

Sustainability Performance Plan

FY 2021

Agriculture Experiment Station

Prepared by Michael Last
Senior Sustainability Officer

Approved by Dr. Jason C. White
Director

*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

AES's Mission

The mission of The Connecticut Agricultural Experiment Station is to develop, advance, and disseminate scientific knowledge, improve agricultural productivity and environmental quality, protect plants, and enhance human health and well-being through research for the benefit of Connecticut residents and the nation. Seeking solutions across a variety of disciplines for the benefit of urban, suburban, and rural communities, Station scientists remain committed to "Putting Science to Work for Society", a motto as relevant today as it was at our founding in 1875.

FY21 Participation Overview

Currently, the agency participates in the Energy Efficiency project team.

Participating Agency Staff

Michael Last (CFO)
Lisa Kaczenski (FAO)
Michael Cavadini (FAA)



Sustainability Project

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: Renovation of two greenhouses on the New Haven property.

Where: Greenhouses on New Haven Property

Project type: Structural - Combination

Status: In progress in FY 2021

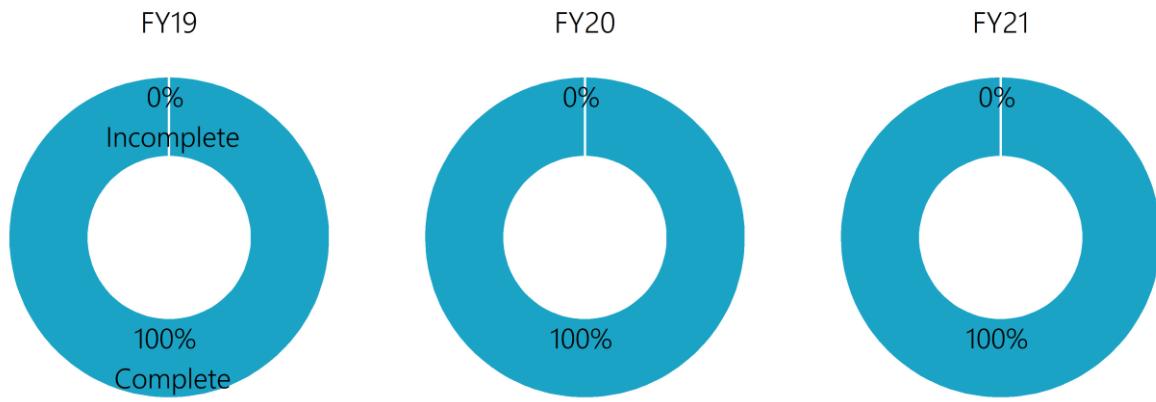
Benefits: Anticipated benefits include an estimated \$18,400 operating cost reduction (\$10,000 of which are from maintenance savings). The remaining \$8,400 will be the result of replacing heating systems with high efficiency gas fired condensing boilers and inclusion of LEDs.

Performance Data

The following data was pulled from EnergyCAP, the state's utility tracking software, on December 9, 2021. Note that utility data on agencies occupying space owned by another state agency may not be linked to their EnergyCAP accounts.

