

GREEN PLAINS 2019 SUSTAINABILITY FACT SHEET

UNWAVERING COMMITMENT TO SUSTAINABILITY

Being responsible stewards of the environment has always been in our DNA, and we are constantly studying our processes to make them even more efficient. This cannot happen without a thorough understanding of the data at each of our biorefineries, much of which we report to the EPA. Below is a snapshot of our primary metrics over the last five years, which are all verified through internal quality assurance reviews.

Green Plains Performance Data	Unit of Measurement	2019	2018	2017	2016	2015
Total GHG Emissions						
GHG Scope 1	Thousand Metric Tonnes CO _{2e}	1,315	1,686	1,857	1,931	1,501
CO ₂	Thousand Metric Tonnes	1,315	1,686	1,857	1,931	1,501
CH ₄	Thousand Metric Tonnes	0.025	0.032	0.035	0.036	0.028
N ₂ O	Thousand Metric Tonnes	0.002	0.003	0.004	0.004	0.003
Enterprisewide Air Emissions (Excludes GHGs)						
Sulfur dioxide (SO ₂)	Thousand Metric Tonnes	0.124	0.197	0.143	0.152	0.196
Nitrogen Oxides (NO _x)	Thousand Metric Tonnes	0.621	0.746	0.864	0.865	0.716
VOC Emissions	Thousand Metric Tonnes	0.586	0.764	0.993	0.920	0.743
Carbon Monoxide Emissions	Thousand Metric Tonnes	0.376	0.493	0.543	0.501	0.423
Particulate Emissions	Thousand Metric Tonnes	0.394	0.542	0.621	0.663	0.580
Energy Use						
Electricity Use	Thousand Megawatt Hours	735,110	924,357	1,029,182	912,699	721,891
Energy Per Unit of Production	Kilowatt Hours/Gallon	0.864	1.106	0.882	0.867	0.742
Fuel Used						
Natural Gas	MMBtu	24,778,741	30,874,334	34,267,953	36,353,749	28,254,227
Natural Gas Use per Unit of Production	MMBtu per Gallons Ethanol	0.029	0.028	0.027	0.032	0.032
Water Usage						
Groundwater Withdrawals	Thousand Cubic Meters	9,328	9,366	12,840	8,493	8,467
Municipal Water Withdrawals	Thousand Cubic Meters	1,458	1,897	1,162	1,119	N/A
Reclaimed Water Withdrawals	Thousand Cubic Meters	317	290	N/A	N/A	N/A
Salt Water Withdrawals	Thousand Cubic Meters	0	0	0	0	0
Surface Water Withdrawals	Thousand Cubic Meters	0	0	0	0	0
Total Water Withdrawal	Thousand Cubic Meters	11,103	11,553	14,002	9,612	8,467
Total Water Discharged	Thousand Cubic Meters	4,151	5,102	4,701	3,482	3,022
Total Water Use	Thousand Cubic Meters	6,952	6,451	9,301	6,130	5,445
Water Use per Unit of Production	Gallons Water/Gallons Ethanol	2.144	1.568	1.956	1.407	1.518
Safety and Health						
Number of Sites	Count	14	18	18	18	15
Number of Spills	Count	3	12	23	11	17
Volume of Spills	Thousand Metric Tonnes	0.023	0.006	0.059	0.005	0.047
Number of Environmental Fines	Count	0	1	0	0	0
Amount of Environmental Fines	USD	0	\$5,950	0	0	0

