

University of Massachusetts Dartmouth  
FY20 Utility Record Compilation



FY20 Total Energy: 422,599 MMBtu      FY20 Total Emissions: 23,439 Tons CO2e  
 % Change YOY Use: -5.519%      % Change YOY Emissions: -5.756%

Campus Fuel Summary

Fuel Type	Default Unit	2019			2020		
		Record Count	Default Use	Emissions (Tons CO2e)	Record Count	Default Use	Emissions (Tons CO2e)
Electric	kWh	216	23,797,788	5,440	216	21,243,548	4,857
Natural Gas	MMBtu	311	366,086	19,430	328	350,116	18,582
<b>Total Fuels</b>	<b>MMBtu</b>	<b>527</b>	<b>447,284</b>	<b>24,870</b>	<b>544</b>	<b>422,599</b>	<b>23,439</b>

Sub-Campus Fuel Summary

% Change in Usage: -50% 150%

Sub Campus	Fuel Type	Default Unit	2019			2020		
			Record Count	Default Use	Emissions (Tons CO2e)	Record Count	Default Use	Emissions (Tons CO2e)
CHARTER	Electric	kWh	12	11,040	3	12	11,280	3
CIE	Electric	kWh	24	2,268,908	519	24	2,219,629	507
	Natural Gas	MMBtu	12	6,959	369	12	5,192	276
LAW	Electric	kWh	12	588,320	134	12	507,500	116
	Natural Gas	MMBtu	12	3,382	179	12	2,375	126
MAIN	Electric	kWh	108	16,657,908	3,808	108	14,921,248	3,411
	Natural Gas	MMBtu	251	326,627	17,336	268	318,021	16,879
SMAST	Electric	kWh	24	2,515,292	575	24	2,557,056	585
	Natural Gas	MMBtu	24	13,254	703	24	12,606	669
STAR	Electric	kWh	36	1,756,320	402	36	1,026,835	235
	Natural Gas	MMBtu	12	15,865	842	12	11,922	633



**UMass Dartmouth Data to Collect:**

- 1) Square footage
- 2) Enrollment FTE
- 3) Faculty & Staff FTE
- 4) On Road Fuels
  - a) Gasoline
  - b) Diesel (ULSD)

**CES Data to Collect:**

- 1) On-site Generation
- 2) Net Excess Generation Credits

**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 2018 set to 0.5040 CO2e (lbs) per kWh; this factor is carried forward in 2019 and 2020.

Fuel Type	Native Unit	Default Unit	Emissions Unit	Default Factor	Emissions Factor
Electric	kWh	kWh	CO2e (lbs)	1.000	0.5040
LNG	Therms	MMBtu	CO2e (lbs)	0.100	117.0099
Natural Gas	Dth	MMBtu	CO2e (lbs)	1.000	117.0099
		MMBtu	CO2e (lbs)	1.000	117.0099
		Therms	CO2e (lbs)	0.100	117.0099
Propane	Gallons	Gallons	CO2e (lbs)	1.000	12.6603
ULSD	Gallons	Gallons	CO2e (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>