



DTE Energy 2015 Toxics Release Inventory Report

Community Right to Know

Table of Contents

About The Toxics Release Inventory	2
How to Interpret the Data	3
2015 Summary	5
2015 Releases by Plant	
Belle River	6
Fermi	7
Greenwood	8
Monroe	9
River Rouge	10
St. Clair	11
Trenton Channel	12

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 Web site: 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'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 goes beyond regulations to adopt practices that provide additional environmental benefits.

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

For more information on DTE's corporate citizenship, visit dtecitizenship.com.

How to Interpret the Data

DTE Energy's releases appear very large.

- The releases from DTE Energy's electric power plants are reported in pounds, not in terms of the chemicals' concentrations in the environment. Due to the volume of coal required to generate power for 2.1 million households and businesses, the "pounds" numbers appear very large even though the release concentrations are very low. The TRI reports do not include the data that would indicate these very low concentrations.

All DTE power plants are in full compliance with state and federal emissions and discharge regulations.

- DTE is committed to protecting the public health and the environment in its power plant operations. As a baseline, we ensure that all of our plants are in full compliance with state and federal regulations governing releases to the air, land and water. Beyond that, each of our power plants 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 Environmental Quality. That 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 a potentially 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. According to 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 TRI element concentrations in the coal.

- In 2015, DTE generated about 70% of its electricity at five coal-fired power plants, with the remainder produced by nuclear power, oil, natural gas, hydro and renewable energy including wind and solar. In 2015, DTE Energy increased its sale of electricity generated by renewable energy sources to 10%, compared to 7 percent in 2014.
- While DTE 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 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 in pounds, not percentages of power produced, releases will fluctuate from year to year as each plant produces more or less power.
- DTE Energy's Harbor Beach Power Plant was retired in 2013. The plant's final burn occurred in November 2013.

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

- DTE 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. We continue to invest in new technology, and have spent nearly \$2 billion to install equipment at the Monroe power plant to control emissions of sulfur dioxide, nitrogen oxide, mercury and hydrogen chloride. DTE invested about \$250 million in dry sorbent injection systems at Belle River, St. Clair, River Rouge and Trenton power plants to meet the 2016 mercury and acid gas limits.
- The Toxics Release Inventory includes a category of releases to land. It's important to note that for DTE, these land releases involve disposal of material into engineered and licensed landfills. By-products from coal combustion are not released uncontrolled to the environment.
- In avoiding land releases, DTE also actively recycles fly ash from several power plants for use as a concrete additive.

2015 Summary

DTE's 2015 emissions of chemicals reportable under the EPA's Toxics Release Inventory (TRI) were down over 54 % from 2014.

Overall, DTE's emission releases decreased 10.6% or 1.2 million pounds in 2015 compared to 2014, while the total amount of coal consumed by the plants decreased 9.9% year-over-year.

Air releases decreased 26% or 1.1 million pounds, due in part to decreased consumption of Eastern coal at St. Clair and River Rouge Power Plants and the continue reductions at Monroe Power Plant due to the flue gas desulfurization and selective catalytic reduction systems. Managed land releases decreased 2% or 100,000 pounds due to increased ash recycling. Water releases increased just a little over 5000 pounds, in part due to increased water usage and discharge from site basins to rivers or lakes.

2015 Total Plant Emissions

RY 2014 Power Plant	Total (pounds)	Air Emissions (pounds)	Land Disposal (pounds)	Water Discharges (pounds)
Belle River	1,569,115	265,431	1,295,708	7,975.9
Fermi II	3,323.37	1.99	3,321.38	0
Greenwood	0.000	0.000	0.00	0
Monroe	3,451,608	982,305	2,444,536	24,766.6
River Rouge	441,000	371,695	69,155	150.1
St. Clair	3,827,851	855,392	2,969,211	3,247.3
Trenton Channel	935,503	601,176	331,627	2,700.0
Total	10,228,401	3,076,001.4	7,113,559	38,840.0
System Total, Percentage Change over 2014	-10.6%	-26.3%	-1.7%	15.4%
System Total, Change over 2014 in Pounds	(1,216,221)	(1,096,450)	(124,965)	5,194
2014 Total	11,444,622	4,172,451.4	7,238,524	33,645.9

