

Campus Sustainability Committee (CSC) Progress Report February 2011

Introduction

The University of Wyoming (UW) is positioning itself to become more sustainable. Over the last five years, it has made great advances. President Buchanan created the Campus Sustainability Committee (CSC) in 2005 “to serve in an advisory capacity to all campus departments, colleges and other entities in an effort to advance environmental and economic sustainability at the University of Wyoming.” In 2007, President Buchanan signed the American College and University Presidents Climate Commitment (ACUPCC), committing UW to become carbon neutral by 2050. In 2009, UW submitted its Climate Action Plan (CAP), UW’s guiding document to reducing carbon emissions and becoming more sustainable. This report is a review of UW’s advances in sustainability in 2010 and serves as a marker for where it currently stands on its path to more sustainable operations.

Background

The University of Wyoming campus includes 230 buildings totaling about 6.5 million square feet on 785 acres. Total student enrollment for the Fall 2010 semester is 13,470 students on its main and satellite campuses.

Wyoming has a long history of energy development. Natural gas, oil, and coal are all developed in the state, and UW enjoys the financial benefits of this resource development. Given this history, striking a healthy balance between fossil fuel extraction and curbing carbon emissions is challenging. Nonetheless, UW has made a commitment to reducing its institutional greenhouse gas emissions by reducing energy consumption, utilizing energy from renewable sources and fostering a more sustainable culture among its faculty, staff, and students. As the only four-year institution in the state, UW hopes to serve as a leader in finding the balance between energy security, a healthy economy and an environmentally sustainable future.

Since signing the ACUPCC, the University of Wyoming has made considerable progress in its goal. Each fiscal year since the signing of the ACUPCC, the University has conducted a greenhouse gas emissions inventory (GGEI). The results of these inventories can be found at www.uwyo.edu/sustainability. The GGEIs show that the University has remained relatively steady in the amount of greenhouse gases (GHG) it emits since the baseline year of 2005. As more efficient campus buildings begin to come online – including the Kendall House, the Berry Center, Visual Arts, and the College of Business – and as the development and use of alternative energy sources become more feasible at UW, emissions relative to the total square footage are expected to decrease more significantly. Creating sustainability awareness among the campus community and beyond, and encouraging behavior that leads to less resource consumption, is also critical to reducing carbon emissions. UW has made great strides to that end, as well. The graph below depicts UW’s GHG emissions from 1998 through 2010.

