



DTE Electric Company
2019 Toxics Release Inventory Report
Community Right-to-Know

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About the Toxics Release Inventory

The Toxics Release Inventory (TRI) is a publicly available database of information on the release and transfer of nearly 650 chemicals by private companies and government facilities. Congress created TRI under the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA) and the U.S. Environmental Protection Agency (EPA) administers the program. In May 1997, electric utilities were added to the list of manufacturing industries required to report TRI data to the EPA. Reports are generated once per year for the previous year's emissions. The inventory covers air emission, water discharge, releases to land and amounts transferred to disposal facilities.

All TRI report data is available on the EPA's website: www.epa.gov/tri.

Commitment to the Environment

DTE Energy is committed to minimizing its impact on the environment, developing cleaner ways to produce energy, helping customers use energy more efficiently, and partnering to enhance the environment for plants, animals and people.

Assuring DTE Energy's power plants, electrical distribution system and other operations meet all environmental regulations is the starting point for the company's commitment to environmental stewardship. When possible and practical, DTE Energy goes beyond regulations to adopt practices that provide additional environmental benefits.

Currently, more than 30 DTE Energy facilities have received Wildlife Habitat Council certification for improving their grounds to support native wildlife. Also, DTE Energy has planted more than 20 million trees throughout Michigan to enhance parks, restore forests, and remove carbon dioxide from the atmosphere.

DTE Electric Company (DTE Electric) is a subsidiary of DTE Energy. For more information on DTE's corporate citizenship, visit dtecitizenship.com.

How to Interpret the Data

DTE Electric's TRI releases appear large due to land disposal volumes. Chemical releases reported do not represent the chemical concentrations as they occur in the environment.

- In the TRI program, a "release" is defined as a chemical that is emitted to the air, discharged to the water or managed for disposal. DTE Electric's air and water releases to the environment are smaller compared to the managed land releases. The land management accounts for putting the coal combustion by-products into managed landfills.

All DTE Electric power plants operate in compliance with state and federal emissions and discharge regulations.

- DTE Electric is committed to protecting the public health and the environment in its power plant operations. As a baseline, DTE ensures all plants comply with state and federal regulations governing releases to the air, land, and water. Beyond that, each power plant has voluntarily developed a site-specific environmental management plan and earned ISO 14001 certification. In addition, most operating power plants have earned Clean Corporate Citizen designations from the Michigan Department of Environment Great Lakes and Energy (MI EGLE). This designation recognizes facilities that are top performers in environmental management and stewardship.

TRI data does not measure human exposure or provide health information.

- The U.S. EPA has listed approximately 650 chemicals and chemical substances on the TRI list. These chemicals, like many others not on the list, can potentially cause harm depending on a person's exposure or dose. Dose relates to exposure time and concentration. For example, exposure to ultraviolet rays from the sun can be harmless, cause mild-to-serious sunburn or even potentially lead to fatal disease such as skin cancer.
- The U.S. EPA's TRI reports do not include dose information and therefore do not provide the public with health information. Per the EPA, the TRI information is not designed to show if chemical releases pose potential health or environmental hazards. Rather, the reports divulge how many pounds of chemicals companies release onsite and transfer to offsite disposal facilities.

Power plant emissions will vary from year to year based on coal consumption and element concentrations in the coal.

- In 2019, DTE Energy generated about 50% of its electricity at five coal-fired power plants, 10% from renewable wind and solar energy sources, and the remainder from nuclear power, oil, natural gas, and hydro. While DTE Energy increases its use of renewable energy sources, the company continues to use coal because it has proven to be an economic, domestically available and abundant fuel.
- DTE Electric obtains coal from dozens of mines, and the coal from each mine has a unique mix of trace elements that are the source for chemicals reported in the TRI data. Generally, TRI releases at each plant will vary due to trace elements in coal and volume of coal burned each year.
- Power plants are taken in and out of service for repairs or to accommodate generation needs. Because releases are reported in pounds, not percentages of power produced, releases will fluctuate from year to year depending on how much power each plant produces.

