

January 2020

Sustainability Performance Plan

University of Connecticut



greenergovCT

Approvals

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This report was written in compliance with section 5 of Executive Order 1.

Brief EO 1 Background

Released by Governor Ned Lamont on April 24, 2019, Executive Order 1 (EO 1) directs Executive Branch agencies to demonstrate environmental leadership and cost savings by reducing their greenhouse gas emissions from energy use in buildings and vehicles, and reducing water use and waste generation.

Immense planning and mobilization are underway to make progress on EO 1. Data collection is ongoing to gather the necessary baseline data for benchmarking progress. The initial data collection process will be completed in April 2020 and will allow annual progress to be measured going forward. In addition, cross-agency project teams have been formed and are working to develop a suite of sustainability strategies and guidance to help agencies achieve the environmental targets set forth in EO 1.

GHG

45% reduction in GHG emissions below 2001 levels

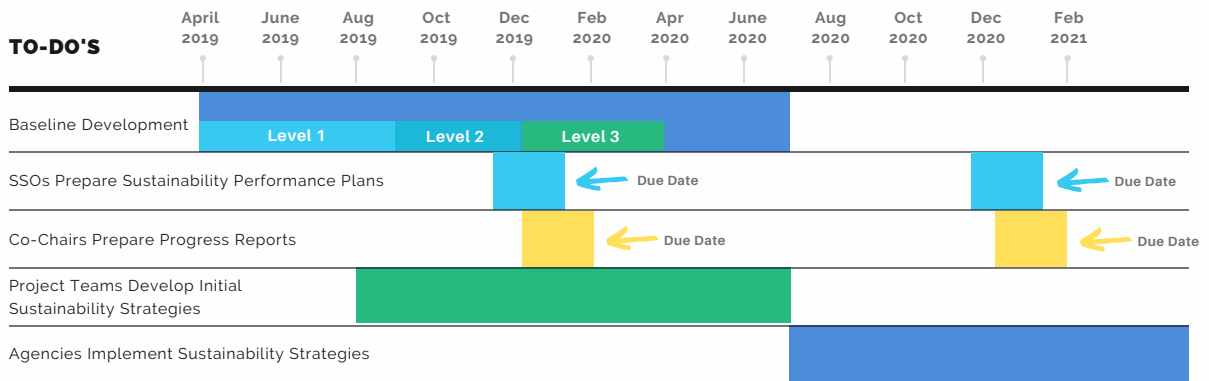
WATER

10% reduction in water consumption from a FY20 baseline

WASTE

25% reduction in waste disposal from a FY20 baseline

EO 1 calls for Senior Sustainability Officers to draft annual Sustainability Performance Plans to detail agency progress and necessary goals, actions, and responsible parties to achieve the targets set in EO 1. This plan will evolve next year once all baseline data has been collected and agencies are encouraged to begin implementing sustainability strategies.



Intro to UConn and EO 1

UConn's mission

The University of Connecticut is dedicated to excellence demonstrated through national and international recognition. Through freedom of academic inquiry and expression, we create and disseminate knowledge by means of scholarly and creative achievements, graduate and professional education, and outreach.

With our focus on teaching and learning, the University helps every student grow intellectually and become a contributing member of the state, national, and world communities. Through research, teaching, service, and outreach, we embrace diversity and cultivate leadership, integrity, and engaged citizenship in our students, faculty, staff, and alumni. As our state's flagship public University, and as a land and sea grant institution, we promote the health and well-being of citizens by enhancing the social, economic, cultural, and natural environments of the state and beyond.

UConn participation in the joint EO 1 and Greener Gov CT initiative

UConn has elected to participate in the EO 1 and Greener Gov CT initiative as a non-mandatory partner in order to continue to drive its ongoing commitments to achieving carbon neutrality, maximizing energy and water efficiency, and minimizing its waste generation while also sharing best practices with other state agencies.

