

Waste and Landfill Avoidance Report

2020 Annual Report

CMS ENERGY

CMS ENERGY

Enterprises™

Consumers Energy

Count on Us®

WASTE REDUCTION

Achieving our Goal - Reducing Waste by 54%

We've focused sharply on reducing waste—and those efforts are generating positive results. In 2018, we established a five-year goal to reduce the amount of waste going to landfill by 35% starting from a 2017 baseline. In 2020, we surpassed that goal and reduced landfill waste 16,205 tons.

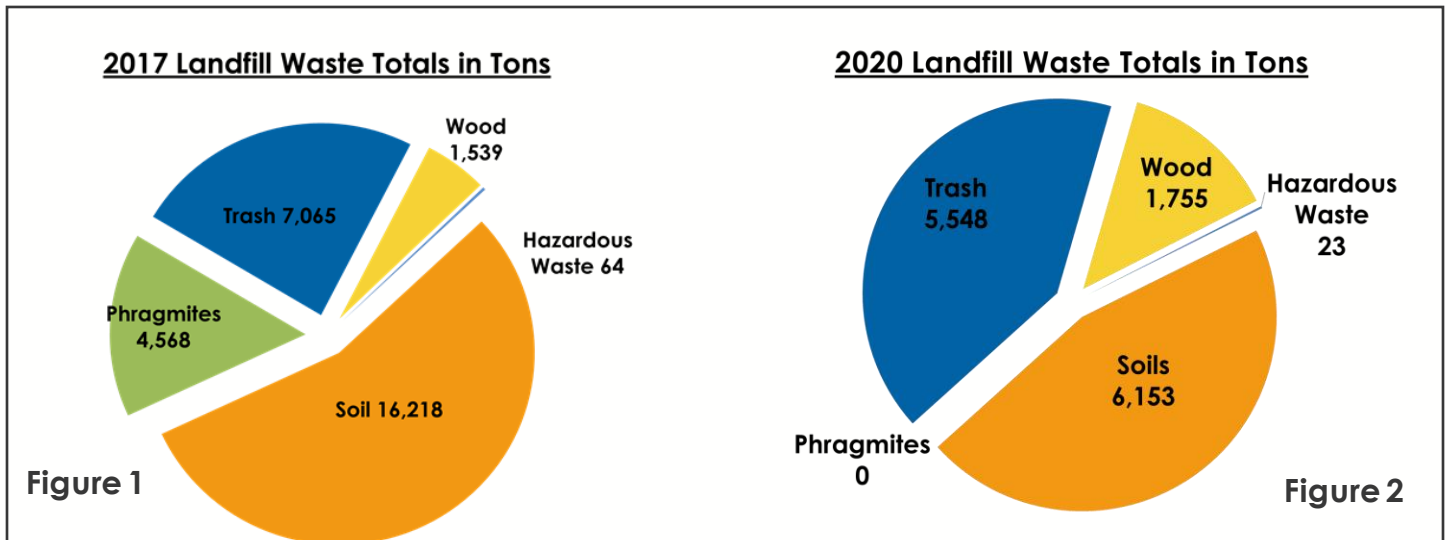
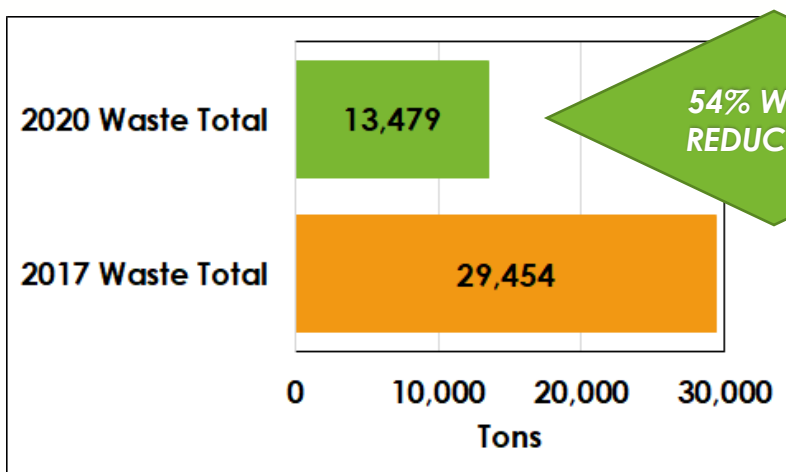


Figure 1 compares the 2017 and 2020 waste totals for each type of landfilled or reused material. We eliminated invasive Phragmites from being sent to landfill and significantly reduced streams of soil and trash waste sent to landfill.

