Summary

The University of Hawai‘i Office of Sustainability (UHOS) was formally established in February 2015 with the electronic signing of the Executive Sustainability Policy by UH President David Lassner.

UHOS functions as a backbone organization, providing support to the campuses to enhance the existing sustainability work under way, and much-needed coordination capacity for campuses to share information and resources with each other so that our institution as a whole can become more agile, more intelligent and highly impactful.

In its start-up year, UHOS has also worked closely with the statewide sustainability planning efforts currently underway, representing the University of Hawai‘i at the statewide coalition of public, private and community organizations that are working to establish targets, goals and metrics to track and measure our statewide progress in 6 key areas: Clean Energy, Waste Reduction, Natural Resource Management, Local Food, Smart Sustainable Communities, and Green Workforce and Education (visit the State of Hawai‘i’s online Sustainability Dashboard, and Hawai‘i Green Growth website for more information).
Policy and Planning

In order to teach sustainability effectively, we must first demonstrate our commitment to sustainability by developing ways and means to operate our facilities today without compromising the needs of future generations, and plan to meet future needs whilst enhancing future generations’ ability to create vibrant and thriving livelihoods.
Systemwide Sustainability Councils
Two formal systemwide councils have been formed with representatives from each campus who are experienced practitioners in the areas focused upon by each council.

The councils help to enhance the sensory capacity of executive management in order to improve our decision-making abilities; strategic integration of the various formal and informal networks that comprise our Adaptive Operating systems to our formal Command-Control institutional hierarchies support the university to reach its full potential as a knowledge enterprise.

- **Sustainability (Operations) Council**: Focus on integrating sustainability values into how we operate our campuses to reduce negative environmental impact, lower operating costs, and modernize campus facilities.
• **Sustainability Curriculum Coordination Council**: Focus on coordinating existing sustainability-related curriculum to develop robust sustainability studies programs utilizing existing assets and resources, supports new sustainability curriculum development.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Campus</th>
<th>Email</th>
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</thead>
<tbody>
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The councils meet on an on-going, as-needed basis and are currently focused on two primary strategic initiatives:

1. Coordinating **Campus Sustainability Plans** into a shared systemwide framework to track, measure and report on progress.
2. Coordinating **Sustainability Curricula** across campuses to develop world-class Sustainability Studies teaching and learning program(s).
**Campus Sustainability Plans**

Since President Lassner formalized the *Executive Sustainability Policy* in February 2015, all ten campuses have been drafting Campus Sustainability Plans (CSPs) to present at the 4th Annual Hawaiʻi Sustainability in Higher Education Summit (March 10-12, 2016).

Representatives from the Campus Sustainability Committees will be participating in two half-day working sessions at the annual summit to share key elements of their draft CSPs to each other so that common principles can be distilled and compiled into a framework to measure and report progress system-wide, whilst supporting each campus to plan and implement in a way that is appropriate and authentic to its unique context.

**Energy Management**

Ten years after the University of California (UC) system established its Sustainability Office, UC consolidated its Energy Management office and its Sustainability Office in order to realize efficiencies in data tracking and reporting, and staffing (impact ratios).

UHOS is working to establish the UH Energy Management office within its unit so that a dedicated team can be developed to focus on identifying, implementing, tracking and reporting on improved energy performance towards our Net Zero Energy goals.

Key internal and external stakeholders including Planning and Facilities staff from all campuses, the electric utility, Hawaiʻi Energy, the PUC, the Energy Excellerator, Blue Planet, Ulupono Initiative, and the Hawaiʻi State Energy Office have been working together to help develop a Strategic Energy Partnership to help UH develop a comprehensive and holistic strategy to reduce energy consumption across the campuses.

UHOS is also working closely with the utility, HNEI, and other partners to develop the proposed UHWO mauka lands Solar PV project. An initial feasibility study has determined that it is technically possible to develop a 100MW utility-scale solar farm on the land above the freeway at UHWO campus. Work to address the fiscal and regulatory issues facing the project is ongoing.

In May of 2014, President Lassner convened members of the UH Board of Regents, UH administration, facilities managers, and key partners to explore how we can reduce costs and improve the energy efficiency, energy management and renewable energy opportunities on our campuses.
The key priorities identified at this event are addressed below:

**Priority One: Building Submeters**
Over 60 electrical submeters have been installed across 23 buildings at UH Mānoa campus since May 2014. Fundamental to successful energy savings transformation is the prerequisite of smart building level submetering, monitoring and energy benchmarking of campus buildings:

![UH Mānoa Submetering Phase I & II](image)

**Priority Two: Administrative Commitment, Clear Targets, and Right-Sized Planning**
In June of 2015, Governor Ige passed into law Act 99 (Session Laws of Hawai‘i 2015) which established a collective goal for the University of Hawai‘i “to become net-zero with respect to energy use, producing as much (renewable) energy as the system consumes across all campuses by January 1, 2035.”

