

Sustainability Performance Plan FY 2021

UConn

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



EO 1 Background

On April 24, 2019, Governor Lamont launched the GreenerGov CT initiative by signing Executive Order 1 (EO 1) which directs Executive Branch agencies to advance environmental leadership and cost savings for taxpayers by reducing greenhouse gas emissions and other sustainability objectives in energy use in buildings and vehicles, water use, and waste disposal.

EO 1 calls on agencies to recommit to and expand the state's Lead by Example (LBE) program to reduce the operating costs and environmental impacts of state government facilities and operations. EO 1 builds on the foundation of the state's LBE program by setting new sustainability goals, listed below, for Executive Branch agencies and invoking deeper levels of commitment and participation.

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

Since the GreenerGov CT initiative was launched, significant progress has been made towards laying the groundwork for expanded LBE initiatives in the future: governance structures were established, baseline data was collected, and financing and project strategies were developed. Additionally, agencies reported completing or making progress on 90+ sustainability projects in FY20 in the annual agency Sustainability Performance Plans. Sustainability Performance Plans are plans drafted each year by Senior Sustainability Officers to detail agency progress and necessary goals, actions, and responsible parties to achieve the targets set in EO 1.

In 2020 and 2021, agencies continued to navigate the COVID-19 pandemic. As many agencies returned to the office in 2021, the GreenerGov CT leadership encouraged agencies to use the return to the office from teleworking as an opportunity to refresh staff practices and to take on new sustainability initiatives. The FY21 Sustainability Performance Plan includes a summary of sustainability actions initiated as part of the "Returning to the Office Greener" call to action.

EO 1 Participation Overview

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.

FY21 Participation Overview

UConn participated in the EO 1 and Greener Gov CT initiative as a non-mandated partner in order to continue to drive its on-going energy, water and waste conservation and reduction initiatives while sharing best practices with other state agencies

Participating Agency Staff

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

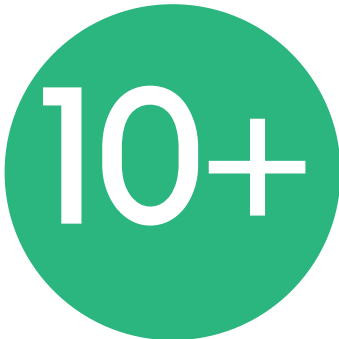
Stanley Nolan, Director, Utility Operations & Energy Management, Facilities Operations

Aris Ristau, Director of Building Services, Facilities Operations

Mark Bolduc, Energy & Compliance Manager, Facilities Operations

Katie Milardo, Water & Compliance Manager, Facilities Operations

Patrick McKee, Senior Sustainability Program Manager, Office of Sustainability



10+

Sustainability Projects

including projects relating to infrastructure improvements or behavioral change that took place in owned, leased, or occupied space and were either in progress or completed in FY21

Sustainability Projects

Project 1

What: UConn implemented a new LED lighting retrofit for the North and East Residence Halls at the Storrs Campus. The following buildings benefited from this retrofit: Baldwin, Tolland, Litchfield, Fairfield, New Haven, Hurley, Middlesex, Windham, New London, and Hartford Halls, as well as Hicks, Grange, Holcomb, Whitney and Sprague. The project consisted of new LED replacement or retrofit solutions in dorm rooms, bathrooms and corridors.

Where: UConn Storrs Campus

Project type: Structural - GHG - Building energy efficiency

Status: Completed in FY 2021

Benefits: The implementation of these lighting projects will result in the reduction of energy consumption and greenhouse gas emissions along with annual energy cost savings.

Savings: The completion of the lighting projects described above will result in annual energy consumption savings of over 487,000 kWh. These projects will also result in almost 300 metric tons of greenhouse gas reductions. The lighting projects described above will result in almost \$49,000 in annual energy avoided costs.

Project 2

What: UConn implemented a ventilation project at the Putnam Dining Hall. The project consisted of installing cooking exhaust vent controls to minimize ventilation operations when cooking is not being performed resulting in energy savings when the dining hall is not in use.

