

## Greenhouse Gas (GHG) Emission and Energy Management

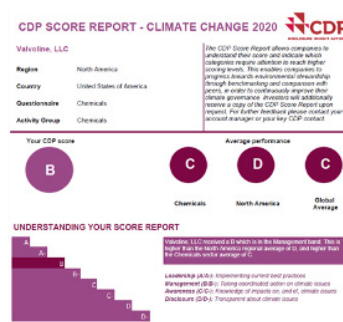
As a global company, Valvoline understands the significant impact we can have on our environment. Through sustainability initiatives, such as striving to reduce our carbon emissions and advancing the development of more environmentally friendly vehicles and engines, we operate in a manner that we believe will result in positive change for our climate and society as a whole.

Valvoline is committed to providing accurate and transparent data to our stakeholders and has subscribed to a third-party data management system – Schneider Electric’s EcoStruxure™ Resource Advisor, a cloud-based and AI-enabled enterprise software platform to track our carbon emissions. As an added measure of assurance, Apex Companies, LLC (Apex) a CDP partner was engaged in 2021 to conduct an independent verification of the greenhouse gas (GHG) emissions reported by Valvoline for fiscal 2020. APEX determined the GHG emission reported by Valvoline to be materially accurate.

### CDP Reporting

Valvoline publicly discloses information on its carbon footprint, energy consumption, and climate risk through the CDP Climate Change Survey and our Corporate Social Responsibility (CSR) Report. CDP is a non-profit organization that operates a global disclosure system for companies to manage their environmental impacts. By reporting through CDP, we have solidified our commitment to stakeholder transparency.

### CDP SCORE REPORT - CLIMATE CHANGE 2020



Valvoline, LLC received a B which is in the Management band. This is higher than the North America regional average of D, and higher than the Chemicals sector average of C.

In our second year of participating in the CDP Climate Change Survey, Valvoline received a “B” score which CDP identified as above average for the chemical sector. We attribute this score, in part, to Valvoline’s transparency, efficient operations, and our product research and development efforts. CDP category scores show Valvoline received high scores in business strategy and financial planning, governance, value chain engagement, risk, opportunity disclosures and emission reduction strategies. Valvoline is working to further improve our CDP scores by setting more aggressive decarbonization and sustainability targets, verification and initiating work on collection of supply chain scope 3 emissions. Learn more about our CDP reporting in our GHG Summary and on [cdp.net](https://www.cdp.net).

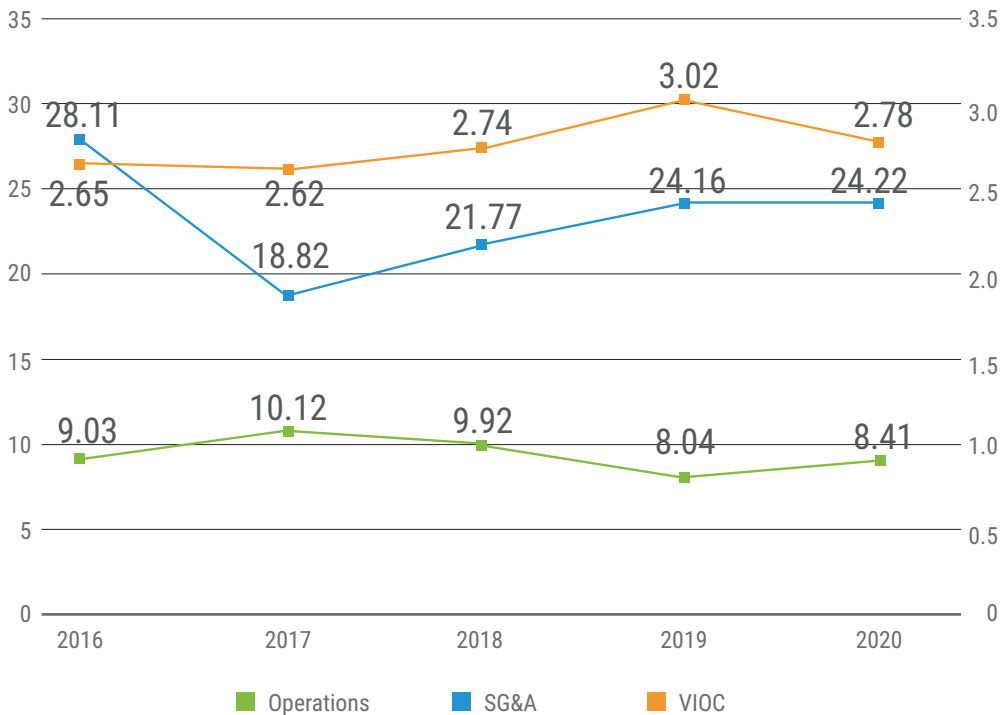
**Carbon Reduction Strategy and Performance**

Valvoline’s global corporate carbon reduction strategy focuses on avoiding carbon emissions, reducing emissions within our own operations, and then looking to mitigate the remaining emissions. Valvoline has implemented this by seeking out opportunities to reduce carbon emissions through operational efficiencies, product development, additive power purchase agreements (PPAs), and renewable energy credits (RECs). In 2020, we met our goal to reduce Valvoline’s operations carbon emissions by five percent over five years from a 2016 baseline.