DTE Energy is committed to the generation of electricity in an environmentally responsible manner.

- DTE Electric has long been an innovator in using pollution control technologies. For example, the company used electrostatic precipitators as early as 1924 and is among the world leaders in blending low-sulfur coal. DTE Electric continues to invest in new technology and has spent nearly \$2 billion to install equipment at the Monroe Power Plant to control emissions of sulfur dioxide, nitrogen oxides, mercury and hydrogen chloride. The company has also invested about \$250 million in dry sorbent injection systems at Belle River, St. Clair, River Rouge, and Trenton Channel power plants to meet the 2019 mercury and acid gas limits.
- The TRI includes a category of releases to land. It's important to note that these land releases involve disposal of material into engineered and licensed landfills. By-products from coal combustion are not released uncontrolled to the environment.
- To reduce land releases, DTE Electric actively recycles fly ash from several power plants for use as a concrete additive.

2019 Summary

DTE Electric's 2019 emissions decrease 24% from 2018.

Overall, DTE Electric's emission releases, reportable under the U.S. EPA's TRI, decreased 24%, or 2,436,000 pounds, in 2019 compared to 2018, while the total amount of coal consumed by the plants decreased by 11.5%.

Air releases increased 28%, or 0.3 million pounds due to increased eastern coal usage at Monroe and higher concentrations of chlorine, fluorine, and sulfur in coal burned. The flue gas desulfurization and selective catalytic reduction systems at Monroe Power Plant continue to neutralize hydrogen chloride, hydrogen fluoride, and sulfuric acid gas releases by 97%, 94%, and 85%, respectively. Managed land volumes decreased 30%, or 2.75 million pounds, due to decreased coal consumption and increased ash recycling. Water releases increased by about 60%, or 20,700 pounds, in part due to increased FGD waste water discharge.

2019 Total Plant Emissions

Power Plant	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Belle River	1,536,139	119,015	1,410,153	6,971.9
Fermi II	3,492.23	2.10	3,490.13	0
Greenwood	0.24	0.24	0	0
Monroe	2,972,993	1,118,594	1,810,308	44,092.0
River Rouge	163,611	2,272	161,279	60.1
St. Clair	2,481,199	74,902	2,402,844	3,452.2
Trenton Channel	548,034	33,219	514,285	530.0
RY 2019 Total	7,705,469	1,348,004.7	6,302,358	55,106.2
System Total, % Change over 2018	-24.0%	28.4%	-30.4%	60.2%
System Total, Change over 2018, Pounds	(2,436,398)	297,826	(2,754,938)	20,714
RY2018 Total	10,141,868	1,050,179.0	9,057,296	34,392.2

2019 Releases by Plant

Belle River Power Plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Barium Compounds	1,307,300	1,200	1,300,000	6,100
Benzo(g,h,i)perylene	0.47	0.14	0.33	0.00
Chromium Compounds	7,711	91	7,500	120
Copper Compounds	20,180	130	20,000	50
Dioxin ¹	1.06405	1.06405	0	0
Hydrogen Chloride	56,000	56,000	NA	NA
Hydrogen Fluoride	36,000	36,000	NA	NA
Lead Compounds	4,706.97	60.40	4,629.43	17.14
Manganese Compounds	35,513	163	35,000	350
Mercury Compounds	163.76	47.31	110.74	5.71
Nickel Compounds	7,075	110	6,900	65
PACs ²	15.28	3.16	12.12	0.00
Sulfuric acid	24,000	24,000	NA	NA
Vanadium Compounds	22,114	110	22,000	4
Zinc Compounds	15,360	1,100	14,000	260
TOTAL TRI (except Dioxin)	1,536,139.5	119,015.0	1,410,152.6	6,971.9

Notes: ¹ Dioxin Emissions are reported to the EPA in grams
² PACs = Polycyclic Aromatic Compounds

Fermi II Power Plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Released)	Water (Pounds Discharged)
Lead	3,492.23	2.10	3,490.13	NA

Greenwood Energy Center

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
PACs ¹	0.24	0.24	0.0	0.0

Notes: ¹PACs (Polycyclic Aromatic Compounds) use exceeded the TRI threshold, but experienced minor releases to the environment.