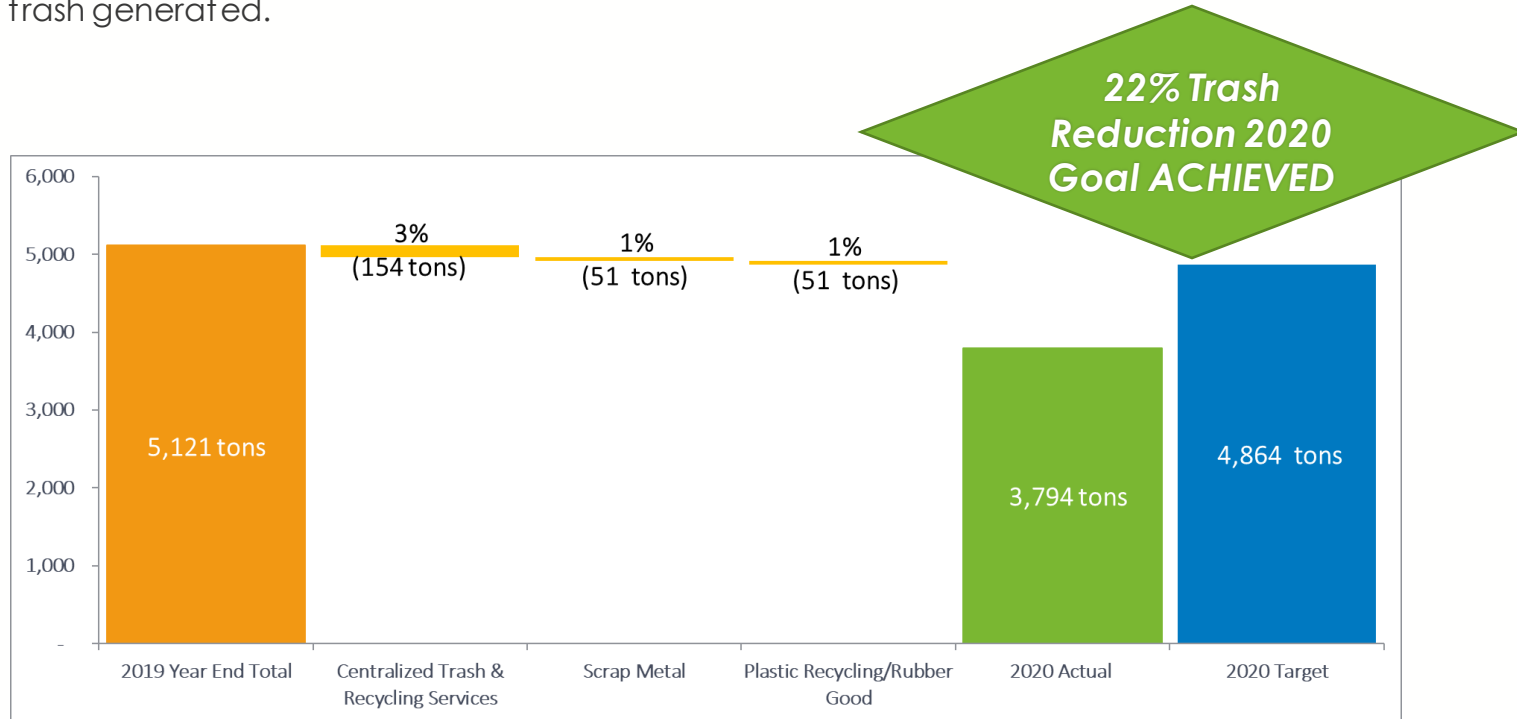


We met our goal to reduce waste 35% by the end of 2022 – TWO YEARS EARLY!