One way we were able to meet our goal in fiscal year 2020, was by initiating our RECs program with the purchase of renewable energy credits as our electric purchase contract expired. In 2020, four percent of global Valvoline operation’s carbon emissions were addressed with the purchase of RECs. These purchases addressed load at our largest plant and our two largest distribution centers, all located in the U.S. Our short-term plan is to initiate a Scope 3 inventory, expand our REC purchases to our international and VIOC operations, target carbon reductions at sites identified with high carbon emitting electric sources, and execute a PPA. Based upon these efforts and strategies, Valvoline is well positioned to further reduce carbon emission.

We will continue to build on this progress and raise our ambition, developing longer term goals that we will communicate once those agreements are in place. Moving forward, we’re establishing 2020 as our new baseline and setting even more aggressive operational goals: our short-term Valvoline operations goal is a 10 percent reduction in carbon intensity by fiscal year 2022.

**Emissions Intensity**



**Emissions Intensity (Normalized) – Market Based**

		FY2016	FY2017	FY2018	FY2019	FY2020	% FY16	% YOY FY19
<b>Operations</b>	g CO2e/lbs product	9.03	10.12	9.92	8.04	8.41	-6.8%	4.7%
Scope 1	g CO2e/lbs product	3.34	3.53	3.84	3.32	2.96	-11.3%	-10.9%
Scope 2	g CO2e/lbs product	5.69	6.59	6.07	4.72	5.45	-4.2%	15.6%
<b>SG&amp;A</b>	kg CO2e/sq ft	28.11	18.82	21.77	24.16	24.22	-13.9%	0.2%
Scope 1	kg CO2e/sq ft	3.41	3.08	3.30	1.81	1.37	-59.7%	-24.1%
Scope 2	kg CO2e/sq ft	24.71	15.74	18.46	22.35	22.84	-7.5%	2.2%
<b>VIOC</b>	kg CO2e/car count	2.65	2.62	2.74	3.02	2.78	4.8%	-7.8%
Scope 1	kg CO2e/car count	0.87	0.77	1.04	1.29	1.18	35.5%	-9.1%
Scope 2	kg CO2e/car count	1.78	1.86	1.70	1.72	1.60	-10.1%	-6.9%

**Emissions Trending (Absolute) – Market Based**

Sum of CO2-e emissions (Primary) (mtons CO2-e)	Column Labels				
Row Labels	FY2016	FY2017	FY2018	FY2019	FY2020
<b>Operations</b>	15,231	18,169	18,901	17,753	18,520
Scope 1	5,627	6,338	7,323	7,334	6,514
Scope 2	9,604	11,831	11,579	10,419	12,006
<b>SG&amp;A</b>	8,471	5,678	6,160	7,164	7,261
Scope 1	1,027	930	935	536	411
Scope 2	7,445	4,748	5,225	6,627	6,849
<b>VIOC</b>	10,398	12,632	16,663	20,394	20,018
Scope 1	3,406	3,694	6,322	8,752	8,475
Scope 2	6,992	8,938	10,341	11,642	11,543
<b>Fleet</b>	4,704	4,856	5,442	5,655	5,510
Scope 1	4,704	4,856	5,442	5,655	5,510
<b>Grand Total</b>	38,804	41,335	47,166	50,965	51,308