Monroe Power Plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Ammonia	33,530	33,000	0	530
Arsenic Compounds	20,710	120	20,000	590
Barium Compounds	1,409,800	1,000	1,400,000	8,800
Chromium Compounds	41,100	240	40,000	860
Cobalt Compounds	13,120	55	13,000	65
Copper Compounds	52,510	260	52,000	250
Dioxin ¹	2.9627	2.96273	0	0
Hydrogen chloride	130,000	130,000	NA	NA
Hydrogen fluoride	38,000	38,000	NA	NA
Lead Compounds	19,941.11	125.67	19,788.70	26.74
Manganese Compounds	76,304	304	75,000	1,000
Mercury Compounds	555.65	60.42	494.95	0.28
Nickel Compounds	36,760	290	36,000	470
PACs ²	32.71	8.71	24.00	0.00
Selenium Compounds	18,800	2,300	12,000	4,500
Sulfuric acid	910,000	910,000	NA	NA
Vanadium Compounds	82,230	230	56,000	26,000
Zinc Compounds	89,600	2,600	86,000	1,000
TOTAL TRI (except Dioxin)	2,972,993	1,118,593.8	1,810,308	44,092.0

Notes: ¹ Dioxin Emissions are reported to the EPA in grams

² PACs = Polycyclic Aromatic Compounds

River Rouge Power Plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Barium Compounds	160,106	46	160,000	60
Benzene	17	17	0	0
Hydrogen fluoride	2,200	2,200	NA	NA
Lead Compounds	1,246.83	4.02	1,242.76	0.05
Mercury Compounds	40.88	5.12	35.76	0.00
TOTAL TRI <i>(except Dioxin)</i>	163,611	2,272	161,279	60.1

Notes: ¹ Dioxin, Hydrogen chloride, and PACs did not exceed reporting thresholds in 2019

St. Clair Power Plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Barium Compounds	2,204,400	1,400	2,200,000	3,000
Benzo(g,h,l)perylene	0.21	0.11	0.10	0.00
Chromium Compounds	13,214	84	13,000	130
Copper Compounds	39,176	120	39,000	56
Dioxin ¹	0.8112	0.8112	0	0
Hydrogen chloride	29,000	29,000	NA	NA
Hydrogen fluoride	17,000	17,000	NA	NA
Lead Compounds	10,774.61	60.40	10,700.20	14.01
Manganese Compounds	60,204	120	60,000	84
Mercury Compounds	260.71	27.33	233.15	0.23
Nickel Compounds	10,030	88	9,900	42
PACs ²	13.41	2.41	11.00	0
Sulfuric Acid	26,000	26,000	NA	NA
Vanadium Compounds	38,170	100	38,000	70
Zinc Compounds	32,956	900	32,000	56
TOTAL TRI (except Dioxin)	2,481,199	74,902	2,402,844	3,452.2

Notes: ¹ Dioxin Emissions are reported to the EPA in grams
² PACs = Polycyclic Aromatic Compounds

Trenton Channel Power Plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Barium Compounds	511,400	870	510,000	530
Dioxin ¹	0.2935	0.2935	0	0
Hydrogen chloride	15,000	15,000	NA	NA
Hydrogen fluoride	8,200	8,200	NA	NA
Lead Compounds	4,220.16	43.00	4,177.16	0.00
Mercury Compounds	114.15	6.21	107.93	0.01
PACs ²	9,100	9,100	NA	NA
Sulfuric acid	548,034	33,219	514,285	530
TOTAL TRI (except Dioxin)	511,400	870	510,000	530

Notes: ¹Dioxin Emissions are reported to the EPA in grams
²PACs = Polycyclic Aromatic Compounds