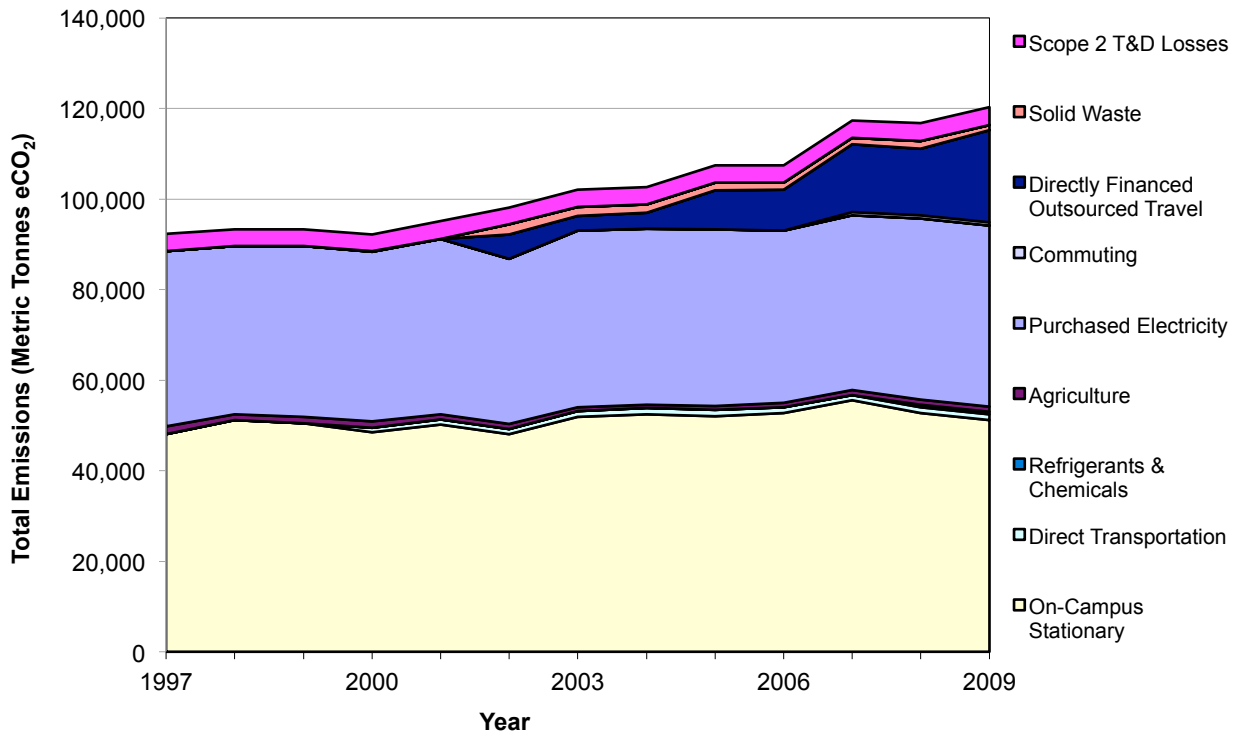


Figure 1 – Greenhouse Gas Emissions from 1997 – 2009

The remainder of this report will present and discuss selected accomplishments toward GHG reductions at UW. The sections correspond to sections in the UW Climate Action Plan.

Accomplishments

The University of Wyoming has taken steps toward reducing institutional greenhouse gas emissions, particularly within the following key areas: energy, facilities, grounds, water, transportation, purchasing and procurement, recycling and waste management, policy, and behavioral change.

Energy

UW has begun to reduce its energy consumption through a phased approach. Phase I (2009 – 2015) calls for ramping up energy efficiency across campus. Phase II (2015 – 2030) will include the implementation and use of alternative energy. Phase III (2030 – 2050) will continue building on the first two phases and include purchase of carbon offsets where increased efficiency and alternative energy are inappropriate. The following list highlights progress made in 2010 toward energy efficiency.

- Student interns completed the third annual Greenhouse Gas Emissions Inventory in the spring 2010 semester.
- A team has been created as a sub-committee of the CSC to focus on energy efficiency in utilities and facilities.
- Interior lighting systems in several core campus buildings have been upgraded.
- Windows in five core campus buildings were replaced in 2009.

- One biomass test burn in the Central Energy Plant was conducted in 2009 and a second in 2010.
- Phase one of a steam trap upgrade project was completed in summer 2010.
- Phase one of a campus building controls system upgrade is nearly complete.
- Phase two of the campus-wide controls upgrade is underway in concert with stimulus-funded projects, major maintenance expenditures and Energy Services Company (ESCo) projects.
- Phase one of a Performance Contract project using an ESCo is underway.
- Phase I of a campus metering program is complete with installation of condensate, water and electric meters for core campus buildings.
- Interior lighting upgrades continue to replace T-12 lamps with T-8 lamps, add lighting controls where appropriate and replace incandescent bulbs with compact florescent bulbs.
- Twenty-five vending misers (mechanisms that turn vending machines off during non-peak hours or when outdoor beverage machines do not need to cool due to weather) have been installed with funding from Auxiliary Enterprises. These machines are in the lowest traffic areas on campus so the savings will be the greatest. Also, after analysis of the usage of vending machines, 17 were deemed underperforming and were removed. This program will be expanded to the card-swipe type of vending machines if a demonstration test of the vending miser is successful.
- All light bulbs/ tubes in Washakie Center have been switched from T-12 to energy saving T-8 bulbs as they have needed to be replaced.
- The Residence Hall Association and the Residence Life & Dining Services Sustainability GA piloted a program to reduce electrical consumption by 6,379 kilowatt hours against the previous three year average in the month of February.