Net-Zero Energy is achieved when an organization’s total energy consumption is equal to the total renewable energy provided (via on-site generation or purchased from certified renewable energy providers).  

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1 Click [here](#) to access the read the Annual report to the 2016 State Legislature on Net-Zero Energy for UH.
There are two primary variables that must be managed:

1. **Energy efficiency** (reducing total energy use)
2. **Renewable energy** (providing enough to provide for total energy used)

<table>
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<tr>
<th>NET-ZERO DASHBOARD BASELINE FY2014-15</th>
<th>kWh</th>
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<tbody>
<tr>
<td>Total Energy Consumed(^2)</td>
<td>195,006,402</td>
</tr>
<tr>
<td>Total Renewable Energy Provided</td>
<td>3,768,606</td>
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**KEY PERFORMANCE INDICATORS FY2014-15:**
- **Energy Consumed:** 195,006,402 KWH
- **Energy Efficiency Savings\(^3\):** (656,866) KWH
- **Renewable Energy Produced:** 3,768,606 KWH

**Priority Three: Resources – Funding and Staffing**

UHOS has been working to establish a dedicated source of low-cost capital to accelerate implementation of energy efficiency projects at all campuses via a Green Revolving Fund (GRF).

A GRF is an internal fund dedicated to implementation of energy efficiency, renewable energy, and other sustainability projects that generate cost savings. These savings are tracked and used to replenish the fund for the next round of green investments, thus establishing a sustainable funding cycle while reducing operating costs and environmental impact.

Critical to the success of a GRF is campus-level buy-in to commit savings realized from energy efficiency investments to replenish the initial capital outlay for redeployment towards additional projects; a BOR policy mandate to support this would help the University to achieve the Executive Sustainability Policy directive EP 4.202, Section I.D to “establish mechanisms to track and re-invest savings from sustainability initiatives in order to maximize efficiencies and reduce waste.”

GRFs have gained momentum across the nation. According to the Association for the Advancement of Sustainability in Higher Education, there are at least 85 universities that use GRFs as part of their sustainability programs, like Boston University, George Washington University, Stanford University and University of Notre Dame.

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\(^2\) Includes non-campus facilities.

\(^3\) Estimated kWh savings data provided by Hawai‘i Energy based on rebate incentives paid FY 2014-15.
One of the first GRF pilot projects underway with UH Mānoa Electrical Engineering Dept and Richardson Law Library is an LED lighting retrofit that is anticipated to repay the entire project costs via energy savings realized in under 24 months.

UH Hilo is developing an exterior bi-level LED lighting upgrade which is anticipated to repay its project costs via energy savings realized in just over 5 years, and UHWO is working on an upgrade to thermostat controls in its buildings that is anticipated to repay its project costs in just under 2 years.

Working in conjunction with Hawai‘i Energy and other partners, approximately $3.8M in potential energy efficiency projects have been identified by UHOS that will yield in excess of an estimated $900k in energy cost savings. When internally managed via a GRF, this expenditure would repay itself in approximately 3 years, yielding a cash-on-cash ROI of 34%.

HB2240 and SB2013 are proposed bills currently under consideration by the 2016 State Legislature that would establish a green special fund to create a statutory framework to house the GRF within.

**Priority Four: Address Procurement and Processes**

Work to address procurement and implementation processes is integrated into the GRF pilot projects, which allow for new procedures to be trialed in real time at a scale that permit our planning, facilities, and fiscal teams to learn and improve quickly together.

For example, UH has entered into an MOU with Blue Pillar and Carbon Lighthouse, two companies in the current Energy Excellerator cohort to trial innovative technology that could allow us to ‘leapfrog’ our current energy data access challenges.

The MOU is structured utilizing a cost-share that has the companies fronting almost $1M in upfront costs to deploy their technology to optimize energy performance at the building level, and transfers risk to the companies by committing the university to participate only if the deployment identifies energy projects that are financially and technically viable as determined by UH.