HOW WE ACHIEVED OUR GOAL

In 2020, we launched a 5% trash reduction goal to support our Company World Class Performance Metric of reducing waste 35%. The goal was to reduce trash sent to landfill 5% compared to a 2019 baseline. The trash reduction goal was the first company goal tied to employee bonuses and that directly supports the planet portion of our triple bottom line: People, Planet, and Prosperity.

The 2020 target for trash sent to landfill was 4,864 tons, which is a 5% reduction of the 2019 trash totals. The actual trash generated in 2020 was 3,794 tons, which is a 22% reduction in trash generated.



The above chart shows the glide path targets to achieve the Trash Reduction Goal.

2021 WASTE REDUCTION GOAL

The 2021 waste reduction goal will continue our waste-trimming momentum and further reduce waste sent to landfill by 10% from the 2020 year-end total.

The goal targets waste that could potentially be reduced through reuse, recycling and innovative thinking. This includes soils, trash, wood and hazardous waste sent to landfill.

We refined our goal to focus our efforts and better align with the purpose of driving positive culture change and reducing streams of waste that do not need to go to landfill. Starting in 2021, we will no longer include any contaminated soils in the goal because that waste is regulated with limited options for reuse or recycling.

OUR STRATEGY

- Company-wide installation of recycling and composting collection centers
- Site evaluations to quantify the amount of trash we generate and how each facility handles waste
- Recycle utility poles and rubber protective equipment used by line workers

Our Investment Recovery Center collects a wide variety of materials, including rubber gloves, sleeves and other protective equipment used to safely maintain and restore power on Michigan's electric grid. The materials have potential reuse as a primary ingredient in surfaces at playgrounds and dog parks.
- Conserve and recycle soil and construction materials on projects that require clearing and digging

We recently reused over 31,000 tons of soil on a city gate project and recycled wood mats from a natural gas pipeline project as biomass fuel at our CMS Enterprises Genesee Power Station. Last summer, we worked with landscape supply and mulch production companies to recycle wood waste from a massive pipeline replacement project. The mulch was used for homes and businesses.
- Engage employees to work in "Green Teams" devoted to caring for the environment at and near their work locations
- Fight Phragmites, an invasive species that threatens the health of Michigan's coastal wetlands

We use innovative land-management tactics to keep the tall, harmful grass out of landfills once it's safely removed.

2020 SUCCESSES

Investment Recovery Center Landfill Avoidance	2019	2020	Increased Recycling in Tons
Scrap Metal	4,788	5,758	970
Plastic Gas Pipe	0	78	78
Rubber Goods	0	1	1
TOTAL	4,788	5,837	1,049

Increased recycling from the Investment Recovery Center efforts totaled 1,049 tons from 2019 to 2020.

2020 Soil Reuse Top Contributors	Tons
Jackson Generation Station	8,000
Gratiot Wind	10,206
Manistee MGP	12,637
Lansing SC	20,000
Macomb SC	31,492

Top five projects that reported soil reuse

Top 7 Site Evaluation Reductions	Tons Reduced
Campbell	9.6
Ludington	14.4
Trail Street	20.8
Kalamazoo	28.8
Saginaw	48
Flint	62.4
Karn	163
TOTAL	385

Sites reduced trash by evaluating and reducing the size, frequency of pick up and number of containers at their site to more appropriately fit the trash and recycling needs.

CMS ENTERPRISES

Founded in 1987, CMS Enterprises is a wholly owned, unregulated subsidiary of CMS Energy Corporation. CMS Enterprises owns/operates more than 1,300 MW of generating assets nationwide. CMS Enterprises focus is investment in U.S.-based, utility-scale, mid- to late-stage wind and solar renewable energy and select storage development projects. CMS Enterprises has a strong renewable and clean energy portfolio comprised of utility-scale wind, solar, biomass and natural gas generation facilities. CMS Enterprises uses waste biomass as fuel in four of its generation facilities, saving over 813,000 tons of material from entering landfills.