Facilities

Through the Facilities Planning office, all new buildings on campus are now constructed to Leadership in Energy & Environmental Design (LEED) standards. More efficient buildings directly affect UW's greenhouse gas emissions and result in a more comfortable and healthy indoor environment for students, faculty and staff. The following highlights UW's commitment to building toward LEED principles.

- All new buildings are being constructed to at least LEED Silvers standards.
- Two buildings will be LEED certified. The College of Business is certified LEED Gold, and the Kendall House is expected to be certified LEED Silver by spring 2011.
- ACRES Farm has a new passive solar shed, which is expected to be LEED certified in 2011.

Grounds

University Grounds Services continues to operate and develop in ways that reduce impact on the campus and community ecosystem. Tree-planting is at the heart of this goal. Trees beautify campus and sequester carbon. In the last two years, the UW Physical Plant has added nearly 200 trees.

- Over 100 trees were planted in several key campus areas in 2009.
- An additional 60 trees were planted in several targeted campus locations in spring 2010.
- More efficient maintenance equipment is being acquired as replacement purchases are made.
- Environmentally friendlier fertilizer and pesticides are being used to maintain campus grounds.

Water

Water conservation involves educating the campus community, reducing water use, and upgrading plumbing fixtures. The first step in water conservation at UW is to better understand use so that education programs can be developed and upgrades can be made in key areas. A metering program is now in place and will guide conservation measures in the coming years.

- Installation of water meters for each major facility on core campus will provide necessary data to track water usage, identify problem areas and recognize usage improvements.
- An irrigation system upgrade is being planned to replace individual controls with a centrally controlled automated system.
- Use of ground water and rain water is being evaluated for feasible applications.

Transportation

Transportation practices and services impact UW's institutional carbon emissions significantly. Facilities Planning, TransPark and Transit Services aim to help reduce UW's emissions through expanded shuttle services, bike and pedestrian routes, and adding hybrid and other alternative fuel vehicles to the fleet.

- The campus shuttle system has been expanded to include express shuttles from a remote south lot and long-term east lot.
- As part of the Long Range Development Plan (LRDP), defined transportation routes for shuttles, vehicles, bicycles and pedestrians have been developed.
- The number of electric fleet vehicles was expanded in 2009 from three to eight.
- A number of fleet vehicles can run on flex fuel including a 20% bio fuel mix.
- Six efficient diesel buses are on order and should be received by mid-2011.

Purchasing and Procurement

From paper and cleaning products to food and food service containers, UW is working to purchase products with post-consumer recycled content and products that are compostable.

- A contract was negotiated and executed to purchase 100% recycled content paper products for restrooms in campus facilities.
- Through the Procurement Office, most departments contract for 30% recycled content paper.
- Dining Services uses green cleaning products for every application where there is a certified green product on the market including: Geo Fusion 9000 Machine

Detergent, Geo Fusion Silver Fusion Presoak, Geo Mag Fusion (Pot and Pan detergent), Geo Crystal Fusion Rinse Additive.

- Wherever possible, dining locations use compostable boxes, flatware, cups, plates, bowls, to-go boxes, sushi containers, salad and sandwich containers, and other packaging. The number of compostable/biodegradable products issued in February 2010 was 8,038,800, which approximates an average month.
- Dining Services sourced a supplier and product to be able to serve only cage-free liquid egg mix.
- Dining Services has worked to increase procurement of locally-grown foods when possible. Sources within 200 miles have been found for beef patties, eggs, lamb, and lettuce when in-season. A source for apples has also been found in Western Colorado when in-season. Milk is purchased through a local dairy in Denver, CO.
- Dining Services continues to work with ACRES Farm by purchasing locally grown produce when available.
- Dining Services serves organically-grown, fair-trade coffee in Washakie Dining Center, University Catering, Book and Bean, Elements and Ross Hall.