**Priority Five: Attitude Transformation - Education, Communication, Coordination, and Fostering Change**

UHOS is focused on addressing this priority by ‘creating the conditions for cultural change to occur’. It is disingenuous to ask our campus community to change their behaviors to save energy when certain campus facilities are obviously lagging in energy performance.
Therefore our strategy is to focus short-term efforts on implementing high-impact energy efficiency projects (such as the LED retrofit currently under way at Richardson Law Library) whilst working with students to develop coordinated student-driven outreach and education to foster sustainable behavior change utilizing a science-based, field-proven methodology known as Community-Based Social Marketing (CBSM).

Hawaiʻi Energy funded two part-time Energy Fellows beginning January 2016 to conduct the research and planning necessary to craft a CBSM campaign designed to reduce energy usage in campus offices. The students are planning to complete this work by autumn 2016 for launch in Spring 2017, and are creating a CBSM handbook so that other projects to foster sustainability behavior can be developed utilizing this framework.

In addition, one of the Energy Fellows is working with Hawaiʻi Energy engineers to conduct a lighting audit of UH Athletics facilities which will identify other potential low-risk / high-impact energy efficiency projects.

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**Teaching and Learning**

President Lassner recently shared a personal epiphany with key leaders from UH, Kamehameha Schools, and Master Navigator Kalepa Babayan: the president has been having the same conversations around sustainability with many different groups across the campuses who are doing incredible work, but are not yet working with each other.

Therefore President Lassner convened a gathering of leaders at UH-Hilo on February 12, 2016 which included leaders in Hawaiian Studies, STEM, and Sustainability curriculum development to begin this effort to collaborate and coordinate this work so that we can maximize our positive impact.

Master Navigator Nainoa Thompson addressed the assembly, and highlighted the urgent need for a rapid response from the university to help our local and global communities rise to overcome the many complex challenges presented by a rapidly changing climate.

This work will continue at the March Sustainability Summit, where key faculty from each campus who are actively developing sustainability curriculum will be participating in two
half-day working sessions at the annual summit to share campus programming with each other so that an inventory of sustainability courses can be compiled.

This working session will also be looking at models of how other institutions have catalyzed institutional transformation through integration of sustainability into their core mission and business, so that we can adapt and apply proven models to develop a strategy and implementation plan for rapid transformation at the University of Hawai‘i.

**Student Engagement**
In 2015 UHOS was able to support 4 paid student positions, including:
- 1 x Student Sustainability Coordinator
- 1 x Student Sustainability Fellow
  (in partnership w/ UH Mānoa Office of Student Affairs)
- 2 x Energy Fellows
  (in partnership w/ Hawai‘i Energy)

**President’s Green Initiative Awards**
In November 2015, the President’s Green Initiative Awards were launched across all ten campuses. With financial support from private sector partners Johnson Controls and Hawaiian Electric Industries, the student award categories were designed to create additional financial resources to support students’ academically anchored sustainability work, and increase the number of civically engaged students on UH campuses involved in meaningful sustainability-related projects with real-time positive impact.

- **Green Project Implementation Awards** - Up to $10,000 for student-led sustainability project with measurable outcomes on UH campus or in the community.
- **Green Student Leader Awards** - up to $5,000 cash awards for students who take on leadership roles in sustainability related activities.

18 student-led sustainability projects were submitted, and 27 students were nominated by their peers as ‘Green Student Leaders’ in just under two months. All nominees / project submittals have been invited to attend the 4th Annual Hawai‘i Sustainability in Higher Education Summit in March to be recognized, present their project proposals, and find out who the final winners (two in in each category for total of $25k in cash awarded to students). In addition, 39 staff / faculty were nominated to be recognized for their leadership in sustainability.

Alaska Airlines donated $70k to establish a student sustainability scholarship over the next three years that will be announced and awarded at the March Sustainability Summit.
Summary of funds raised towards student sustainability efforts calendar year 2015:

<table>
<thead>
<tr>
<th>Fund</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Alaska Airlines Scholarship</td>
<td>$70,000.00</td>
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<tr>
<td>President’s Green Initiative Awards</td>
<td>$25,000.00</td>
</tr>
<tr>
<td>Sustainability Summit Sponsorship</td>
<td>$35,000.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$130,000.00</strong></td>
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The following report on student sustainability coordination and activities was submitted in January 2016 by Kristen Jamieson, UH System Student Sustainability Coordinator:

**UH Mānoa Soup**  
*October 14th, 2015 Halau o Haumea (UH Mānoa Hawaiian Studies)*  
HNL Soup is a microgranting dinner supporting creative and sustainable projects that benefit the community and the planet. The concept is that for a donation of $12, attendees receive soup, salad, bread and a vote. At the event, attendees eat, talk, share resources, and vote on the project they think benefits the city the most.