HAZARDOUS WASTE REDUCTION

We are always looking at methods to reduce hazardous waste generation by:

- Product storage that reduces releases
- Changing processes to reduce the creation of hazardous waste
- Segregating nonhazardous wastes from hazardous wastes
- Purchasing products that will not result in hazardous waste
- Limiting product orders to reduce excess that becomes waste

2020 Waste Data

Consumers Energy	
All Waste in Tons	2020
Asbestos	1,282
Hazardous Waste	25
Non-hazardous Liquid	5,010
Manufactured Gas Plant Impacted Waste	63,098
Non-hazardous Solids (mostly soils)	36,889
PCB Impacted Waste	42
Wood	1,755
Incinerated	0
Total	108,100

CMS Enterprises	
All Waste in Tons	2020
Asbestos	0
Hazardous Waste	0
Non-hazardous Liquid	37
Manufactured Gas Plant Impacted Waste	0
Non-hazardous Solids	572
PCB Impacted Waste	0
Wood	0
Incinerated	0
Total	608

Ash and Landfill Avoidance

INCLUDED: Antifreeze, batteries, electronics, empty drums, fuel or other recoverable petroleum product, lighting ballasts, lighting lamps, mercury and mercury contained in equipment, oil filters, paint, returnable cans and bottles, soil, used oil, cardboard, composting, glass, paper, plastic, single stream recycling, wood products, asphalt, concrete, wood chips, smart meters, drywall, metals, toner cartridges, paper, scrap metal, rubber goods, transformers, wood reels, coal, wood pallets, appliance recycling, EIRP recycled directional drilling muds, Phragmites, other reused materials diverted from the landfill.

Ash:

- From 2015 to current, any new initiatives to market ash.
- Bottom ash re-use that was determined by the regulatory body (EGLE) to be beneficial re-use.

2020 Ash Data

Consumers Energy	
Coal Ash in Short Tons	2020
Landfilled	215,188
Beneficially Reused	19,706
Total Generated	234,894

CMS Enterprises	
Combustion Ash in Short Tons	2020
Landfilled	38,281
Beneficially Reused	9,108
Total Generated	47,389

Consumers Energy also used 518,470 short tons of previously generated ash as structural fill in the Weadock Landfill, which displaced the need to use virgin material.

2020 Landfill Avoidance Data

Consumers Energy

Landfill Avoidance Totals in Tons	2020
Rubber Goods	1
Oil Filters	1
Toner Cartridges	1
Paper Savings	2
Plastic Gas Pipe	23
Compost	33
Recoverable Fuel	99
Burned	111
Universal	115
Mixed Recycling	1,006
Used Oil	1,288
Asphalt	3,310
Appliances	4,339
Wood-Recycle	11,726
Concrete	20,975
Scrap Metal	22,514
Drilling Fluids	39,197
Soil-Reuse	88,133
Coal Ash	18,744
Grand Total	211,617

CMS Enterprises

Landfill Avoidance Totals in Tons	2020
Universal	1
Mixed Recycling	3
Used Oil	32
Scrap Metal	164
Grand Total	200

2020 Benchmarking

Benchmarking data requests criteria vary. The data in the following sections address the specific criteria requested by each benchmarking entity. The percentages and totals change in accordance with the specific information requested. For the purposes of benchmarking, data is provided for Consumers Energy, CMS Enterprises and the parent company, CMS Energy.

Dow Jones Sustainability Index

Waste Disposed

INCLUDED: Asbestos, MGP, NH solids, PCB ballasts, PCB solids, Phragmites, soil, spill material, trash and wood.

EXCLUDED: Ash, hazardous waste and liquids.