Recycling and Waste Management

Recycling efforts at UW have advanced significantly over the last year. The improvements can be generally categorized as campus-wide collection efforts and residence hall specific efforts. The following list details the landfill diversion achievements UW has enjoyed in 2010.

- UW participated in Recyclemania in 2009 and 2010 – coordinated by UW Recycling, the Campus Sustainability class and support by the Wyoming Union. In 2010, UW placed 51/267 in the Grand Champion category; 120/346 in the Per Capita Classic category; and 62/199 in the Waste Minimization category.
- The campus recycling operation has been expanded to include additional pickup locations, one additional truck, one additional employee and a drive-through Recycling Drop-Off Center.
- Recycling pickups have been increased from bi-monthly to weekly resulting in increased tonnage collected.
- Twenty cardboard-specific dumpsters have been purchased and placed resulting in significantly increased cardboard collections.
- Recycling efforts in the Athletic venues have been expanded by adding collection points, coordinating pick-ups after events and expanding the Recycling Cyclers Program in the tailgating lots.
- Recycling and composting efforts have been expanded in Washakie Dining Hall.
- Through the collection efforts in the residence halls, a total of 11.5 tons of material collected over the academic year was redirected away from the landfill.
- Three tons of cardboard were collected from the Residence Halls on move-in weekend.
- CSC and Students for Sustainability purchased two pedal pickups (modified three-wheel bicycles) for recycling collection at UW events.
- In May 2010, 2.383 tons of reusable items were collected and donated to local charities during the “When You Move Out, Don’t Throw It Out” campaign.

- One project of the ENR 4600/5600 Campus Sustainability Class (spring 2010, 20 students) was a Furniture Round-Up to gather, store, and redistribute unwanted furniture after a semester ends and before a semester starts.
- *Summit '10 Welcome Picnic on Prexy's Pasture* (August) was a zero waste event, where all waste from the event was either recycled or composted.
- Washakie Dining Center conducted surveys/research on going tray-less within the dining hall and held two tray-less days, one each semester. These tray-less days netted a savings in pulp waste of approximately 300 pounds each day in addition to raising awareness about food waste.
- Dining Services removed drink straws from the Washakie Dining Center.
- Insulated drink containers are given to all students living in the residence halls, in an effort to promote the use of reusable, rather than disposable containers.
- Approximately 70-105 gallons of compostable waste are sent to ACRES farm everyday from Washakie Dining Center, University Catering, and the Wyoming Union Food Court.
- Dining Services worked with the Laramie landfill to test the composting of food waste from the Washakie Dining Center.
- Dining Services worked with the College of Engineering to test a machine that would convert used fryer oil to Bio-Diesel.
- Students from the Center for Volunteer Service assisted in the going tray-less project at Washakie Dining Center.
- The Good Mule Project Conference used compostable dining utensils and compostable materials.
- Summit View Apartments deconstruction project estimates 85% of materials from deconstruction are being recycled (approximately 15,000 yards of materials).

