

GLOBAL PERFORMANCE DATA

GRI Standards		Unit	2019	2020	2021	2022
Production**						
General	Total production (captive consumption)	Ton of production	12,780,005	15,547,062	16,521,350	16,748,664
	PET	Ton	5,167,714	5,359,788	5,469,996	5,457,361
	PTA	Ton	4,191,627	4,243,812	4,566,010	4,124,856
	Packaging	Ton	226,184	223,716	241,602	304,964
	Fibers	Ton	1,850,305	1,723,674	1,997,837	1,765,967
	Feedstock (e.g. IPA/PX/NDC/PNDA)	Ton	880,183	793,167	831,811	740,533
	Wool	Ton	6,622	4,602	6,168	7,140
	Recycling plants production (flakes+in process reuse)	Ton	149,734	180,739	217,414	344,543
	Olefins	Ton	307,634	3,017,564	3,190,512	4,003,300
Revenue						
General	Total revenues (including inter-company sales)	USD (million)	14,089	13,769	17,533	23,864
Materials**						
301-1	Total material used	Ton	13,058,126	15,019,567	15,973,039	17,252,346
	Non-renewable raw materials					
	- PTA	Ton	5,195,207	5,260,904	5,567,369	5,450,517
	- MEG	Ton	2,034,280	2,071,956	2,184,696	2,115,053
	- Paraxylene	Ton	2,751,180	2,785,304	2,996,541	2,720,688
	- IOD raw materials	Ton	-	1,532,558	1,783,223	3,903,983
	- Acetic Acid	Ton	168,183	154,037	163,937	159,336
	- Purified isophthalic acid	Ton	88,511	96,462	93,539	97,875
	- PET	Ton	405,181	398,514	426,209	380,635
	- PP	Ton	274,540	274,328	270,314	221,539
	- PE	Ton	55,494	56,757	58,436	48,350
	- HDPE	Ton	9,140	8,211	10,639	19,751
	- Others	Ton	1,785,341	2,120,334	2,061,244	1,477,343
	Bio-based raw materials					
	- Palm kernel oil and PKO fatty alcohols	Ton	-	-	-	94,473
	- Bio-MEG	Ton	9,130	10,031	9,615	9,875
	- Cellulose	Ton	10,079	7,212	10,298	7,745
	- PLA	Ton	2,023	3,641	4,065	4,233
	- Wool	Ton	5,096	3,400	4,855	4,232
	- Others	Ton	-	-	-	30,542
	Total packaging materials	Ton	57,745	5,006	10,993	105,103
301-2	Total recycled materials	Ton	206,996	230,912	317,064	342,961
Energy**						
302-1	Total energy consumption	GJ	74,978,310	111,045,549	115,583,712	122,147,400
	Total energy consumption	MWh	20,827,308	30,845,986	32,106,587	33,929,833
	• Natural gas	GJ	31,772,798	70,444,220	72,030,245	79,098,642
	• Coal	GJ	23,190,958	20,796,788	20,816,598	17,477,273
	• Fuel oil	GJ	308,901	431,744	1,895,027	653,786
	• Diesel	GJ	186,567	252,356	190,526	435,183
	• LPG	GJ	69,094	57,672	98,096	98,078
	• Gasoline	GJ	28,887	41,100	35,004	41,810
	• Fuel gas	GJ	-	-	-	-
	• Tail gas	GJ	-	-	-	466,210
	• Others	GJ	494,307	513,760	476,118	465,377
	• Renewable energy consumption	GJ	714,349	798,257	485,511	579,224
	- Palm shell	GJ	322,781	317,212	416,226	425,094
	- Biomass	GJ	391,568	481,045	69,285	150,961
	- Bio LPG	GJ	-	-	-	3,141
	- Bio ethanol	GJ	-	-	-	28
	• Direct energy sold	GJ	(2,566,138)	(3,228,551)	(3,411,550)	(2,915,134)
	Total Indirect energy consumption (electricity, cooling, steam purchased from outside of IVL group)	GJ	20,778,587	20,938,204	22,968,136	25,746,952
	- Renewable electricity generated and consumed	GJ	11,964	23,326	24,933	37,269
	- Renewable electricity purchased through certificate	GJ	1,490,193	668,105	1,883,403	716,325
	Total direct electricity sold	GJ	387,862	397,319	354,050	659,971
	Total steam sold	GJ	136,103	133,695	519,650	586,479
	Total indirect electricity sold	GJ	59,547	64,105	16,449	16,127
302-3	Energy intensity	GJ/Ton of production	5.87	7.14	7.00	7.29
302-4	Energy saved due to conservation and efficiency improvement	GJ	756,216	435,645	1,575,159	413,476
	Total non-renewable energy consumption	MWh	20,212,746	30,433,476	31,442,891	33,559,695
	Total renewable energy consumption	MWh	614,561	412,509	663,696	370,138