Landfill Avoidance

INCLUDED: Rubber goods, oil filters, toner cartridges, paper savings, plastic gas pipe, compost, recoverable fuel, burned organic material, universal waste, mixed recycling, used oil, asphalt, recycled wood, concrete, scrap metal, drilling fluids and reused soil. Ash that was generated and reused in the same year.

EXCLUDED: Appliances (refrigerators and freezers recycling from customers).

Dow Jones data is reported in metric tons. Ash percentage is based on ash data only. It does not include other non-hazardous solids, hazardous waste, or liquids.

Consumers Energy

Waste Disposed	Unit	FY 2017	FY 2018	FY 2019	FY 2020
a) Total Waste Generated	Metric tonnes	185,565	121,562	110,134	264,534
b) Total Waste Used/Recycled/Sold	Metric tonnes	135,596	72,615	45,059	171,035
Total Waste Disposed (a-b)	Metric tonnes	48,970	48,947	65,075	93,476
Data coverage (as % of denominator)	Percentage of: MWh generated	90	90	90	90
Hazardous Waste Generated	Metric tonnes	76	22	24	23
Data coverage (as % of denominator)	Percentage of: MWh generated	100	100	100	100
Ash and gypsum waste, composted, reused, recycled or recovered	%	0	12	23	8
Data coverage (as % of denominator)	Percentage of: MWh generated	100	100	100	100

CMS Enterprises

Waste Disposed	Unit	FY 2017	FY 2018	FY 2019	FY 2020
a) Total Waste Generated	Metric tonnes	4,640	6,887	2,616	734
b) Total Waste Used/Recycled/Sold	Metric tonnes	4,612	6,805	2,496	182
Total Waste Disposed (a-b)	Metric tonnes	28	82	120	553
Data coverage (as % of denominator)	Percentage of: MWh generated	90	90	90	90
Hazardous Waste Generated	Metric tonnes	0	0	0	0
Data coverage (as % of denominator)	Percentage of: MWh generated	100	100	100	100
Ash and gypsum waste, composted, reused, recycled or recovered	%	15	15	19	19
Data coverage (as % of denominator)	Percentage of: MWh generated	100	100	100	100

CMS Energy: Consumers Energy and CMS Enterprises

Waste Disposed	Unit	FY 2017	FY 2018	FY 2019	FY 2020
a) Total Waste Generated	Metric tonnes	190,205	128,449	112,750	265,268
b) Total Waste Used/Recycled/Sold	Metric tonnes	141,208	79,420	47,555	171,217
Total Waste Disposed (a-b)	Metric tonnes	48,998	49,029	65,195	94,051
Data coverage (as % of denominator)	Percentage of: MWh generated	90	90	90	90
Hazardous Waste Generated	Metric tonnes	76	22	24	23
Data coverage (as % of denominator)	Percentage of: MWh generated	100	100	100	100
Ash and gypsum waste, composted, reused, recycled or recovered	%	4	13	22	10
Data coverage (as % of denominator)	Percentage of: MWh generated	100	100	100	100

CDP Climate

Consumers Energy

Description	Waste
Metric Value	12,822
Metric Numerator	12,822
Metric Denominator (intensity metric only)	
% Change from Previous Year	48%
Direction of Change	Reduction
Please Explain:	
<p>In 2018, the Consumers Energy established a set of planet goals including a goal for land, water, waste and air performance. The waste goal is to reduce Company waste 35% from a 2017 baseline of 29,545 tons of waste by the end of 2022. In 2020, the Company generated 13,479 tons of waste and surpassed the goal with a 54% reduction from the 2017 baseline. Reducing our waste reduces the number of waste pickups and reduces the amount of time trucks are on the road picking up and disposing of waste. CMS Enterprises is not included in this goal.</p>	

CDP Carbon Scope 3 Emissions

EXCLUDED: Does not include hazardous waste, liquids, toner cartridges, appliances (refrigerators and freezers recycling from customers). All ash is counted as fly ash.