Where: UConn Storrs Campus

Project type: Structural - GHG - Building energy efficiency

Status: Completed in FY 2021

Benefits: The implementation of this cooling-related project will result in the reduction of energy consumption and greenhouse gas emissions along with annual energy cost savings.

Savings: The completion of the cooling-related project described above will result in annual energy savings of over 253,000 kWh in electricity. These projects will also result in more than 150 metric tons of greenhouse gas reductions. The cooling-related projects described above will result in over \$25,000 in annual energy avoided costs.

Sustainability Projects cont.

Project 3

What: EcoMadness is an annual sustainability competition among 27 campus residence halls to encourage energy and water usage reduction and proper recycling habits. Over the month of October students work to reduce their electricity and water consumption compared to a September baseline reading. The Office of Sustainability and its intern team recruits and trains volunteer EcoCaptains to lead the competition in their hall. This includes reviewing educational resources that can be relayed to residents on ways to reduce their electricity and water consumption and a recycling auditor video training. EcoCaptains also play an essential role in conducting weekly recycling compliance audits and engaging their peers (in a socially distanced manner) in the competition. Waste and recycling audits were conducted in common areas to assess recycling behaviors in each hall and to assign a corresponding letter grade based on the scoring criteria for the program. The residents of the winning hall each won a coupon for a free scoop of Dairy Bar ice cream. Through the Office of Sustainability's social media pages and direct emailing of resident students, weekly updates with tips for improving behaviors in each of the three areas were communicated, fueling the competitive spirit.

Where: UConn Storrs Campus

Project type: Behavioral - Combination

Status: Completed in FY 2021

Benefits: Of the 27 participating halls, 21 reduced their electricity consumption and 9 reduced water consumption in October over a September baseline. The winning resident halls achieved: 17% electricity reduction (Beecher/Vinton Hall), an 8.4% water reduction (Sprague Hall), and a 98% recycling compliance rate (Sprague Hall).

Savings:

1. 5% reduction in overall electricity usage (35,478 kWh saved) in participating residence halls over the month of October. Reduction in kWh = \$2,838 saved.
2. Average water consumption did not significantly decrease for the 20 total participating halls. This was predominantly due to two halls increasing water consumption increased by >25% over the competition. This degree of change month-over is typically only observed when meters malfunction. We are unable to verify whether this occurred or not.
3. Average "recycling compliance" increased by 7% over the course of the event from 72% to 79%.

Performance Data

The following data was pulled from EnergyCAP, the state's utility tracking software, on November 29, 2021.

Detailed Utility Use and Cost Data

Commodity	Unit	Use				Cost			
		FY19	FY20	FY21	FY19-21 Change	FY19	FY20	FY21	FY19-21 Change
Electric & Natural Gas	MMBtu	860,379	841,168	792,908	-7.8%	\$16,722,149	\$15,418,305	\$14,535,132	-13.1%
Other Building Energy	MMBtu	932,778	963,863	928,018	-0.5%	\$3,643,722	\$2,574,829	\$2,954,574	-18.9%
Vehicle Gasoline	Gal	168,441	137,054	86,417	-48.7%	\$358,779	\$291,925	\$142,324	-60.3%
Vehicle Diesel	Gal	110,202	87,605	56,107	-49.1%	\$206,078	\$163,821	\$87,015	-57.8%
Total GHG Emissions	MTCO2e	114,300	112,668	105,436	-7.8%	-	-	-	-
Water/Sewer/Fire Protection	Kgal	275,407	274,110	224,098	-18.6%	\$1,393,572	\$1,364,888	\$1,151,892	-17.3%
Total	-	-	-	-	-	\$22,324,299	\$19,813,768	\$18,870,937	-15.5%

*FY20 and FY21 utility data available from Energy CAP as of 11/29/21.

