

CONSUMERS ENERGY SUSTAINABILITY INFORMATION

Parent Company: CMS Energy Corporation

Operating Company(s): Consumers Energy Company

Business Type(s): Vertically Integrated

State(s) of Operation: Michigan

State(s) with RPS Programs: Michigan

Regulatory Environment: Regulated

Report Date: October 1, 2020

CMS Energy Website: CMSEnergy.com

Consumers Energy Website: ConsumersEnergy.com

Sustainability Report: ConsumersEnergy.com/sustainability-report-2019

The following quantitative information is Consumers Energy data only.

TREND KEY: ■ Not Rated ■ No Change ■ Better ■ Worse

ELECTRIC PORTFOLIO	Baseline				Trend
	2005	2017	2018	2019	
Owned Nameplate Generation Capacity at end of year (MW)					
Coal	3,015	2,043	2,043	2,043	■
Natural Gas	207	1,617	1,617	1,617	■
Nuclear	812	N/A	N/A	N/A	■
Oil/Natural Gas Peaking Units	1,817	1,590	1,402	1,402	■
Total Renewable Energy Resources	1,141	1,357	1,401	1,477	■
Biomass/Biogas	N/A	N/A	N/A	N/A	■
Geothermal	N/A	N/A	N/A	N/A	■
Hydroelectric	1,141	1,141	1,141	1,141	■
Solar	N/A	4	4	4	■
Wind	N/A	212	256	332	■
Other	N/A	N/A	1	1	■
Owned Net Generation for the data year (MWh)					
Coal	19,711,000	10,098,000	9,804,000	9,776,000	■
Natural Gas	356,000	5,105,000	5,232,000	6,252,000	■
Nuclear	6,636,000	N/A	N/A	N/A	■
Oil/Natural Gas Peaking Units	225,000	42,000	45,000	97,000	■
Total Renewable Energy Resources	129,000	788,000	862,000	950,000	■
Biomass/Biogas	N/A	N/A	N/A	N/A	■
Geothermal	N/A	N/A	N/A	N/A	■
Hydroelectric	129,000	189,000	120,000	204,000	■
Solar	N/A	6,000	6,000	5,000	■
Wind	N/A	593,000	736,000	741,000	■
Other	N/A	N/A	N/A	N/A	■
Purchased Net Generation for the data year (MWh)					
Coal	482,000	491,000	511,000	462,000	■
Natural Gas	7,061,000	5,521,000	6,712,000	6,812,000	■
Nuclear	N/A	6,780,000	6,749,000	6,946,000	■
Oil/Natural Gas Peaking Units	N/A	N/A	N/A	N/A	■
Total Renewable Energy Resources	1,236,000	2,288,000	2,379,000	2,387,000	■
Biomass/Biogas	1,200,000	1,242,000	1,237,000	1,164,000	■
Geothermal	N/A	N/A	N/A	N/A	■
Hydroelectric	34,000	88,000	79,000	60,000	■
Solar	NA	6,900	6,700	7,400	■
Wind	2,600	951,000	1,006,000	1,156,000	■
Other	1,991,000	4,384,000	4,953,000	2,059,000	■
Investing in the Future: Capital Expenditures, Energy Efficiency (EE), and Smart Meters					
Total Annual Capital Expenditures (nominal dollars)	\$593,000,000	\$1,880,000,000	\$1,975,000,000	\$2,298,000,000	■
Incremental Annual Electricity Savings from EE Measures (MWh)	N/A	562,121	586,784	566,183	■
Incremental Annual Investment in Electric EE Programs (nominal dollars)	N/A	\$113,500,000	\$117,800,000	\$115,900,000	■
Cumulative Bill Savings from EE Programs	N/A	\$2,046,130,000	\$2,584,833,000	\$3,176,205,000	■
Cumulative CO2 Emissions Avoided by EE Programs Since 2009 (metric tons)	N/A	6,517,785	7,982,342	9,660,238	■
Percent of Total Electric Customers with Smart Meters (at end of year)	N/A	99	99	99	■
Retail Electric Customer Count (at end of year)					
Commercial	214,025	220,734	219,869	221,892	■
Industrial ¹	8,595	1,433	1,312	1,329	■
Residential	1,565,601	1,601,688	1,603,125	1,611,320	■

1. Since 2005, Consumers Energy corrected an error in its coding of customers as industrial or commercial. This resulted in a large number of customers' classification changing from industrial to commercial.