Consumers Energy: Waste

Metric Tons CO ₂ e/ Short Ton Material				
2020 All Landfill Waste	Emission Material	Short Tons	Landfilled	Total Emission
Asbestos	Mixed MSW	1282	0.52	666
Hazardous Waste		25		
Non-hazardous Liquid		5,010		
Manufactured Gas Plant Impacted Waste	Mixed MSW	63,098	0.52	32,811
Non-hazardous Solids	Mixed MSW	36,889	0.52	19,182
PCB Impacted Waste	Mixed MSW	42	0.52	22
Wood	Dimensional Lumber	1755	0.17	298
Incinerated		0		
Total				52,980

CMS Enterprises: Waste

Metric Tons CO ₂ e/ Short Ton Material				
2020 All Landfill Waste	Emission Material	Short Tons	Landfilled	Total Emission
Asbestos	Mixed MSW	0	0.52	
Hazardous Waste		0		
Non-hazardous Liquid		37		
Manufactured Gas Plant Impacted Waste	Mixed MSW	0	0.52	
Non-hazardous Solids	Mixed MSW	572	0.52	297
PCB Impacted Waste	Mixed MSW	0	0.52	
Wood	Dimensional Lumber	0	0.17	
Incinerated		0		
Total				297

CMS Energy Waste: Consumers Energy and CMS Enterprises

Metric Tons CO ₂ e/ Short Ton Material				
2020 All Landfill Waste	Emission Material	Short Tons	Landfilled	Total Emission
Asbestos	Mixed MSW	1282	0.52	666
Hazardous Waste		25		
Non-hazardous Liquid		5,047		
Manufactured Gas Plant Impacted Waste	Mixed MSW	63,098	0.52	32,811
Non-hazardous Solids	Mixed MSW	37,461	0.52	19,480
PCB Impacted Waste	Mixed MSW	42	0.52	22
Wood	Dimensional Lumber	1755	0.17	298
Incinerated		0		
Total				53,277

CMS Enterprises: Landfill Avoidance

Metric Tons CO ₂ e/ Short Ton Material						
2020 Landfill Avoidance Totals	Emission Material	Short Tons	Recycle	Combusted	Compost	Total Emission
Universal	Mixed Electronics	1	NA			0
Mixed Recycling	Mixed Recyclables	3	0.09			0.3
Used Oil		32				
Scrap Metal	Mixed Metal	164	0.23			38
Total						38.3

Consumers Energy: Landfill Avoidance

	Metric Tons CO ₂ e/ Short Ton Material					
2020 Landfill Avoidance Totals	Emission Material	Short Tons	Recycle	Combusted	Compost	Total Emission
Rubber Goods						
Oil Filters	Mixed Metal	1	0.23			0.18
Toner Cartridges		1				
Paper Savings	Office Paper	2	0.02			0.03
Plastic Gas Pipe	HDPE	23	0.21			4.74
Compost	Mixed Organics	33			0.17	5.53
Recoverable Fuel		99				
Burned	Yard Trimmings	111		0.05		5.55
Universal	Mixed Electronics	115	NA			0
Mixed Recycling	Mixed Recyclables	1,006	0.09			90.54
Used Oil		1,288				
Asphalt	Asphalt Concrete	3,310	0			0
Appliances		4,339				
Wood-Recycle	Dimensional Lumbar	11,726	0.09			1055.3
Concrete	Concrete	20,975	0.01			209.7
Scrap Metal	Mixed Metal	22,514	0.23			5178.3
Drilling Fluids		39,197				
Soil-Reuse		88,133	0			0
Total						6550

CMS Energy Landfill Avoidance: Consumers Energy and CMS Enterprises

Metric Tons CO ₂ e/ Short Ton Material						
2020 Landfill Avoidance Totals	Emission Material	Short Tons	Recycle	Combusted	Compost	Total Emission
Rubber Goods		1	0.21			
Oil Filters	Mixed Metal	1	0.23			0.18
Toner Cartridges		1				
Paper Savings	Office Paper	2	0.02			0.03
Plastic Gas Pipe	HDPE	23	0.21			4.74
Compost	Mixed Organics	33			0.17	5.53
Recoverable Fuel		99				
Burned	Yard Trimmings	111		0.05		5.55
Universal	Mixed Electronics	116	NA			0
Mixed Recycling	Mixed Recyclables	1,009	0.09			90.82
Used Oil		1,319				
Asphalt	Asphalt Concrete	3,310	0			
Appliances		4,339				
Wood-Recycle	Dimensional Lumbar	11,726	0.09			1055.3
Concrete	Concrete	20,975	0.01			209.7
Scrap Metal	Mixed Metal	22,679	0.23			5216.1
Drilling Fluids		39,197				
Soil-Reuse		88,133	0			
Total						6588