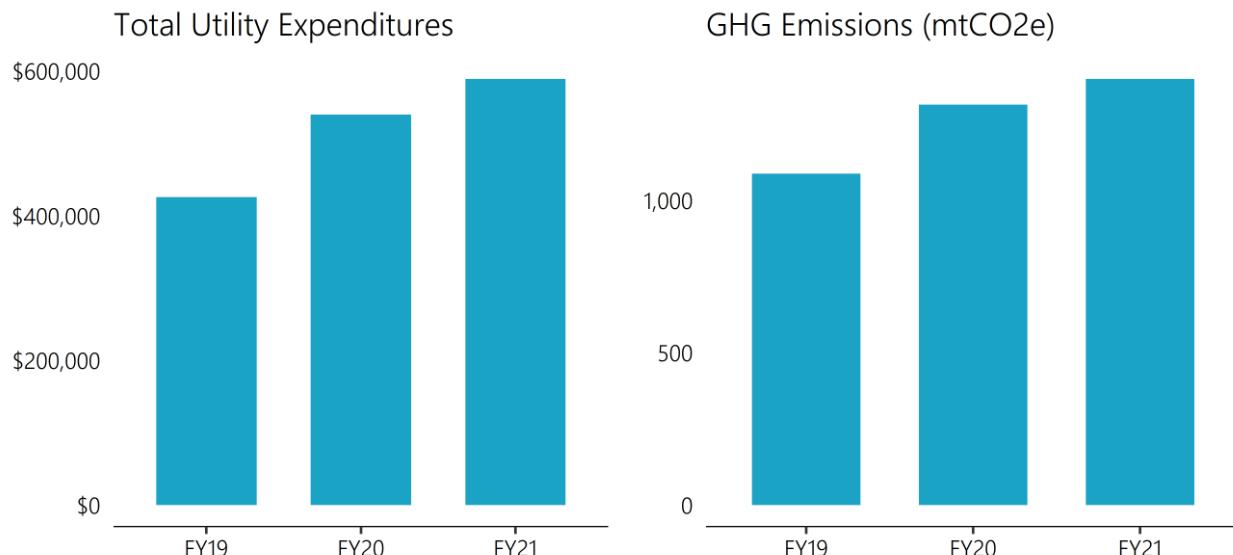
Data Completeness

The charts below display the estimated percent of utility data for AES entered into EnergyCAP. More recently uploaded data may still be 'in queue' awaiting processing by EnergyCAP and will not be reflected in this report.



Data Trends, FY19-FY21

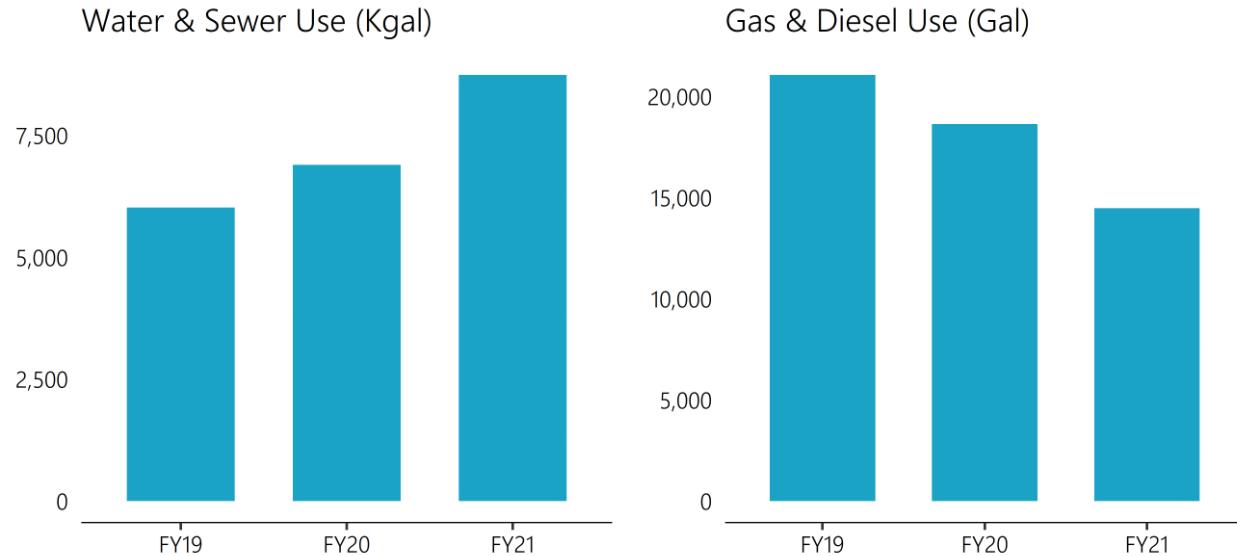
The charts below summarize the total utility expenditures and total GHG emissions for AES for FY19-FY21. Keep in mind that data that is missing or not yet processed in EnergyCAP may cause these numbers to be artificially low.