**Other Building Energy includes steam, chilled water, propane and fuel oil.

***Each fiscal year is July 1 to June 30.

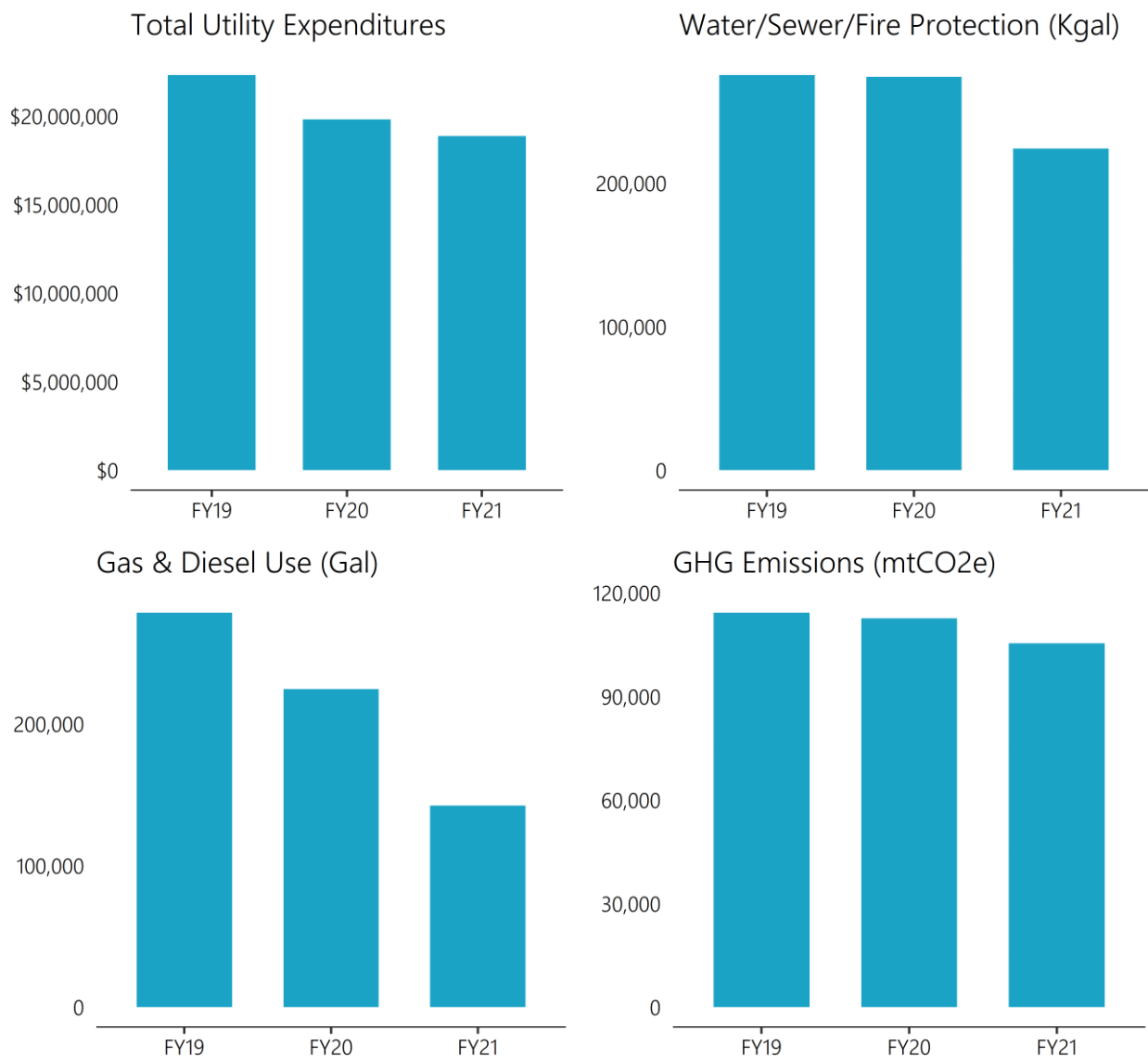
****Summary includes Storrs, Avery Point, Stamford, Downtown Hartford, Depot, Law School, Waterbury and County Cooperative Extensions.

*****Total GHG Emissions (Scope 1 and 2) obtained from SIMAP (Storrs Campus) or Energy CAP (all other campuses). With the exception of Avery Point, emissions from purchased power is not included since that is covered by the purchase of RECs.