Consumers Energy: Ash

	Metric Tons CO ₂ e/ Short Ton Material				
2020 Combustion Ash	Emission Material	Short Tons	Recycled	Landfilled	Total Emission
Landfilled	Fly Ash	215,188		.02	4,304
Beneficially Reused	Fly Ash	19,706	0.01		197
Total Generated	Fly Ash	234,894			4,501

CMS Enterprises: Ash

	Metric Tons CO ₂ e/ Short Ton Material				
2020 Combustion Ash	Emission Material	Short Tons	Recycled	Landfilled	Total Emission
Landfilled	Fly Ash	38,281		.02	766
Beneficially Reused	Fly Ash	9,108	0.01		91
Total Generated	Fly Ash	47,389			857

CMS Energy Ash: Consumers Energy and CMS Enterprises

	Metric Tons CO ₂ e/ Short Ton Material				
2020 Combustion Ash	Emission Material	Short Tons	Recycled	Landfilled	Total Emission
Landfilled	Fly Ash	253,469		.02	5,069
Beneficially Reused	Fly Ash	28,814	0.01		288
Total Generated	Fly Ash	282,283			5,358

ISS

Waste Disposed

INCLUDED: Asbestos, MGP, NH solids, PCB ballasts, PCB solids, Phragmites, soil, spill material, trash, wood.

EXCLUDED: Ash, hazardous waste and liquids.

Landfill Avoidance

INCLUDED: Rubber goods, oil filters, toner cartridges, paper savings, plastic gas pipe, compost, recoverable fuel, burned organic material, universal waste, mixed recycling, used oil, asphalt, recycled wood, concrete, scrap metal, drilling fluids, reused soil.

EXCLUDED: Appliances (refrigerators and freezers recycling from customers).

Data is reported in short tons.

Consumers Energy

	Short Tons
Hazardous Waste	25
Non-hazardous waste	264,534
% of non-hazardous waste recycled	65%
% of non-hazardous waste incinerated	0
% of non-hazardous waste landfilled	35%

CMS Enterprises

	Short Tons
Hazardous Waste	0
Non-hazardous waste	734
% of non-hazardous waste recycled	25%
% of non-hazardous waste incinerated	0
% of non-hazardous waste landfilled	75%

CMS Energy: Consumers Energy and CMS Enterprises

	Short Tons
Hazardous Waste	25
Non-hazardous waste	265,268
% of non-hazardous waste recycled	65%
% of non-hazardous waste incinerated	0
% of non-hazardous waste landfilled	35%

Corporate Knights

Total Waste Generated

INCLUDED: Landfill waste, landfill avoidance, ash landfilled and ash beneficially reused. Total amount of solid waste produced in tonnes (includes non-hazardous waste + hazardous waste + waste sent for incineration. In addition to solid waste, tailings, waste rock, and ash are also counted for mining and fossil fuel sectors).

EXCLUDED: Liquids

Total Waste Recycled

INCLUDED: Landfill avoidance and ash beneficially reused.

EXCLUDED: Appliances (refrigerators and freezers recycling from customers).

Consumers Energy

	Short Tons
Total Waste Generated	526,517
Total Waste Recycled	208,239

CMS Enterprises

	Short Tons
Total Waste Generated	48,198
Total Waste Recycled	9,308

CMS Energy: Consumers Energy and CMS Enterprises

	Short Tons
Total Waste Generated	574,715
Total Waste Recycled	217,547