Key UConn staff involved in EO 1

Michael Jednak, Senior Sustainability Officer, Associate Vice President of Facilities Operations

Richard Miller, Senior Sustainability Officer, Director, Office of Sustainability

Stanley Nolan, Director, Utility Operations & Energy Management, Facilities Operations

Aris Ristau, Director of Building Services, Facilities Operations

Mark Bolduc, Energy & Compliance Manager, Facilities Operations

Katie Milardo, Water & Compliance Manager, Facilities Operations

Patrick McKee, Sustainability Program Manager, Office of Sustainability

Performance Data

The following data was captured based on your agency's profile in the state utility tracking software: EnergyCAP. Future reports will compare data from the previous year.

UConn

Category	Use	Cost
FY 19 Building Energy Use*	1,793,157 MMBtu	\$20,365,871
FY 19 Vehicle Gasoline Use**	168,441 Gallons	\$358,779
FY 19 Vehicle Diesel Use	110,202 Gallons	\$206,078
FY 19 Total GHG Emissions	114,300 mtCO₂e	
FY 19 Building Water Use	275,407 kGallons	\$1,393,572
FY 19 Total Utility Costs		\$22,324,299

Summary includes Storrs, Avery Point, Stamford, Downtown Hartford, Depot, Law School, Waterbury and County Cooperative Extensions.

*Building energy use includes electric, natural gas, oil, propane, steam, and chilled water.

**Vehicle gasoline and diesel data was estimated based on motor pool actual recorded use and unit costs obtained from a representative bill.

A NOTE ABOUT THIS DATA

This data was pulled from EnergyCAP in February 2021. It is consistently improving in accuracy as historical and building-specific data is populated.

EnergyCAP is a utility bill tracking and energy management software that allows the state to track its complex array of buildings, accounts and meters. Individual user accounts and training can be set up for agencies to gain access to this tool and take control of how their buildings are performing.

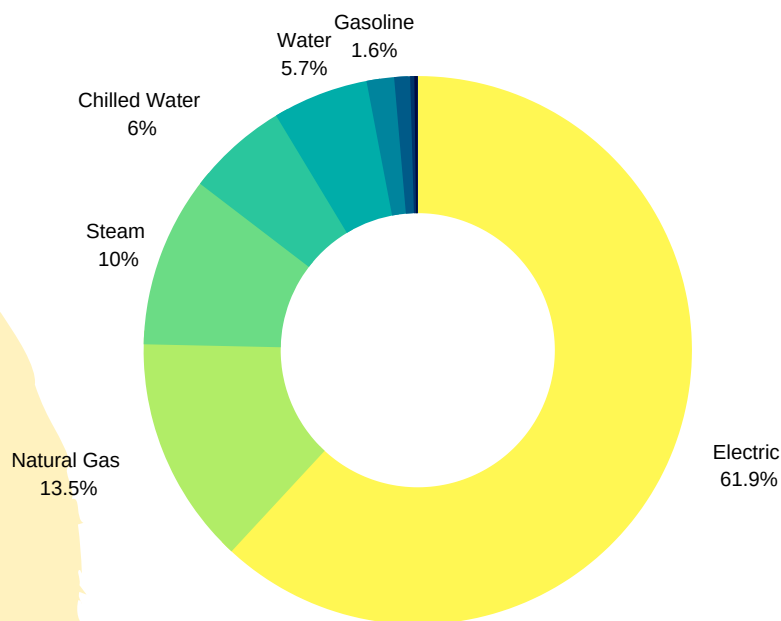
EnergyCAP®

Performance Data cont.

The graphs below provide a snapshot of your agency's utility use and costs for FY2019.

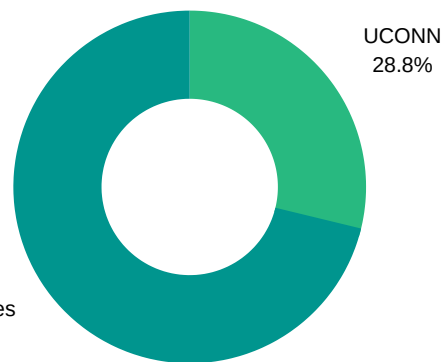
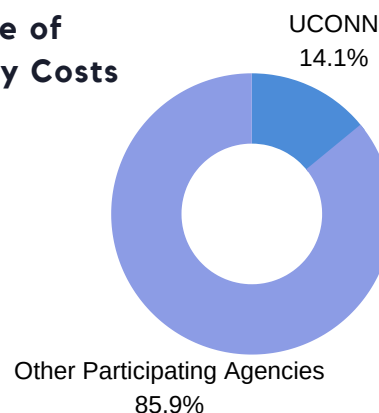
At this time, utility data on agencies occupying space owned by another state agency may or may not be linked to their EnergyCAP accounts. Future reporting aims to link utility data consistently to agencies using spaces they don't own.