Performance Data cont.

Data Trends, FY19-FY21

The charts below summarize the total utility expenditures, water use, gas/diesel use, and total GHG emissions for UCONN for FY19-FY21.



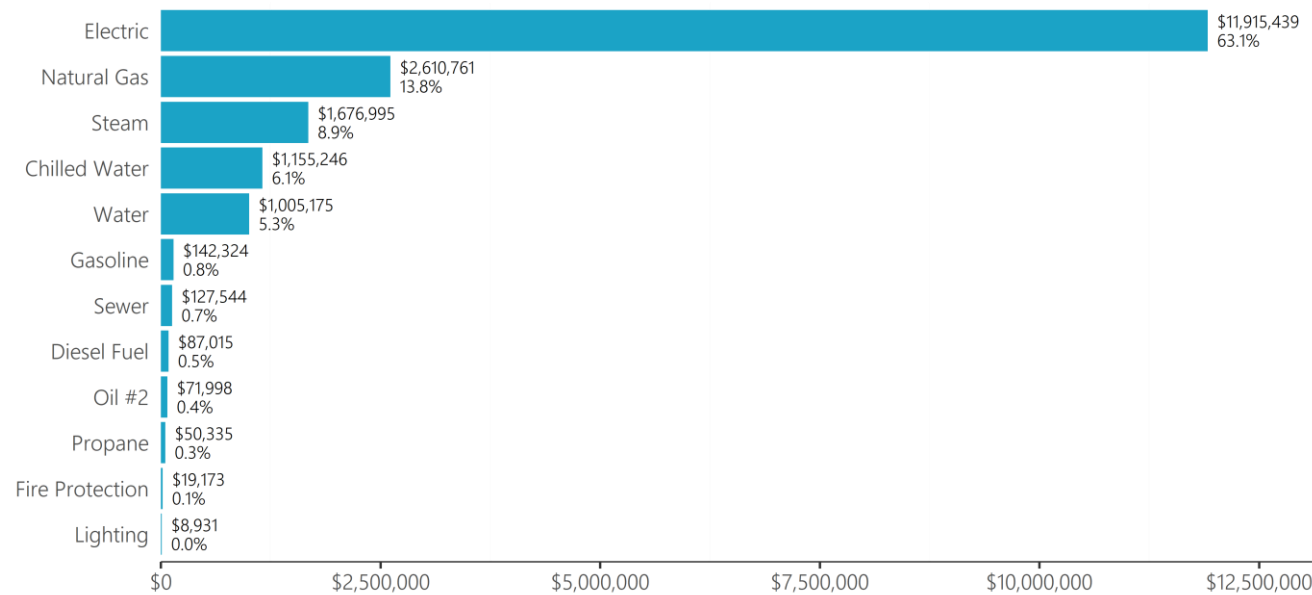
Performance Data cont.

FY21 Data Snapshot

The charts below highlight the breakdown of utility expenditures and GHG emissions by commodity for FY21.