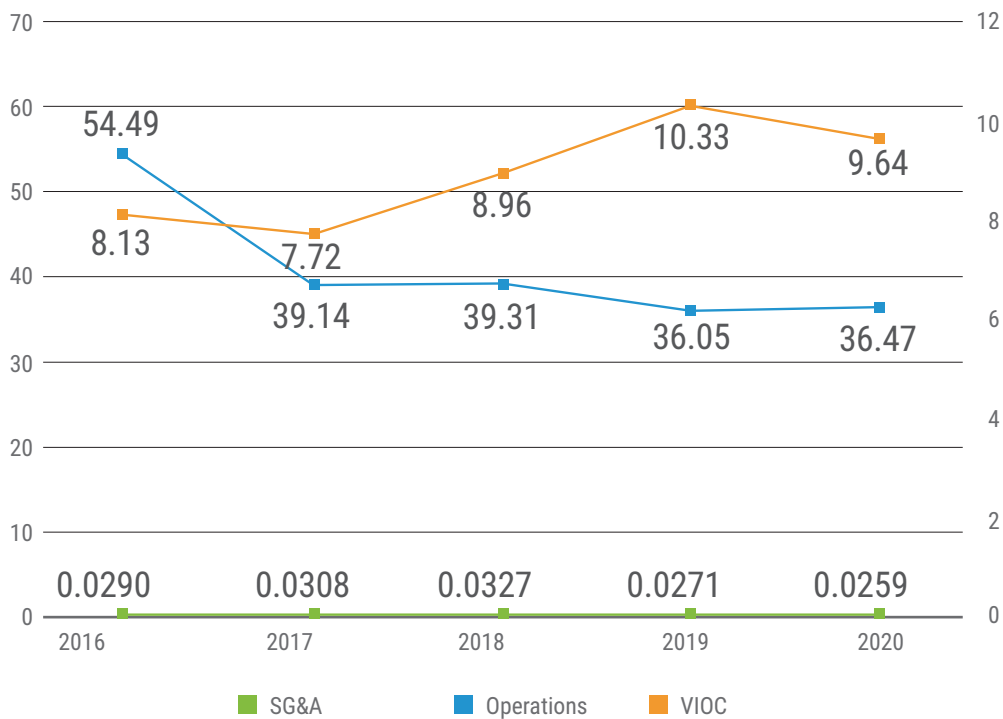
**RT-CH-110a.1. Gross Global Scope 1 Emissions**

Valvoline’s GHG Inventory is calculated in accordance with *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*, using AR5 GWP values. Below is a list of Scope 1 sources included in the inventory with their corresponding emission factors:

Source	Emission Factor
Diesel	US EPA MRR
Diesel—Mobile	US EPA MRR
Gasoline (Petrol)—Mobile	US EPA MRR
Heating Oil	Department for Environment Food and Rural Affairs (DEFRA)
Natural Gas	US EPA MRR
Propane	US EPA MRR

Valvoline GHG emissions are not covered under emissions-limiting regulations

**Energy Intensity**



**Energy Trending in MWh (Absolute)**

Sum of Volume Row Labels	Column Labels				
	FY2016	FY2017	FY2018	FY2019	FY2020
<b>Operations</b>	48,873	55,195	62,406	59,819	56,943
Scope 1	30,439	34,275	39,771	39,756	35,339
Scope 2	18,434	20,920	22,635	20,063	21,605
<b>SG&amp;A</b>	16,418	11,809	11,124	10,692	10,934
Scope 1	5,065	4,848	4,681	2,872	2,253
Scope 2	11,353	6,960	6,443	7,820	8,681
<b>VIOC</b>	31,875	37,148	54,539	69,798	69,423
Scope 1	18,795	20,380	34,882	48,281	46,744
Scope 2	13,080	16,768	19,657	21,517	22,679
<b>Fleet</b>	19,123	19,739	22,179	23,066	22,442
Scope 1	19,123	19,739	22,179	23,066	22,442
<b>TOTAL</b>	<b>116,290</b>	<b>123,891</b>	<b>150,248</b>	<b>163,375</b>	<b>159,742</b>

**SASB RT-CH-130a.1.**
**Total Energy Consumed Gigajoules (Absolute)**

	FY2016	FY2017	FY2018	FY2019	FY2020
<b>Operations</b>	175,943	198,703	224,663	215,348	204,996
Scope 1	109,581	123,389	143,177	143,121	127,220
Scope 2	66,361	75,313	81,485	72,227	77,776
<b>SG&amp;A</b>	59,106	42,511	40,045	38,491	39,362
Scope 1	18,235	17,454	16,851	10,340	8,109
Scope 2	40,871	25,057	23,194	28,152	31,253
<b>VIOC</b>	114,751	133,733	196,339	251,273	249,922
Scope 1	67,662	73,369	125,574	173,813	168,279
Scope 2	47,089	60,364	70,765	77,460	81,644
<b>Feet Fuel</b>	68,843	71,060	79,845	83,038	80,792
Scope 1	68,843	71,060	79,845	83,038	80,792
-	-	-	-	-	-
-	-	-	-	-	-
<b>TOTAL</b>	<b>418,642</b>	<b>446,006</b>	<b>540,891</b>	<b>588,151</b>	<b>575,073</b>

Percentage of energy it consumed that was supplied from grid electricity \*39%

Percentage of energy it consumed that is renewable energy \*1%

Total self-generated energy (Solar) \*0.02%

\*\*\* Valvoline global includes services, global operations and JVs 50% or greater ownership excluding transportation

As shown above, our Valvoline Scope 1 & 2 carbon footprint is small in comparison to other companies that we are commonly benchmarked against in the chemical sector. Therefore, our greatest opportunity to reduce carbon emissions lies within our Scope 3 emissions and the use of our sold products.