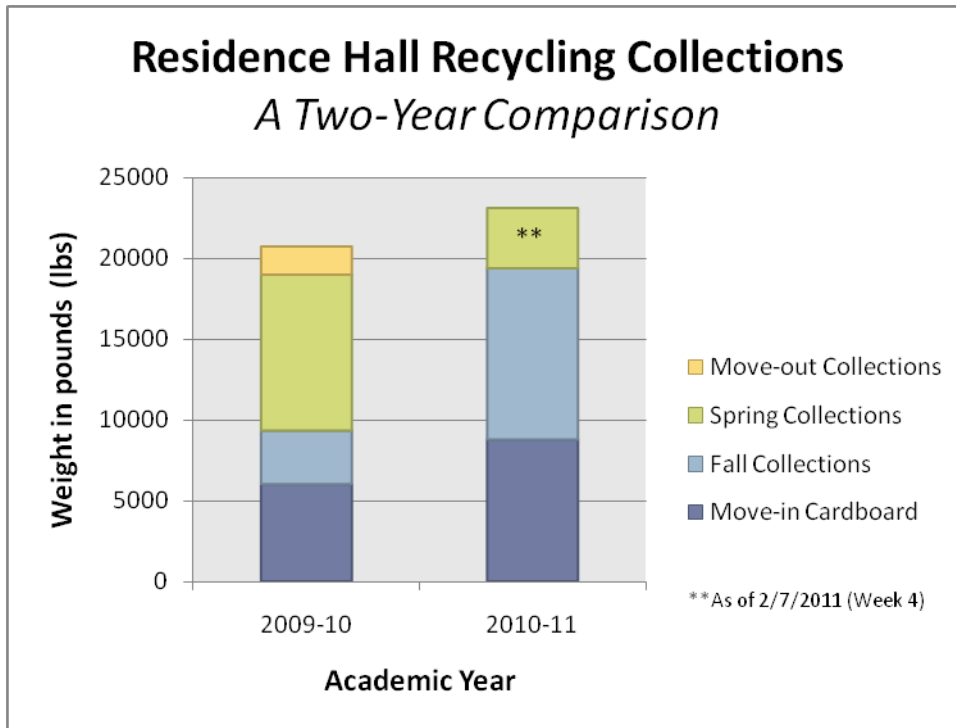


Figure 2 – Recycling progress in the Residence Halls, Fall 2009 – January 2011

	2009-10	2010-11
Move-in Cardboard (lbs)	5990	8756
Fall Collections (lbs)	3289	10645
Spring Collections (lbs)	9708	3698
Move-out Collections (lbs)	1705	-

Figure 3 – Cardboard collection in Residence Halls, Fall 2009 – January 2011

Policy

Policy related to more sustainable operations has helped institutionalize sustainability at UW. Both Facilities Planning and the Residence Hall Association have adopted new policies in 2010 to advance sustainability in their operations.

- All new construction is required to meet or exceed LEED Silver construction standards.
- The Residence Halls Association (RHA) modified its constitution to convert designated capital improvement funds within their budget to dollars committed to sustainability issues within the residence halls.
- Physical Plant has executed annual paper product purchasing agreements to purchase products with 100% recycled content. These products are used in all restrooms and labs.

- Procurement Services encourages and has negotiated purchasing agreements for supplies with recycled content.

Behavioral Change

Increasing awareness and encouraging changes in behavior among the students, faculty and staff can result in a significant decrease in GHG emissions. The following list highlights some of the lifestyle and educational programming sponsored by the CSC and others last year.

Behavioral Change - lifestyle

- The University of Wyoming ranked among the nation's 286 most environmentally responsible colleges, according to the *Green Guide*, published by the Princeton Review and the U.S. Green Building Council.
- University of Wyoming received a B on the Sustainable Endowment Institute's green report card. This is an improvement from the 2009 score of B-.
- A Green Cleaning program was implemented in 2010 with a first year reduction of 25% in routine cleaning chemicals.
- Three students were hired as interns to work on CSC efforts - two on the FY 2010 GHG emissions inventory and one on planning for the Wyoming Sustainability Summit.
- The CSC wrote a successful proposal for an AmeriCorps intern position for 2010-2011. A UW student was hired into the position to create and conduct online surveys for students, faculty and staff in 2011.
- Over 100 students helped weatherize homes around Laramie for the 2010 Days of Dialogue Service Day.
- Alternative Spring Break trips were led to the Grand Canyon and to the Everglades where students spent spring break helping preserve the native ecology and wildlife.
- Insulated drink containers were given to all students living in the residence halls, in an effort to promote the use of reusable, rather than disposable containers.
- RHA and the GA of Sustainability awarded the winning residents of the Recycling and Electrical Consumption Challenge with recycled grocery bags.
- RHA created a new executive position, the Sustainability and Community Service Officer, committed to sustainability issues within Residence Life and Dining Services.
- The RHA menu committee worked with Dining Services on a tray-less campaign in Washakie. A trayless day was held November 2 in the Washakie Dining Hall.