Commodity Cost Breakdown



Commodity	FY19 Cost	Cost Breakdown
Electric	\$13,705,639	61.4%
Natural Gas	\$2,980,217	13.3%
Steam	\$2,224,748	10.0%
Chilled Water	\$1,320,053	5.9%
Water	\$1,251,397	5.6%
Propane	\$54,319	0.2%
Oil	\$44,602	0.2%
Gasoline	\$358,779	1.6%
Diesel	\$206,078	0.9%

Share of Utility Costs



Share of GHG Emissions

Sustainability Projects

How many projects has your agency implemented that had a positive impact on sustainability in FY2019? Include projects relating to infrastructure improvements as well as behavioral change that took place in owned, leased, or occupied space and were either in progress or completed in FY2019

65

Since 2008, UConn has utilized an internal revolving green fund to support Energy Conservation Measures and Sustainability Initiatives. This fund is supported solely by CT Class III Renewable Energy Credits generated by our Combined Heat and Power Cogeneration Facility combined with rebates and incentives received through Partnership Agreements with Eversource, Yankee Gas, SCG, CNG, and Groton Utilities. During FY-2019, this fund enabled:

- 44 lighting projects (LED lighting retrofits with lighting controls);
- 11 heating-related projects (steam trap repairs, heating controls, insulation and weatherization projects);
- Five (5) retro-commissioning projects;
- One (1) cooling-related project (ventilation improvements); and
- Two (2) behavioral-related projects (Student energy and water conservation competition and a waste reduction initiative to educate in-coming first and second year resident students on proper recycling procedures on campus).

Sustainability Projects cont.

Please provide more detail on up to **three** of your agency's FY2019 projects below and on the next page.

1

EcoMadness**Project location:** UConn Storrs Campus**Type of Project:** Behavioral - Combo**Brief Description:** At the beginning of each fall semester, the Office of Sustainability leads a one-month energy and water conservation program in October called EcoMadness in its residence halls. In 2019, recycling education and behavior tracking was added to the program.**Implementation Status and Timeline:** Complete - Oct. 1 – 31, 2018, recurring annually**Realized or Anticipated Benefits:** The fall 2018 EcoMadness competition resulted in an overall reduction from the September baseline resulted in a 12.5% reduction in energy usage and a 6.8% reduction in water consumption in the participating halls.

2

Energy Conservation Projects**Project location:** Storrs, Avery Point, Law School, Downtown Hartford and Waterbury campuses**Type of Project:** Structural - GHG**Brief Description:** In FY-2019, UConn completed 61 energy conservation projects across its Storrs, Avery Point, Law School, Downtown Hartford and Waterbury campuses which resulted in both energy and cost savings as well as greenhouse gas reductions. Projects included LED lighting retrofits with lighting controls, steam repairs, heating control improvements and weatherization and insulation projects to various buildings. Eversource and CNG provided financial incentives to assist in the completion of many of the projects. These projects covered approximately 1.6 million square feet of building space.**Implementation Status and Timeline:** All projects completed in 2019**Realized or Anticipated Benefits:** The completion of these energy conservation projects described above will result in annual energy savings of approximately 3.5 million kWh in electricity and over 23 million cubic feet of natural gas. These projects will also result in more than 3,100 metric tons of greenhouse gas reductions. UConn also estimates over \$550,000 in annual energy cost savings.

Sustainability Projects cont.