For the past 150 years, Valvoline has delivered products and services that improve the sustainability of engines, and that commitment to sustainability has resulted in environmental benefits that extend beyond our company's operations. As we develop and manufacture innovative, low-viscosity lubricants and EV coolants that improve gas mileage and reduce vehicle emissions for our customers, we are able to produce a much broader, positive impact on the environment. Our increasing sales of EV coolants and lower viscosity lubricants supported customer annual average greenhouse gas emission reductions of 1.2 million-metric tons since 2016. Valvoline is also supporting environmentally friendly consumer alternatives such as hybrid and electric vehicles (EV). Valvoline has a dedicated EV lab and our product development lab, we launched our full line of new EV Performance Fluids that help optimize battery performance. We're proudly working in collaboration with our OEM partners to continue the progress of bringing tomorrow's "green" cars to the mainstream

## Air Emissions\Toxic Emissions

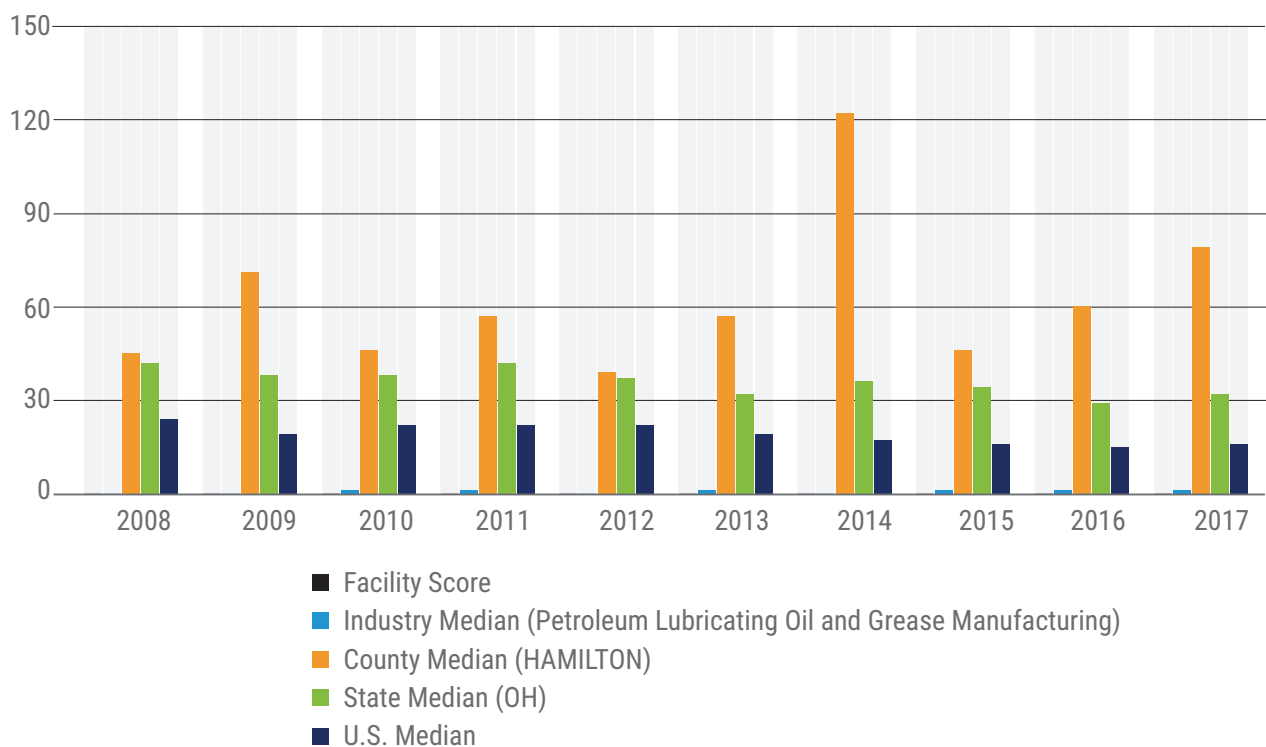
Valvoline sites scored a "zero" from the US EPA's facility Risk-Screening Environmental Indicators (RESI)— indicating the lowest of risks for the releases of toxic substances from industrial facilities. RESI is a screening-level model that analyzes factors that contribute to human health risk, including the amount of chemicals released, the degree of toxicity, and the size of the exposed population. The RESI model calculates scores to highlight releases that would potentially pose greater risk over a lifetime of exposure. Below is the EPA's graphical comparison of Valvoline's largest plant in Cincinnati, Ohio, TRI ID: [45204VLVLN3901R](#) to RESI scores for the petroleum industry, Hamilton County, the state of Ohio, and US median site scores.