TREND KEY: ■ Not Rated ■ No Change ■ Better ■ Worse

EMISSIONS	Baseline				Trend
	2005	2017	2018	2019	
GHG Emissions: Carbon Dioxide (CO₂) and Carbon Dioxide Equivalent (CO₂e)					
Owned Generation					
Carbon Dioxide (CO ₂)					
Total Owned Generation CO ₂ Emissions (MT)	20,219,000	12,465,000	12,682,000	12,604,000	■
Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.754	0.775	0.795	0.741	■
Carbon Dioxide Equivalent (CO ₂ e)					
Total Owned Generation CO ₂ e Emissions (MT)	N/A	12,889,000	12,743,000	12,659,000	■
Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	N/A	0.801	0.799	0.744	■
Purchased Power					
Carbon Dioxide (CO ₂)					
Total Purchased Generation CO ₂ Emissions (MT)	4,999,000	5,548,000	6,373,000	5,121,000	■
Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.464	0.285	0.299	0.276	■
Carbon Dioxide Equivalent (CO ₂ e)					
Total Purchased Generation CO ₂ e Emissions (MT)	N/A	5,587,000	6,419,000	5,150,000	■
Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	N/A	0.287	0.301	0.276	■
Owned Generation + Purchased Power					
Carbon Dioxide (CO ₂)					
Total Owned + Purchased Generation CO ₂ Emissions (MT)	25,218,000	18,013,000	19,055,000	17,725,000	■
Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.671	0.507	0.512	0.497	■
Carbon Dioxide Equivalent (CO ₂ e)					
Total Owned + Purchased Generation CO ₂ e Emissions (MT)	N/A	18,476,000	19,162,000	17,809,000	■
Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	N/A	0.520	0.514	0.499	■
Non-Generation CO₂e Emissions					
Fugitive CO ₂ e emissions of sulfur hexafluoride (MT)	N/A	176	2,100	2,533	■
Electric & Gas Scope 1, 2 and 3 Greenhouse Gas Emissions					
Carbon Dioxide Equivalent (CO ₂ e)					
Scope 1 CO ₂ e emissions (MT)	N/A	13,046,000	13,165,000	13,509,000	■
Scope 2 CO ₂ e emissions (MT) ¹	N/A	380,000	424,000	279,500	■
Scope 3 CO ₂ e emissions (MT) ²	N/A	20,216,000	22,780,000	20,574,000	■
Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)					
Generation basis for calculation		Fossil			
Nitrogen Oxide (NO_x)					
Total NO _x Emissions (MT)	28,400	3,900	3,900	4,100	■
Total NO _x Emissions Intensity (MT/Net MWh)	1.06E-03	2.44E-04	2.44E-04	2.41E-04	■
Sulfur Dioxide (SO₂)					
Total SO ₂ Emissions (MT)	83,600	5,100	5,200	5,700	■
Total SO ₂ Emissions Intensity (MT/Net MWh)	3.12E-03	3.18E-04	3.29E-04	3.35E-04	■
Mercury (Hg)					
Total Hg Emissions (kg)	N/A	24	26	33	■
Total Hg Emissions Intensity (kg/Net MWh)	N/A	1.47E-06	1.64E-06	1.94E-06	■

1. The Scope 2 numbers shown here were recently updated to include line losses on the electric distribution system for purchased power. Scope 2 numbers in prior public reports do not reflect this additional analysis.

2. Consumers Energy reports known emissions associated with four Scope 3 categories, including emissions associated with purchased power (i.e., fuel-and-energy related activities not included in scope 1 or 2), combustion of natural gas sold (i.e., use of sold products), business travel and employee commuting.