3

Recycling Bags Program

Project location: UConn Storrs

Type of Project: Behavioral - Waste

Brief Description: Back after a three-year hiatus, the Office of Sustainability teamed up with Residential Life and Facilities Operations & Building Services to purchase and distribute reusable mixed-recycling bags to students living on-campus. Printed on the bags is instructions for proper recycling. The bags make it easy for residents to transport their recyclables to centralized waste areas in their residence halls. This program takes aim at improving the University's recycling rates by educating students and making recycling more convenient.

Realized or Anticipated Benefits: As a result of this program, UConn's Storrs campus recycled 1,472 tons of materials in FY 2019, 471 tons more than in FY 2018. Waste diversion rate from incineration to energy facilities also improved by 13% in FY 2019 vs. FY 2018.

4

Food Waste Recovery Program Expansion

Type of Project: Behavioral - Waste

Brief Description: This fall, UConn began sending the food waste from six of its eight dining halls to Quantum Biopower, a company located in Southington, CT. The transition marks a large step toward continued sustainable dining practices for UConn. Plans to send food waste from the remaining dining halls are expected to be completed during the 2018-2019 academic year. Quantum Biopower uses anaerobic digestion, a multistage digestion process that occurs in the absence of oxygen, to break down food waste and other organic material, like bio-based lubricants, agricultural waste, and wastewater sludge, into biogas. The biogas is then used to generate electricity or undergoes further processing into natural gas and transportation fuel. The co-product of anaerobic digestion is sold to local customers as livestock bedding, compost, and fertilizer so that no waste is generated by this process.

Realized or Anticipated Benefits: As a result of the expansion of this program (from one pilot dining hall in 2018), UConn diverted 441.6 tons of food waste from incineration to energy plants compared to 90.5 tons in 2018.

What barriers has your agency encountered while making progress on EO 1 in FY2019?

Barriers encountered by UConn in FY-2019 included funding availability for the implementation of energy conservation projects, limited staffing needed to implement and maintain required equipment changeovers to more sustainable options and the lack of staff technical expertise. Existing UConn staff in many areas lack the technical expertise to acquire, operate and maintain the more sustainable features for Net Zero buildings and infrastructure.

Future Planning

What GHG-reducing structural or behavioral project(s) is your agency hoping to undertake in 2020?

GHG Reduction (energy/fleet related)

1. **Energy Conservation Projects** – Subject to the availability of funding, UConn will continue to execute energy conservation projects in FY-2020 across multiple campuses to complete LED lighting retrofits with lighting controls, building retro-commissioning, boiler optimization, HVAC control upgrades, weatherization and insulation installations as well as steam trap surveys and repairs. In addition, UConn plans a program to conduct ASHRAE level energy audits in all campus buildings to identify potential energy conservation project savings.
2. **Vehicle Fleet Conversion** – UConn has an on-going program of replacing existing light duty fleet vehicles with hybrid vehicles at the Storrs campus. Subject to the availability of funding this program will continue in FY-2020.
3. **Solar PV Installation** – UConn will break ground in 2020 for its new Science I Building which will feature a 520 kW solar PV array covering its rooftop when complete.

What water-reducing structural or behavioral project(s) is your agency hoping to undertake in 2020?

Water Reduction

1. **Water Metering Project** – UConn has set a goal to upgrade or install water meters in buildings which use significant amounts of water. The metering project will improve leak detection and allow for leaks to be repaired sooner. 139 locations for metering upgrades have been identified for meter installations. Continued progress will be made on this project in FY-2020 to address these locations.
2. **EcoMadness Expansion** – As a result of the water metering project improving water use data capture in residence halls, the EcoMadness competition will be expanded to cover additional residence halls in 2020 allowing for further savings to be made through the annual behavior change competition.

What waste-reducing structural or behavioral project(s) is your agency hoping to undertake in 2020?

Waste Reduction

1. **Zero Waste Study** – UConn has plans in place to partner with the Post-landfill Action Network (PLAN) to complete a comprehensive waste study in 2020 to provide recommendations on achieving zero waste.
2. **Expansion of Food Waste Recovery** – UConn sent its food waste from 6/8 dining halls at its Storrs campus to an anaerobic digestion facility, Quantum Biopower, in Southington. This program will be expanded in 2020 to cover all eight dining halls and smaller dining operations on campus. Additionally, one residence hall plans to pilot food waste recovery amongst its residents.