Performance Data cont.

Data Trends, FY19-FY21 - Continued

The charts below summarize the water and gas/diesel use for AES for FY19-FY21. Keep in mind that data that is missing or not yet processed in EnergyCAP may cause these numbers to be artificially low.



Detailed Utility Use and Cost Data

The table below summarizes the utility use and cost data for AES for FY19-FY21 according to data pulled from EnergyCAP on December 9, 2021. As mentioned previously, keep in mind that this data may be incomplete.

Commodity	Unit	Use			FY19-21 Change	Cost			FY19-21 Change
		FY19	FY20	FY21		FY19	FY20	FY21	
Electric	kWh	1,242,688	2,318,930	2,462,956	+98.2%	\$223,160	\$348,598	\$380,359	+70.4%
Natural Gas	CCF	96,037	85,124	98,899	+3.0%	\$88,355	\$75,431	\$88,058	-0.3%
Oil	Gal	2,684	6,430	6,433	+139.6%	\$5,410	\$10,510	\$10,469	+93.5%
Propane	Gal	5,778	5,436	4,558	-21.1%	\$7,529	\$5,719	\$6,703	-11.0%
Vehicle Gasoline	Gal	20,375	18,011	13,941	-31.6%	\$54,810	\$43,586	\$35,272	-35.6%
Vehicle Diesel	Gal	693	628	540	-22.0%	\$2,253	\$1,858	\$1,519	-32.6%
Total GHG Emissions	mtCO2e	1,088	1,315	1,399	+28.6%	-	-	-	-
Water	Kgal	2,887	3,707	4,917	+70.3%	\$24,742	\$32,808	\$40,128	+62.2%
Sewer	Kgal	3,137	3,192	3,824	+21.9%	\$19,523	\$21,445	\$26,527	+35.9%
Total	-	-	-	-	-	\$425,782	\$539,954	\$589,034	+38.3%

*Gasoline and diesel costs estimated based on average monthly cost from EIA.gov, \$2.53 for gasoline and \$2.81 for diesel in FY21; \$2.42 for gasoline and \$2.96 for diesel in FY20; \$2.69 for gasoline and \$3.25 for diesel in FY19.

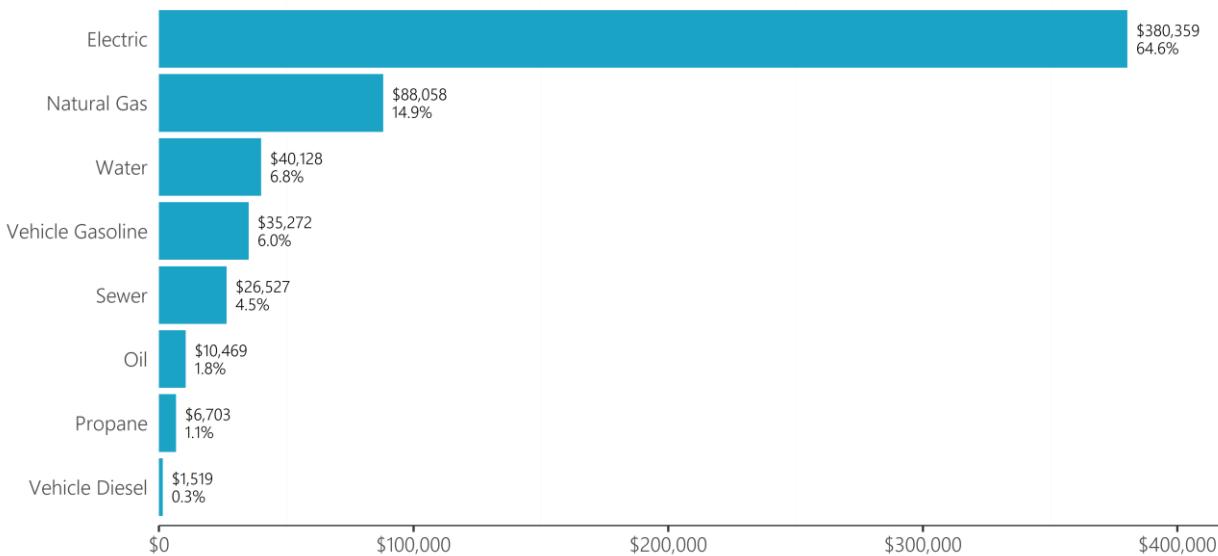
Performance Data cont.