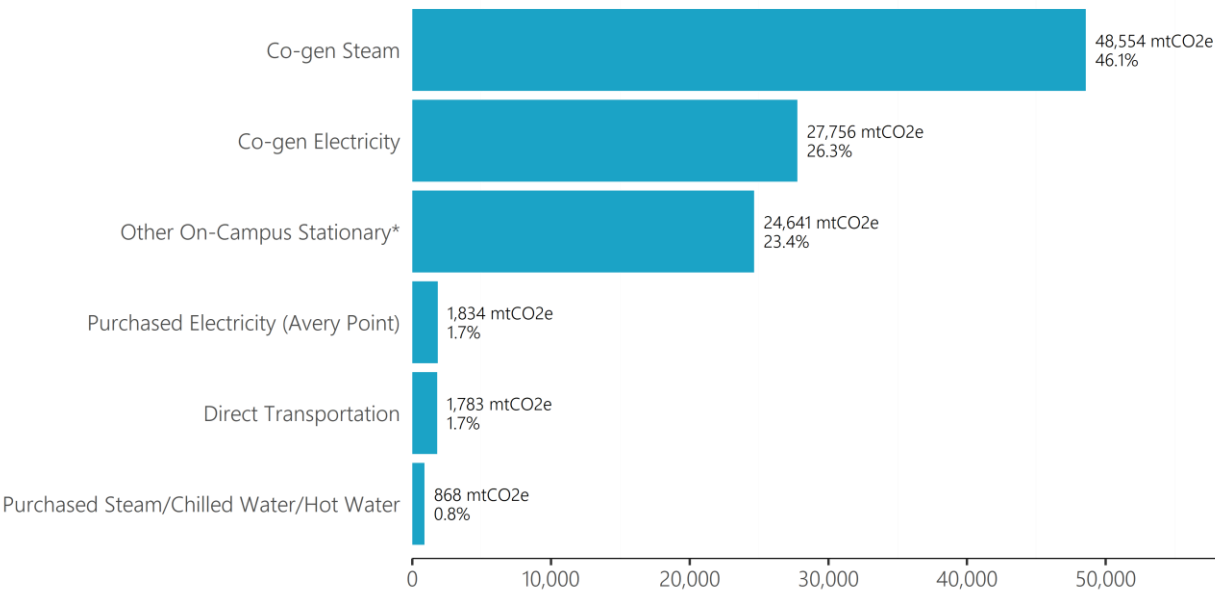
Commodity Cost Breakdown, FY21

The chart below represents the breakdown of commodity costs at UCONN in FY21.



GHG Emissions Breakdown, FY21

The chart below represents the breakdown of GHG emissions by commodity at UCONN in FY21.



Return to the Office Greener

In FY21, the GreenerGov CT leadership encouraged agencies to use the return to the office from teleworking due to the COVID-19 pandemic as an opportunity to refresh staff practices and habits and to take on new sustainability initiatives. Eleven actions were presented as possible strategies for a more sustainable return to the office, and agencies were asked to pick three actions not already in process. The actions for UCONN are highlighted below.

Returning to the Office Greener Suggested Actions

1. Identify agency vehicles which could be transitioned to electric models.	✓
2. Have a No-Cost retro commissioning scoping study to identify HVAC improvement and controls opportunities.	✓
3. Sign up a building to participate in Eversource's Strategic Energy Management program.	
4. Have a free building energy audit performed to identify basic opportunities to upgrade lighting or weatherization.	✓
5. Perform a water audit to identify opportunities for fixture replacement or conservation actions.	✓
6. Check for water leaks using the Fix-A-Leak Checklist.	✓
7. Assess the feasibility of hosting solar on your buildings or property.	✓
8. Optimize your dumpster size and pickup schedule.	✓
9. Start an organics diversion/collection program.	✓
10. Tune up recycling practices.	✓
11. Make a Green Team of staff invested in making space and operations more sustainable.	✓
12. Other actions	

COVID-19 Impact

Impact of COVID-19 on UCONN's ability to make progress on the goals of EO 1 in FY21

The ability for UConn to make progress in achieving its goals was slowed as UConn worked through how to deal with the pandemic. Working remotely and working on site socially distanced greatly slowed the implementation of the goals. Gathering data, inspections on site for verification and compliance matters and performing substantive reviews of historical documentation are significantly more challenged. All completion should be extended to allow better quality results. In addition, budgetary concerns related to addressing the pandemic have also resulted in projects being put on hold or delayed while UConn works through those issues.

COVID-19 changes that have led to a positive sustainability outcome that will continue after the pandemic

Strategically evaluating building footprint needed for agency work	✓
Reassessing agency fleet	✓
Holding virtual meetings as a more regular practice	✓
Increased telework as a regular practice	✓
No changes to report	
Other	

Future Planning

Status of FY20 Plans

	Progress has been made	Progress has stalled	Plans have been completed.	Stated plans no longer a priority	Other
GHG Reduction	✓				
Water Use Reduction	✓				
Waste Reduction	✓				