Future Planning cont.

What general support and/or resources would you need to make progress on your agency's project(s) beyond this reporting period?

While strategic planning and policy development is often led by the Office of Sustainability, UConn relies on collaborative partnerships with operational and academic departments to fund and execute the majority of its sustainability initiatives on its campuses. In order to execute these projects going forward, strong working relationships and a willingness to share resources will be essential from University departments such as Facilities Operations, University Planning Design & Construction, Procurement Services, Residential Life, Dining Services, and Parking and Transportation.

Are there any areas in which your agency's broader mission and day-to-day activities will be shifted to incorporate sustainability?

Members of the student organizations EcoHusky, ECOalition, and the Undergraduate Student Government Governing Board drafted a letter to UConn's Presidential Search Committee urging them to consider only candidates who have demonstrated a sincere commitment to environmental sustainability throughout their career. Highlighting numerous milestones reached during the prior seven years under the leadership of President Herbst, the letter has been formally endorsed by the University Senate. As a result, this February, Dr. Thomas Katsouleas, was officially voted into office by UConn's Board of Trustees as the 16th president in UConn's history. Serving as the current Provost and Executive Vice President at the University of Virginia (UVA) and previously as Dean of the Pratt School of Engineering at Duke, Katsouleas is certainly well qualified for the job. Even more notable is his demonstrated commitment to furthering environmental sustainability efforts in his previous leadership positions at Duke and the University of Virginia. Given President Katsouleas's background, we anticipate strong leadership in driving sustainability further into the culture of UConn.

Additionally, UConn has recently entered into the University Climate Change Coalition (UC3) and is joining a network of 18 leading public research universities committed to channeling their resources into accelerating and easing the transition to a low carbon future on local and regional levels. The multi-layer complexity of climate change makes it a particularly difficult issue to address, and solutions complicated to implement. UC3 recognizes the significant role universities play when it comes to stimulating action and looks forward to meeting their goals and spurring climate action across the country. UConn's membership in UC3 will accelerate progress by further broadening interdisciplinary partnerships.

Appendix

(Additional Sustainability Projects)

This appendix provides detail on additional projects relating to infrastructure improvements as well as behavioral change that took place in owned, leased, or occupied space and were either in progress or completed in FY2019.

1

Green Office Certification Program

Project location: UConn Campuses

Type of Project: Behavioral - Combo

Brief Description: The Green Office Certification program is a longstanding UConn initiative to help educate employees on ways to work more sustainably. To participate, UConn departments must complete a 50 question survey that assesses sustainable behaviors which is then graded by the Office of Sustainability. Some examples of behaviors evaluated in this survey include waste reduction and recycling practices, such as printing double sided, and using reusable dining ware, plus energy efficiency practices like shutting down computers and equipment when not in use, and carpooling to work. Offices may qualify for bronze, silver, gold, or platinum certification based upon their total score. Certificates of achievement are issued to offices which achieve a certification level.

Realized or Anticipated Benefits: 81 UConn offices have been certified under UConn's Green Office Certification program to date, with 29 added in 2019.

2

LED Desk Lamp Program

Project location: UConn Campuses

Type of Project: Behavioral - Combo

Brief Description: During move in weekend, UConn partnered with Eversource and handed out 3,800 free LED desk lamps to students. LEDs are 90% more energy efficient than incandescent lamps, 40-50% more efficient than CFLs, and last up to 25 years, making them environmentally superior to other lighting. This year marks the fourth anniversary of the program and is part of UConn's ongoing partnership with Eversource on energy efficiency projects.

Realized or Anticipated Benefits: More than 17,000 LED desk lamps have been delivered to UConn students over the years. By the time all the first-year students who received an LED desk lamp graduate, they will have saved nearly 2 million kilowatt hours of electricity—enough to power 240 homes for an entire year! They will also have avoided 941 tons of CO2 emissions, which is the equivalent of taking 200 cars off the road for a year.