Behavioral Change - education and outreach

- A team has been created as a sub-committee of the CSC, which focuses on education and outreach to the campus community.
- A website has been created, and is continually maintained for the CSC, at <http://www.uwyo.edu.sustainability/> to make the sustainability vision, goals, reports and information readily available.
- A Campus Sustainability group has been created on WyoWeb, the UW intranet portal, to share files, collaborate on action steps and provide work areas for sub-committees and teams.

- A media relations program was implemented in cooperation with UW Media to publish sustainability-related articles twice per month.
- Development of a CSC logo was unveiled at Earth Day 2010 events. The logo was chosen through a logo contest held in the spring of 2010. The winner was a UW student, chosen from 58 entries and awarded a \$300 prize.
- The first Wyoming Sustainability Summit was held April 12-13, 2010 at the UW Conference Center in Laramie. Over 100 people attended the two-day event. The Summit was co-sponsored by the Campus Sustainability Committee, the Haub School of Environment and Natural Resources, and Residence Life and Dining Services with support from the Argosy Foundation.
- UW's collegiate chapter of the American Marketing Association and Alpha Kappa Psi co-sponsored the 3rd annual Sustainable Business Practices forum in October 2010.
- The Environment and Natural Resources program organized a "Green for Green" 5k on April 17th, 2010. Volunteers held signs along the race route to inform runners of various sustainability tips such as eating locally, properly insulating homes, and using CFL bulbs.
- Academic Affairs and the Office of Research and Economic Development sponsored a public lecture by world-renowned ecologist, E.O. Wilson in September 2010.
- Over 10 members of the CSC attended the Association for the Advancement of Sustainability in Higher Education (AASHE) annual conference in Denver in October. Several committee members gave presentations and participated in panel discussions on topics ranging from implementing a CAP with a campus-wide committee to institutional recycling to teaching a project-oriented sustainability class.
- The CSC participated in the UW Homecoming Parade in October. The CSC entry featured the Physical Plant's electric truck and the Recycling Cybers pedal pickups. Recyclables were collected along the parade route.
- The CSC hosted an informational booth in the Union Breezeway on Campus Sustainability Day (October 20).
- University of Wyoming was presented with the first Channel 5 Sustainability Award by Channel 5 News in Cheyenne. A 30-minute program featured some of UW's achievements in green building and recycling.
- RHA hosted information booths on campus on Campus Sustainability Day (October 20) and Earth Day (April 22nd).
- The GA of Sustainability, with support from RHA, hosted many educational events throughout the school year that educate residents on various topics such as drinking water, electrical usage and real benefits of recycling.

Curriculum and Research

As the only four-year institution in the state, UW has a responsibility to take the lead in conducting research and offering educational opportunities in the areas of climate science, climate policy and sustainability. In the coming years, we intend to integrate academic efforts into advancing sustainability through the expansion of existing curricula and the development of

new programs and engaging in ongoing and future research efforts. The following describes the academic accomplishments of UW related to sustainability in 2010.

- The University of Wyoming's School of Energy Resources (SER) received \$1.55 million from the Fossil Energy National Energy Technology Laboratory, under the U.S. Department of Energy for research and demonstration of geologic carbon sequestration. These funds will help SER prepare for field tests to fully characterize a potential CO₂ storage site in western Wyoming and to demonstrate the long-term storage of sequestered carbon.
- The project-oriented Sustainability Class is now in its fifth year. Several student projects from this class have been implemented across campus and continue to operate as part of the campus sustainability program.
- A sustainable Business Practices minor was added by the College of Business, Fall 2010.
- A new PhD in Marketing with a focus on Sustainable Business Practices began in Fall 2010.