Sustainability Plans Beyond FY21

GHG Reduction

- 1) Energy Conservation Projects – Subject to the availability of funding, UConn will continue to execute energy conservation projects in FY 2022 across multiple campuses to complete LED lighting retrofits with lighting controls, building retro-commissioning, boiler optimization as well as steam trap surveys and repairs. In addition, UConn has an on-going program to conduct ASHRAE level energy audits in all campus buildings to identify potential energy conservation project savings. At date, approximately 30 building audits have been completed resulting in the planning of numerous energy savings projects which will start in FY 2022. These FY 2022 projects will result in energy savings of over 442,000 kWh, over 4,000 kilo-pounds of steam, 300,000 cubic feet of natural gas, \$66,000 in annual energy avoided costs and 440 metric tons of greenhouse gas reductions. These projects were intended to start in FY 2021 but were delayed due to funding issues.
- 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 2022. To date, UConn has 43 electric/hybrid vehicles and carts on the Storrs campus which is a little over 10% of the overall light duty vehicle fleet.
- 3) Solar PV Installation – UConn will break ground in FY 2021 for its new Science I building which will feature a 520 kW solar PV array covering its rooftop when complete. Additional Solar PV installations are being evaluated for parking lots, garages, and roof tops. Building construction is scheduled to be completed in FY 2022.

Future Planning cont.

Water Use Reduction

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 targets with 37% complete to date. Continued progress will be made on this project in FY 2021 to address the remaining locations.

Waste Reduction

- 1) Expansion of Food Waste Recovery – UConn sends its food waste from all eight (8) dining halls at its Storrs campus to an anaerobic digestion facility, Quantum Biopower, in Southington. UConn diverted 124 tons of food waste to Quantum Biopower in FY 2020. This program will be expanded in FY 2022 to address food waste at smaller dining operations on campus which may result in diverting several additional tons to Quantum Biopower. Additionally, one residence hall is piloting food waste recovery amongst its residents.
- 2) EcoCaptains Program – The Office of Sustainability has partnered with UConn Residential Life to fund a paid five-hour per week student EcoCaptains program in 20 residence halls on campus. EcoCaptains will be tasked with promoting sustainable behaviors and lead their hall's participation in annual resource efficiency and recycling competitions and ongoing behavior change efforts. EcoCaptains will conduct waste and recycling audits to ensure that residents are properly separating recyclables from trash.

Resources Needed

Barriers encountered while making EO 1 progress in FY21

Funding	✓
Staffing	✓
Technical expertise	✓
No barriers encountered	
Other	

Additional information on barriers encountered

Similar to last year's comments, state contracts are not in place for many of the initiatives. For example, only one vendor EVSE is available under state contract to install EV charging systems. For others, such as Energy Conservation and ESPC, we have several vendors under contract and available to advise. More effort is needed in this area to enable quick implementation of the Goals. Also, in many locations the Eversource and UI grids cannot support the electrification and added load that is required to meet the Goals. Resilience and Reliability of the grid is problematic in areas designated or to be designated as micro-grids, shelter in severe weather events, etc. Individual agencies cannot maintain the required standards of performance and reliability until and unless the electric grid infrastructure is hardened. Texas is a recent example of this failure to have adequate resiliency and reliability, and the recent CT Two Storm Panel addresses many of these shortcomings in ISO-NE that have not been fully resolved to date.

Specific type of support or resources needed to make progress on future sustainability projects

UConn's sustainability priorities may change as a result of recommendations made by the President's Working Group on Sustainability and the Environment. Securing additional funding may be required to implement any of the new goals set by the Working Group. Priorities may shift away from Energy Conservation measures currently being implemented to the installation of renewable energy sources on campus. These shifting priorities may require additional staffing, training and contract methods to fully implement and achieve set goals. Also, understanding the States ranking and prioritization of competing goals (e.g., Protection of open space and farmland versus developing solar farms) would be helpful in the planning of future sustainability projects.

Additional info on UCONN's participation in EO 1 during FY21

UConn would like to see a Cost Benefit Analysis for the Goals and Financial Impact Analysis on a Town by Town and Agency by Agency basis. Climate justice should require such analysis to determine to whom and when to allocate funding resources.