FY21 Data Snapshot

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

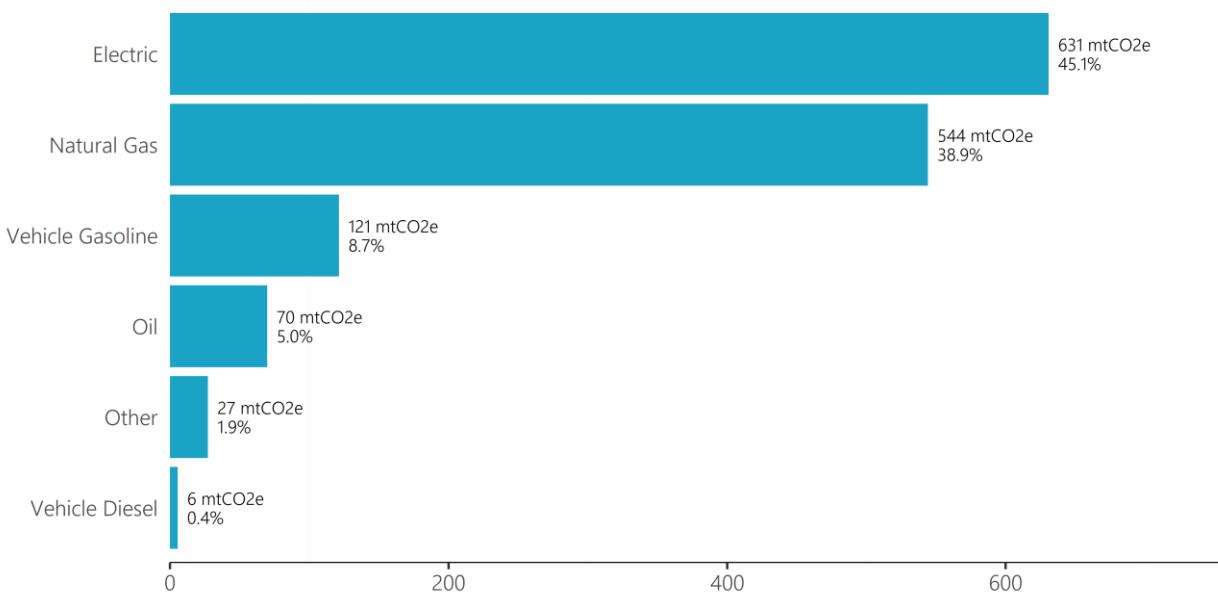
Commodity Cost Breakdown, FY21

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



GHG Emissions Breakdown, FY21

The chart below represents the breakdown of GHG emissions by commodity at AES 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 AES 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 AES's ability to make progress on the goals of EO 1 in FY21

No impact reported.

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

Installation of electric vehicle charging stations. The agency had an evaluation regarding this.

Water Use Reduction

The agency hosts multiple, water-cooled, chambers for the storage of scientific materials. There is interest in replacing these water-cooled systems with air compression systems. It is believed that a large reduction in water consumption would be the result of such a project.

Waste Reduction

None

Resources Needed

Barriers encountered while making EO 1 progress in FY21

Funding	✓
Staffing	
Technical expertise	
No barriers encountered	
Other	

Additional details on barriers encountered

In order to move forward on the water-cooled systems replacement, the agency will require funding. A rough estimate of \$50,000 has been placed on this project. This figure includes the cost of the units as well as the cost associated with installation.

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

Funding