal, USU established a Research Sustainability Committee in 2008, charged with the responsibility to harness the institution’s research capabilities to enable Utah and the Intermountain West to move toward climate neutrality and sustainability” (21)
 - “To achieve environmental and social justice, societies must work to address discrimination and promote equality. ... USU Multicultural Student Services (MSS) provides support for student success and direction for campus multicultural relations” (28)

Summary: USU promotes sustainability on campus through an impressive number of programs and events by engaging the community. The tagline “Blue Goes Green” serves as the Sustainability Council’s universal symbol promoting student involvement. Various programs created on campus promote sustainability through organic gardening, drinking from reusable containers, and alternative transportation use. In addition, USU has created several extension programs partnering with state, local, and agencies aiming to provide educational programs focusing on sustainability. Major events and projects related to sustainability are featured in the student and local newspaper encouraging the public to participate. The Sustainability Council launched its first Sustainability week in 2009, engaging students and faculty through educational presentations and fun activities. USU committed itself to make climate neutrality and sustainability a part of its curriculum.

6. Does the CAP mention gaps in data, uncertainties, or other challenges encountered?

Does the CAP address where data may be insufficient or unavailable? Take note of barriers to planning and implementation, uncertainties in climate projections or future emission scenarios, inconsistencies in data collection, etc.

- “The University does not track student travel.” (42).
- “At present, there are no options for electrical power generated from renewable resources through the city of Logan.” (9).
- “In the absence of information gathering and evaluation, no educational program can be deemed to have been successful.” (16).
- “Investment opportunities for sustainability projects are often not realized because of the long-term operational savings are not recognized in capital project budgets.” (72).
- “Unless the campus purchases the Renewable Energy Certificates (RECs) generated from the project they cannot rightfully claim to have offset their greenhouse gas emissions through on-site renewable energy. That is because RECs, are a tradable commodity that represent the attributes of clean, renewable energy.” (73).

Summary: USU did not provide many explicit examples of possible challenges/barriers outside of financing. Implementing campus-wide energy measures is hard to achieve without substantial streams of funding. USU recognized that investment opportunities are often missed due to short-term planning, while investors fail to acknowledge the operational savings that accumulate over time. USU does not track student travel, which serves as a large data gap.

7. What purpose do the appendices serve?

How extensive is the appendices section? Take note if they include extra graphs, tables, data, methodology, further detail and explanations, information on the planning process, etc.

- “In 2008, USU conducted an inventory of greenhouse gas (GHG) emissions to establish an emissions baseline (see Appendix A).” (7)
- “We are currently in the process of engaging University climate, soil, and vegetation scientists to determine the annual amount of carbon sequestered by the more than 28,000 of those land parcels (see Appendix B). (11)

- “USU is striving to engage all students in some aspect of sustainability, both on and off campus through the outreach activities mentioned above, along with course offerings listed below and in Appendix D” (15)
- “Through these opportunities, students experience many real world, hands-on immersions, often resulting in life changing transformations. (Organizations listed in Appendix C) (15)
- USU’s Dean of the College of Natural Resources serves as the Chair of GBRMP’s Executive Committee and the Dean of our College of Science serves as the liaison between the Executive Committee and the Coordinating Committee (see Appendix E” (26)
- Further [funding] discussion occurs in Appendix F, “Building the Business Case for Campus Sustainability” (29)
- “Appendix G: List of Website Addresses From the USU - CAP 2010 Report” (75)

Summary: The appendices served to describe the GHG portfolio, USU student organizations, and funding sources in greater detail. The appendix went into much richer detail describing the methods in which the GHG inventory was calculated. A thorough discussion of emission scopes was included and explained the difference between one, two, and three. Emission sources were broken down and discussed in detail. An entire list of sustainability-related student organizations was included as well as programs that support diversity. USU provided a course list that included all classes focusing on sustainability, carbon neutrality, and sustainable development. In addition, the appendices described finance concepts such as life cycle costing, grants, rebates, and other incentives.