At the end of the night, the organizers collect the ballots and the winner walks home with funds to carry-out their project. At the first UH Mānoa SOUP, over 60 people participated in the event. The winner, Elia Bruno, received $600 to begin the HNL Tool Library project. The funds have allowed him to create a website and register as a non-profit organization- the first steps in a vibrant and empowering project that encourages sharing over ownership and “access over excess.”
Show Me Your Cans Tailgate Recycling Campaign  
*September 23rd, 2015 Facilities Parking Lot / October 16th, 2015 Legacy Pathway*

Aloha Stadium only collects recyclables if a volunteer organization agrees to pick up and sort the recyclables off site. In collaboration between UH Facilities, Aloha Stadium, SOFT, Sustainable UH, Geology Club, Mānoa Maniacs, TKE Fraternity and KEO Fraternity, we successfully diverted over 150 lbs of recyclables from the landfill.

UH Facilities transported the recyclables from Aloha Stadium to UH Mānoa and provided us with bins, bags and gloves, as well as a truck for redeeming the recyclables. Student volunteers bravely hand sorted hundreds of bags of recyclables and rubbish to be redeemed. This effort also raised over $300 for Sustainable UH to put towards a retreat and food for future events.

Resident Housing Association Student Engagement

Engaged students from the Residence Hall Association in a discussion around potential sustainability projects in the dormitories. These relationship could lead to collaboration with system efforts to increase the efficiency of campus dormitories. Students expressed interest in water efficiency, air conditioning awareness, recycling expansion and food waste education.

Hawai‘i Public Utilities Commission Student Engagement  
*October 27th, 2015*

A handful of students attended the Public Utilities Commission to give testimony on their thoughts concerning the HECO and NextEra merger. Prior to the public hearing, students participated in sign waving to raise awareness about the issue.

Weigh the Waste Cafeteria Awareness

Students educated cafeteria diners in Hale Aloha about food waste as a reduction effort. In collaboration with Sodexo and students from the Residents Hall Association, volunteers practiced skills in environmental outreach. Students approached diners, shared facts in a participatory format and facilitated a quiz game in exchange for small prizes. Dining participants left the experience with strategies to minimize their contribution to food waste, such as sampling unfamiliar dishes prior to selecting them and asking for smaller portions.

Mānoa Sustainability Council

Participation in monthly Mānoa Sustainability Council meetings to provide student voice and enthusiasm in this newly reinstated group. Provide updates on student sustainability efforts and build relationships with key stakeholders on campus.
Paper Towel Reduction Hui
Convening key campus stakeholders in a discussion around paper towel reduction at UH Mānoa. This group is designing a pilot project to replace paper towel use with personal reusable towels in strategically selected buildings on campus. *(UHOS note: a separate student study found that UH Mānoa generates 62 tons of paper towel waste/year)*

Coordinating Sustainable UH
Convened weekly meetings for Sustainable UH to build student community around sustainability and offer mentorship to budding student leaders. Students explored potential projects to improve campus sustainability, learned about agenda planning and discussed logistics for campus projects including *UH Pedal Power, Mānoa Tool Library, Show Me Your Cans, Mānoa SOUP* and a spring retreat.

Compost Pilot Project
Designed, coordinated and implemented a student led research project in using an aerated static pile compost system to absorb food waste produced on campus. This project diverted food waste from UH K. Ike Housing complex to be composted and used by the SOFT farm. This project was presented at the Fall Undergraduate Showcase and received Honorable Mention for the poster presentation.

Next Steps
In 2016 UHOS is focused on action and implementation of energy efficiency projects to develop mechanisms to track, harness and reinvest savings from sustainability projects, establish proof of concept for the GRF and demonstrate an ability to implement and execute projects in a timely manner.

Harnessing savings realized from energy efficiency and sustainability projects is a simple mechanism that can ensure the long-term economic viability of sustainability initiatives at the University of Hawai‘i. Buy-in and agreement by campus leadership is crucial for the success of this program.

UHOS continues to develop resources to support student sustainability leadership, including internships and fellowships that enhance teaching and learning, provide valuable real-world experiences for students, and expand our resources cost-effectively to help address operational needs of the campuses.
The UHOS also continues to provide support to the Office of the Vice President for Academic Affairs, providing coordination capacity for the sustainability curriculum, teaching and learning efforts under way at the campuses as directed by President Lassner.

Finally, the UHOS has been asked to help articulate a strategic high-level commitment that the University of Hawai‘i could announce on the global platform that is IUCN-World Conservation Congress in September 2016.

Careful thought should be given to this request, as the right commitment could help to attract significant resources and catalyze rapid institutional transformation.