

University of Massachusetts Lowell FY21 Utility Record Compilation

FY20 Total Energy: 355,758 MMBtu FY20 Total Emissions: 16,098 Tons CO2e

% Change YOY Use: -7.180% % Change YOY Emissions: -28.82%

Campus Fuel Summary

Fuel Type	Default Unit	2020			2021		
		Record Count	Default Use	Emissions (MT CO2e)	Record Count	Default Use	Emissions (MT CO2e)
Electric	kWh	1,041	47,843,772	10,938	894	40,961,068	4,634
Natural Gas	MMBtu	759	220,036	11,678	590	215,999	11,464
Total Fuels	MMBtu	1,800	383,279	22,616	1,484	355,758	16,098

Sub-Campus Fuel Summary

% Change in Usage: -50% 150%

Sub Campus	Fuel Type	Default Unit	2020			2021		
			Record Count	Default Use	Emissions (MT CO2e)	Record Count	Default Use	Emissions (MT CO2e)
Academic	Electric	kWh	586	31,906,711	7,294	591	28,250,409	3,294
	Natural Gas	MMBtu	275	165,286	8,773	276	175,951	9,339
Boathouse	Electric	kWh	36	41,880	10	36	26,115	2
	Natural Gas	MMBtu	12	372	20	12	266	14
ResLife	Electric	kWh	323	11,925,681	2,726	171	9,743,862	994
	Natural Gas	MMBtu	431	46,313	2,458	266	34,452	1,829
Submillimeter Lab	Electric	kWh	48	614,674	141	48	667,834	81
	Natural Gas	MMBtu	24	518	27	24	586	31
Tsongas	Electric	kWh	48	3,354,826	767	48	2,272,848	264
	Natural Gas	MMBtu	17	7,546	400	12	4,745	252

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UMass Lowell Data to Collect:

FY21 complete

CES Data to Collect:

FY21 complete

Unit Conversion Summary

Emissions are calculated in the following steps:

- 1) Convert native units from billing data to standardized default units.
- 2) Convert default units into CO₂e (lbs).
- 3) Convert CO₂e (lbs) to CO₂e (tons) dividing by 2,204.64.

Note: Electric emissions factors are updated by MassDEP on a calendar year basis. The most recent year with a calculated factor is 2019 set to 0.5040 CO₂e (lbs) per kWh; this factor is carried forward in 2020 and 2021.

Fuel Type	Default Unit	Emissions Unit	Default Factor	Emissions Factor
Electric	kWh	CO ₂ e (lbs)	1.000	0.5040
LNG	MMBtu	CO ₂ e (lbs)	0.100	117.0099
Natural Gas	MMBtu	CO ₂ e (lbs)	0.106	117.0099
Propane	Gallons	CO ₂ e (lbs)	1.000	12.6603
ULSD	Gallons	CO ₂ e (lbs)	1.000	22.5882

Factor Source Summary

Factor Source

EPA GHG Emission Factors Report <https://www.epa.gov/sites/production/files/2020-04/documents/ghg-emission-factors-hub.pdf>

MassDEP <https://www.mass.gov/lists/massachusetts-greenhouse-gas-ghg-reporting-program-data>