TREND KEY: ■ Not Rated ■ No Change ■ Better ■ Worse

RESOURCES	Baseline				Trend
	2005	2017	2018	2019	
Human Resources					
Total Number of Employees	8,114	7,496	8,121	8,253	■
Total Number on Board of Directors/Trustees	12	10	10	12	■
Total Women on Board of Directors/Trustees	1	4	4	5	■
Total Minorities on Board of Directors/Trustees	1	2	2	3	■
Total Females in Senior Leadership	N/A	N/A	8	9	■
Percent Females in Senior Leadership	N/A	N/A	0%	32%	■
Total Minorities in Senior Leadership	N/A	N/A	7	6	■
Percent Minorities in Senior Leadership	N/A	N/A	26%	21%	■
Total Females in Management	N/A	N/A	125	132	■
Percent Females in Management	N/A	N/A	30%	31%	■
Total Minorities in Management	N/A	N/A	51	53	■
Percent Minorities in Management	N/A	N/A	12%	12%	■
Total Female Employees	N/A	N/A	2,304	2,342	■
Percent Female Employees	N/A	N/A	28%	28%	■
Total Minority Employees	N/A	N/A	1,162	1,180	■
Percent Minority	N/A	N/A	14%	14%	■
Total Veteran Employees	N/A	N/A	699	825	■
Percent Veteran Employees	N/A	N/A	9%	10%	■
Total Disability Status Employees	N/A	N/A	372	397	■
Percent Disability Status Employees	N/A	N/A	5%	5%	■
Employee Safety Metrics					
Recordable Incident Rate	7.01	0.75	1.21	1.23	■
Lost-time Case Rate	2.00	0.11	0.34	0.50	■
Days Away, Restricted, and Transfer (DART) Rate	3.22	0.40	0.75	0.84	■
Work-related Fatalities	1.00	0.00	1.00	0.00	■
Fresh Water Resources					
Water Withdrawals - Consumptive (Billions of Liters/Net MWh)	N/A	2.94E-07	3.19E-07	3.74E-07	■
Water Withdrawals - Non-Consumptive (Billions of Liters/Net MWh)	N/A	7.61E-05	7.74E-05	6.88E-05	■
Waste Products					
Amount of Hazardous Waste Manifested for Disposal (tons)	N/A	52.1	23.9	23.7	■
Percent of Coal Combustion Products Beneficially Used	N/A	10%	13%	15%	■



NATURAL GAS BUSINESS SUSTAINABILITY METRICS

Parent Company: CMS Energy
 Operating Company(s): Consumers Energy Company
 Business Type(s): Vertically Integrated
 State(s) of Operation: Michigan
 Regulatory Environment: Regulated
 Report Date: October 1, 2020



TREND KEY: ■ Not Rated ■ No Change ■ Better ■ Worse

NATURAL GAS DISTRIBUTION

Methane Emissions and Mitigation from Distribution Mains

	2018	2019	Trend
Number of Gas Distribution Customers	1,775,565	1,782,031	■
Distribution Mains in Service			
Plastic (miles)	14,502	14,734	■
Cathodically Protected Steel - Bare & Coated (miles)	12,339	12,387	■
Unprotected Steel - Bare & Coated (miles)	485	456	■
Cast Iron / Wrought Iron - without upgrades (miles)	402	382	■
Plan/Commitment to Replace/Upgrade			
Remaining Miles of Distribution Mains (# years to complete)			
Unprotected Steel (Bare & Coated) (# years to complete)	18	17	■
Cast Iron / Wrought Iron (# years to complete)	18	17	■

In order to improve the safety and reliability of our natural gas system, Consumers Energy is investing nearly \$2 billion to replace 2,600 miles of natural gas pipelines. Our Enhanced Infrastructure Replacement Program (EIRP) is a 19-year project, which began in 2011.

Distribution CO₂e Fugitive Emissions

	2018	2019	Trend
CO ₂ e Fugitive Methane Emissions from Gas Distribution Operations (metric tons)	233,003	226,912	■
CH ₄ Fugitive Methane Emissions from Gas Distribution Operations (metric tons)	9,320	9,076	■
CH ₄ Fugitive Methane Emissions from Gas Distribution Operations (MMSCF/year)	485	473	■
Annual Natural Gas Throughput from Gas Distribution Operations in thousands of standard cubic feet (Mscf/year)	381,210,972	387,948,984	■
Annual Methane Gas Throughput from Gas Distribution Operations in millions of standard cubic feet (MMscf/year)	362,150	368,547	■
Fugitive Methane Emissions Rate (MMscf of Methane Emissions per MMscf of Methane Throughput)	0.134%	0.128%	■

NATURAL GAS TRANSMISSION & STORAGE

Onshore Natural Gas Transmission Compression Methane Emissions¹

	3 of 7 compressor stations are above Subpart W reporting threshold	Data for all 7 compressor stations, regardless of reporting threshold	Trend
Pneumatic Device Venting (metric tons/year)	0	0	■
Blowdown Vent Stacks (metric tons/year)	40	1,240	■
Transmission Storage Tanks (metric tons/year)	1	0	■
Flare Stack Emissions (metric tons/year)	0	0	■
Centrifugal Compressor Venting (metric tons/year)	14	21	■
Reciprocating Compressor Venting (metric tons/year)	72	736	■
Equipment leaks from valves, connectors, open ended lines, pressure relief valves, and meters (metric tons/year)	31	148	■
Other Leaks (metric tons/year)	0	0	■
Total Transmission Compression Methane Emissions (metric tons/year)	158	2,145	■
Total Transmission Compression Methane Emissions (CO ₂ e/year)	3,955	53,629	■
Total Transmission Compression Methane Emissions (MSCF/year)	8,240	111,727	■

1. Emissions appear to be higher in 2019 because we included emissions not previously reported. Prior year data includes only those required to be reported under 40 CFR Part 98, Subpart W. The 2019 data includes information reported under Subpart W and also additional emissions not required to be reported under Subpart W.