2015 Releases by Plant

Belle River Power Plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Arsenic Compounds	2,007	10	1,900	97
Barium Compounds	1,207,140	240	1,200,000	6,900
Chromium Compounds	5,870	30	5,700	140
Copper Compounds	15,122	66	15,000	56
Dioxin ¹	1.39000	1.39000	0	0
Hydrogen Chloride	180,000	180,000	NA	NA
Hydrogen Fluoride	47,000	47,000	NA	NA
Lead Compounds	2,228.27	16.66	2,192.20	19.41
Manganese Compounds	32,452	62	32,000	390
Mercury Compounds	406.65	400.18	0.00	6.47
Nickel Compounds	7,018	45	6,900	73
PACs ²	19.72	4.09	15.63	0.00
Sulfuric acid	37,000	37,000	NA	NA
Vanadium Compounds	20,041	37	20,000	4
Zinc Compounds	12,810	520	12,000	290
TOTAL TRI (except Dioxin)	1,569,114.6	265,430.9	1,295,707.8	7,975.9

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	3,323.37	1.99	3,321.38	NA

TOTAL TRI	3,323.37
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Greenwood Energy Center

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

TOTAL TRI (except Dioxin)	0	0	0	0
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Notes:

¹PACs (Polycyclic Aromatic Compounds) use was greater than TRI threshold, but was not released to the environment

Monroe Power Plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Ammonia	29,380	29,000	0	380
Arsenic Compounds	16,900	100	15,000	1,800
Barium Compounds	1,412,000	1,000	1,400,000	11,000
Benzo(g,h,i)perylene	0.56	0.38	0.18	0.00
Chromium Compounds	36,330	230	35,000	1100
Cobalt Compounds	18,122	64	18,000	58
Copper Compounds	61,660	290	61,000	370
Dioxin ¹	3.0647	3.06467	0	0
Hydrogen chloride	160,000	160,000	NA	NA
Hydrogen fluoride	25,000	25,000	NA	NA
Lead Compounds	21,884.85	136.84	21,696.90	51.11
Manganese Compounds	69,799	299	69,000	500
Mercury Compounds	548.54	105.93	415.10	27.51
Nickel Compounds	141,350	480	140,000	870
PACs ²	32.98	8.98	24.00	0.00
Selenium Compounds	14,900	2,300	9,400	3,200
Sulfuric acid	760,000	760,000	NA	NA
Vanadium Compounds	595,590	590	590,000	5,000
Zinc Compounds	88,110	2,700	85,000	410
TOTAL TRI (except Dioxin)	3,451,608	982,305.1	2,444,536	24,766.6

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	65,770	480	65,140	150
Benzene	36	36	0	0
Dioxin ¹	0.3052	0.3052	0	0
Hydrogen chloride	310,000	310,000	NA	NA
Hydrogen fluoride	31,000	31,000	NA	NA
Lead Compounds	327.41	34.56	292.72	0.13
Mercury Compounds	80.35	78.55	1.80	0.00
PACs ²	213.67	0.88	212.79	0.00
Sulfuric acid	30,000	30,000	NA	NA
Vanadium Compounds	3,573	65	3,508	0
TOTAL TRI (except Dioxin)	441,000	371,695	69,155	150.1

Notes:

¹ Dioxin Emissions are reported to the EPA in grams

² PACs = Polycyclic Aromatic Compounds

St. Clair Power Plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Arsenic Compounds	9,860	34	9,800	26
Barium Compounds	2,703,570	770	2,700,000	2,800
Chromium Compounds	18,188	68	18,000	120
Copper Compounds	41,149	97	41,000	52
Dioxin ¹	1.0996	1.0996	0	0
Hydrogen chloride	650,000	650,000	NA	NA
Hydrogen fluoride	53,000	53,000	NA	NA
Lead Compounds	9,377.02	37	9,327	13
Manganese Compounds	74,194	120	74,000	79
Mercury Compounds	354.09	283	71	0
Nickel Compounds	18,124	85	18,000	39
PACs ²	15.74	3.24	12.50	0
Sulfuric Acid	150,000	150,000	NA	NA
Vanadium Compounds	57,147	81	57,000	66
Zinc Compounds	42,872	820	42,000	52
TOTAL TRI (except Dioxin)	3,827,851	855,392	2,969,211	3,247.3

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	291,470	890	290,000	580
Benzo(g,h,i)perylene	1.34	0.07	1.27	0.00
Dioxin ¹	0.4805	0.4805	0	0
Hydrogen chloride	450,000	450,000	NA	NA
Hydrogen fluoride	39,000	39,000	NA	NA
Lead Compounds	2,528.25	55.41	2,472.84	0.00
Manganese Compounds	11,797	137	11,000	660
Mercury Compounds	147.21	112.03	35.17	0.01
PACs ²	119.62	1.44	118.18	0.00
Sulfuric acid	110,000	110,000	NA	NA
Vanadium Compounds	15,370	110	15,000	260
Zinc Compounds	15,070	870	13,000	1,200
TOTAL TRI (except Dioxin)	935,503	601,176	331,627	2,700

Notes:

¹ Dioxin Emissions are reported to the EPA in grams

² PACs = Polycyclic Aromatic Compounds