Valvoline RESI risk is low due to the nature of the raw materials blended and packed at our plants. Our facilities' raw materials are a combination of base oils and additives with very low volatility and toxicity that annually generate less than one metric ton of Volatile Organic Compound (VOC) emissions at our largest plants. The only compound that meets the reporting threshold is zinc, a Valvoline anti-corrosion inhibitor a common material present in vitamins and galvanized pipe. Our global annual zinc air emissions are estimated at less than 100 lbs.

SASB RT-CH-120a.1. Air emissions of the following pollutants: (1) NOX (excluding N2O), (2) SOX, (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs) Estimated Air Emissions in metric tons.

Nitrogen Oxide Emission (NOX)	0.58
Sulfur Oxides (SOX)	0.001
Volatile Organic Compounds (VOC)	14.5
Hazardous Air Pollutants (HAPs)	0.19

## RSEI Score Comparison

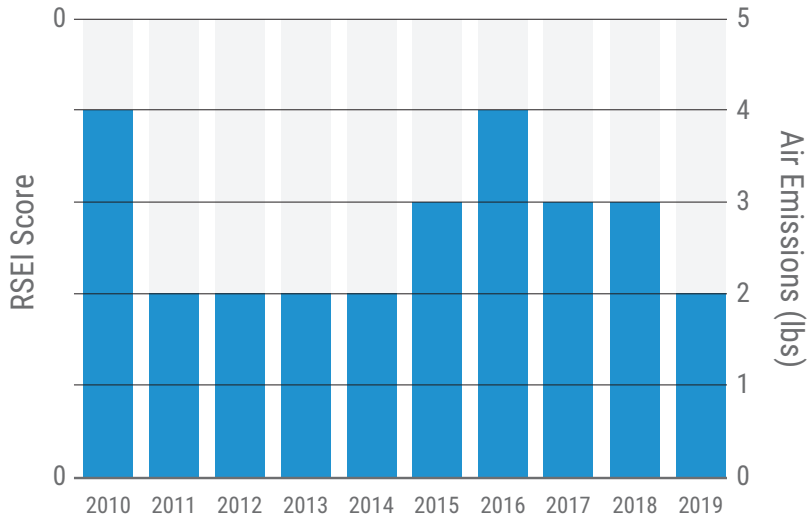


Year	Facility Score	Industry Median (Petroleum Lubricating Oil and Grease Manufacturing)	County Median (Hamilton)	State Median (OH)	U.S. Median
2008	0	1	45	42	24
2009	0	1	71	38	19
2010	0	1	46	38	22
2011	0	1	57	42	22
2012	0	1	39	37	22
2013	0	1	57	32	19
2014	0	1	122	36	17
2015	0	1	46	34	16
2016	0	1	60	29	15
2017	0	1	79	32	16

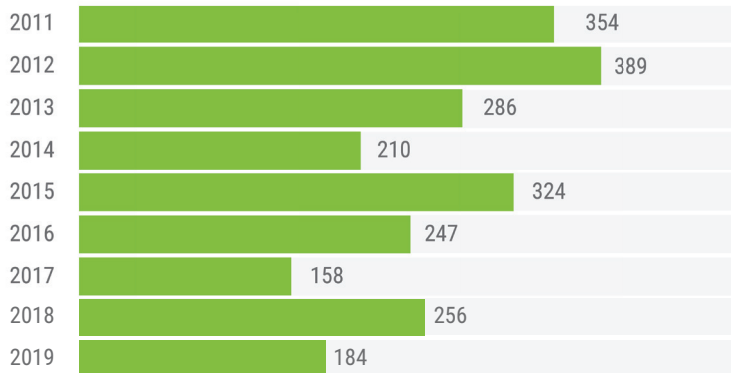
# ENVIRONMENT

Facility RSEI score is 0 for 2018 and 2019.

## Valvoline Cincinnati Ohio 45204VLVLN3901R



## TRI Zinc Emissions (in pounds)



## Toxic Release Reporting