TREND KEY: ■ Not Rated ■ No Change ■ Better ■ Worse

NATURAL GAS TRANSMISSION AND STORAGE

2018

2019

Trend

Underground Natural Gas Storage Methane Emissions¹

	2018	2019	Trend
Below reporting threshold for Subpart W			
Pneumatic Device Venting (metric tons/year)		N/A	■
Flare Stack Emissions (metric tons/year)		N/A	■
Centrifugal Compressor Venting (metric tons/year)		N/A	■
Reciprocating Compressor Venting (metric tons/year)		N/A	■
Equipment leaks from valves, connectors, open ended lines, pressure relief valves, and meters (metric tons/year)		N/A	■
Other Equipment Leaks (metric tons/year)		N/A	■
Equipment leaks from valves, connectors, open-ended lines, and pressure relief valves associated with storage wellheads (metric tons/year)		77.4	■
Other equipment leaks from components associated with storage wellheads (metric tons/year)		N/A	■
Total Storage Compression Methane Emissions (metric tons/year)		77.4	■
Total Storage Compression Methane Emissions (CO ₂ e/year)		1,935.0	■
Total Storage Compression Methane Emissions (MSCF/year)		4,031.3	■

Onshore Natural Gas Transmission Pipeline Blowdowns¹

	2018	2019	Trend
Below reporting threshold for Subpart W			
Transmission Pipeline Blowdown Vent Stacks (metric tons/year)		863	■
Transmission Pipeline Blowdown Vent Stacks (CO ₂ e/year)		21,574	■
Transmission Pipeline Blowdown Vent Stacks (MSCF/year)		44,946	■

Other Non-Sub W Emissions Data

	2018	2019	Trend
Total Methane Emissions from additional sources not recognized by 40 CFR 98 Subpart W (metric tons/year)	N/A	1,287	■
Total Methane Emissions from additional sources not recognized by 40 CFR 98 Subpart W (CO ₂ e/year)	N/A	32,172	■
Total Methane Emissions from additional sources not recognized by 40 CFR 98 Subpart W (MSCF/year)	N/A	67,024	■

Summary and Metrics¹

	2018	2019	Trend
Total Transmission and Storage Methane Emissions (MMSCF/year)	8	228	■
Annual Natural Gas Throughput from Gas Transmission and Storage Operations (MSCF/year)	293,722,672	543,706,132	■
Annual Methane Gas Throughput from Gas Transmission and Storage Operations (MMSCF/year)	279,037	516,521	■
Fugitive Methane Emissions Rate (MMscf of Methane Emissions per MMscf of Methane Throughput)	0.003%	0.044%	■

NATURAL GAS GATHERING AND BOOSTING²

Methane Emissions

	2018	2019	Trend
Gathering and Boosting Pipelines, Blow Down Volumes, and Emissions	N/A	N/A	■
Total Miles of Gathering Pipeline Operated by gas utility (miles)	N/A	N/A	■
Volume of Gathering Pipeline Blow Down Emissions (scf)	N/A	N/A	■
Gathering Pipeline Blow-Down Emissions outside storage and compression facilities (metric tons CO ₂ e)	N/A	N/A	■

CO₂e Combustion Emissions for Gathering and Boosting Compression

	2018	2019	Trend
CO ₂ e Emissions for Gathering & Boosting Compression Stations (metric tons)	N/A	N/A	■
Conventional Combustion Emissions From Gathering and Boosting Compression	N/A	N/A	■

Emissions reported for all permitted sources (minor or major)

	2018	2019	Trend
NO _x (metric tons per year)	N/A	N/A	■
VOC (metric tons per year)	N/A	N/A	■

1. Emissions appear to be higher in 2019 because we included emissions not previously reported. Prior year data includes only those required to be reported under 40 CFR Part 98, Subpart W. The 2019 data includes information reported under Subpart W and also additional emissions not required to be reported under Subpart W.

2. Consumers Energy does not own such facilities, but is including this section in our report to be consistent with other utilities using the same reporting template.