Next Steps

Over the next five years, University of Wyoming will build on the progress toward more sustainable operations reported above. As outlined in Phase I (2009-2015) of the Climate Action Plan, improving energy efficiency across campus will be critical to reducing our carbon emissions. Additionally, exploring opportunities for renewable energy development and use is underway. For example, UW has acquired a small, residential-scale wind turbine, and plans are underway to install it on campus. Although it will serve mainly as a demonstration, it will generate some electricity. Furthermore, the Campus Sustainability Committee is currently drafting a paper in response to the UW Utility Master Plan that will evaluate the opportunities for greater use and development of renewable energy such as wind, solar, and geothermal.

As UW continues to renovate existing buildings and construct new facilities, it will continue to focus on building performance and efficiency. Specific percentage targets for energy performance, renewable energy production, water efficiency, and material resources used or consumed by facilities will be set. In order to better conserve water, existing plumbing fixtures will be replaced with new low flow and occupancy sensor controlled fixtures. Additionally, plans to conduct a waste audit – including solid waste, wastewater, and heat – to identify opportunities to reduce waste are underway. Special attention will also be paid to the development and beautification of natural areas on campus. And in the next five years, UW Grounds Services will create a plan to protect or restore campus open spaces for natural habitats and connection to the environment.

Efforts to purchase more sustainable products and divert more waste from the landfill are ongoing. In the next five years, options for ensuring that purchases contain 10 percent post-consumer materials or 50 percent rapidly renewable resources will be developed. The recycling program will be further expanded and promoted in an effort to reach a 20% increase in campus recycling, and to reuse or recycle 50% of durable goods by weight or volume.

Efforts to expand sustainability curricula offerings on campus and community awareness are underway. In the next five years, we plan to establish a general sustainability minor and sustainability-themed Freshmen Interest Group (FIG). Further, the second Wyoming Sustainability Summit will take place in Laramie in spring 2012 with an expanded program targeted to community and business leaders from across the state.

Conclusion

Over the past eighteen months, the University of Wyoming has been successful in advancing campus sustainability in several major areas. The University's particular focus in the areas of energy, facilities, grounds, water, transportation, purchasing and procurement, recycling and waste management, policy, and behavioral change suggest that the UW campus is on its way to achieving its goal of significantly reducing its carbon emissions. In fact, even in light of tremendous growth in square footage (about 400,000 SF since 2006), campus stationary and purchased electricity have remained fairly steady. This is a testament to ramping up energy efficiency in existing buildings and adding more efficient buildings through capital construction projects.

Plans for further improvements are ongoing and demonstrate that the University of Wyoming will continue to progress toward a more sustainable future. The Residence Life and Dining Services Sustainability GA position, in particular, shows the university's commitment to a consistent creation and enhancement of sustainable initiatives among students living on campus. Implementation of more local food options at Washakie Dining Center and consideration of other dining initiatives represent behavioral changes that will help move the campus toward more sustainable operations through behavior modification. The requirement that all new campus buildings are built to LEED standards and the shift in purchasing toward products with more post-consumer recycled materials and Energy Star qualified products demonstrate a commitment to sustainability from across campus.

In addition to the University of Wyoming's progress in reducing GHG emissions, the education and outreach efforts show a commitment to encouraging behavior change among the campus community. Approaches that involve students directly and provide them with hands-on experience, such as the greenhouse gas emissions inventory internships and the sustainability GA in Residence Life & Dining Services, conserve staff resources and provide valuable learning opportunities for students.

Although UW still has much ground to cover before it reaches its goal of carbon neutrality by 2050, the accomplishments highlighted in this report provide a solid foundation upon which to build future programs, initiatives and policies.