

	2022 [t CO ₂ e]	2021 [t CO ₂ e]	2020 [t CO ₂ e]	2019 [t CO ₂ e]
Scope 1	21,095,387	20,138,340	19,772,655	20,427,213
Direct emissions	19,919,345	19,333,367	19,191,794	19,818,825
Fugitive emissions	378,427	360,692	347,885	375,307
Fuels	794,920	437,073	228,307	217,638
Refrigerants	2,695	7,209	4,350	15,183
Technical gases	0	0	319	260
Scope 2 (Market-Based)	1,560,250	1,430,330	1,826,183	2,199,544
Scope 2 (Location-Based)	1,594,005	1,361,065	1,607,292	1,941,424
Scope 3	107,508,801	84,978,372*	84,620,151*	95,665,374*
Category 1. Purchased goods and services	12,703,442	12,488,396	12,799,177	13,299,563
Category 3. Fuel- and energy-related emissions not included in scope 1 or scope 2	3,937,105	1,909,108	3,321,791	5 898,604
Category 4. Upstream transportation and distribution	1,251,400	545,653	545,561	562,449
Category 5. Waste generated in operation	9,194	4,270	10,361	13,256
Category 6. Business travel	1,169	1,931	1,931	1,828
Category 9. Downstream transportation and distribution	275,797	246,062	246,062	277,079
Category 10. Processing of sold products	1,583,396	1,310,220	1,640,739	1,621,718
Category 11. Use of sold products	87,747,300	68,472,731	66,054,529	73,990,875
Biogenic emissions	211,115	241,395	147,358	228,678

* Recalculations were made on the basis of available data. Before the consolidation, Rafineria Gdańska, as the legal successor of LOTOS Asphalt and Rafineria Gdańska, was unable to provide all Scope 3 data for 2019-2021. The calculations were carried out in Scope 1, 2 and 3.

Description	UoM	2022	2021	2020	2019	2018	GRI indicator
EMISSIONS							
Emissions at the ORLEN Group, including:	Mg	20,294,678	17,704,204	17,073,431	15,971,785	15,061,640	
Sulfur dioxide	Mg	18,532	17,615	20,013	17,250	18,290	
NOx	Mg	12,021	11,096	12,609	9,824	10,664	
Carbon monoxide	Mg	8,289	6,880	8,310	5,400	4,559	11.3.2
Particulate matter	Mg	1,276	1,017	1,019	888	1,088	
Carbon dioxide (including EU ETS)	Mg	20,230,972	17,652,018	17,010,022	15,919,204	15,010,150	
Other substances	Mg	23,588	15,578	21,457	19,218	16,889	

Description	UoM	2022	2021	2020	2019	2018	GRI Indicator
CO₂ emissions within the EU ETS:	Mg	19,279,053	17,609,161	16,863,935	15,895,512	14,978,720	
ORLEN	Mg	7,545,082	8,007,450	8,712,407	8,792,971	7,789,688	
ORLEN Asphalt	Mg	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	
ANWIL	Mg	838,440	996,759	1,013,303	978,882	1,000,819	
Basell Orlen Polyolefins	Mg	42,163	42,163	40,873	41,308	46,283	
ORLEN Południe	Mg	127,366	128,825	113,347	121,993	124,713	
Rafineria Nafty Jedlicze	Mg	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	111.5
RafineriaTrzebinia	Mg	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	0 (reported as part of ORLEN Południe)	
ORLEN Lietuva	Mg	1,668,831	1,501,524	1,478,463	1,599,384	1,680,865	
ORLEN UNIPETROL	Mg	4,152,029	4,243,526	3,638,933	4,162,201	4,089,807	
		0	0	0	0	0	
Česká rafinérská	Mg	(reported as part of ORLEN UNIPETROL)	(reported as part of ORLEN UNIPETROL)	(reported as part of ORLEN UNIPETROL)	(reported as part of ORLEN UNIPETROL)	(reported as part of ORLEN UNIPETROL)	
PARAMO	Mg	26,983	40,241	40,087	39,899	42,927	
SPOLANA	Mg	71,238	82,110	78,700	158,874	203,618	
PGNIG		984,961	-	-	-	-	
LOTOS		866,271	-	-	-	-	
Energa	Mg	2,955,689	2,566,563	1,747,822	-	-	

Description	UoM	2022	2021	2020	2019	2018
OZONE-DEPLETING SUBSTANCES (ODS)						
ODS emissions at the ORLEN Group	Mg	38.35 / 7.54**	35.91 / 5.91**	36.57 / 5.64**	40.92/ 5.44**	39

* Reported in the total for other substances.

** CFC11 equivalent.