GRI Standards		Unit	2019	2020	2021	2022
Water Withdrawal and Consumption**						
303-1	Total water withdrawn by sources	m ³	65,222,820	82,050,413	88,154,618	86,910,036
	- Surface water	m ³	35,480,047	50,870,402	61,522,902	48,332,122
	- Once through cooling water	m ³	263,010	-	-	-
	- Municipal water and water utilities	m ³	21,826,915	19,066,383	19,172,711	26,855,329
	- Groundwater	m ³	7,630,654	12,113,628	7,459,005	11,722,585
	- Rainwater	m ³	22,194	-	-	-
	Water intensity	m ³ /Ton of production	5.10	5.28	5.34	5.19
Reused / Recycled Water						
303-3	Total volume of recycled/reused water	m ³	5,255,856	5,786,158	5,555,472	6,739,271
	% of recycled/reused water	%	7.46%	6.59%	5.93%	7.20%
Emissions**						
305-1	Direct GHG emissions of all sources owned or controlled by company (Scope 1 emissions)	tCO ₂ e	4,705,964	6,974,574	7,207,125	7,195,277
305-2	Indirect GHG emissions resulting from the generation of electricity, heat, or steam (Scope 2 emissions)	tCO ₂ e	2,513,223	2,487,233	2,582,952	2,606,124
	Total GHG emissions (Scope 1 + Scope 2)	tCO ₂ e	7,219,187	9,461,807	9,790,077	9,801,401
305-4	Scope 1 GHG intensity	tCO ₂ e/Ton of production	0.368	0.4486	0.436	0.430
	Scope 2 GHG intensity	tCO ₂ e/Ton of production	0.198	0.161	0.156	0.157
	Scope 1 + Scope 2 GHG intensity	tCO ₂ e/Ton of production	0.565	0.609	0.593	0.585
	GHG intensity in tons of CO ₂ e per currency total revenue	tCO ₂ e/USD (million)	512.40	687.18	558.38	410.72
	GHG Intensity in tons of CO ₂ e per full time equivalent (FTE) employees	tCO ₂ e/FTE	318.08	375.36	380.05	324.54
305-7	Total NO _x emissions	Ton	4,659	4,937	12,433	7,536
	Total SO _x emissions	Ton	4,993	4,658	6,999	5,730
	Total VOC emissions	Ton	2,123	3,298	2,364	4,287
	Total PM emissions	Ton	1,136	872	915	1,137
Wastewater Discharge**						
306-1	Total water discharge volume	m ³	28,812,422	48,752,910	49,520,229	46,907,077
	COD in treated wastewater discharged	Ton	1,693	17,654	24,765	8,272
	BOD in treated wastewater discharged	Ton	328	1,693	2,735	3,005
	TSS in treated wastewater discharged	Ton	532	1,900	1,860	651
	Oil and grease in treated wastewater discharged	Ton	20.45	170	243	995
Solid Waste**						
306-2	Total hazardous waste	Ton	74,344	117,157	140,010	156,012
	- Reuse	Ton	43,574	39,840	47,897	0
	- Recycling	Ton	4,796	2,511	2,931	53,083
	- Incineration (with energy recovery)	Ton	2,542	52,439	71,709	84,128
	- Incineration (without energy recovery)	Ton	9,996	12,900	7,435	6,872
	- Composting	Ton	0	77	0	0
	- Landfill	Ton	12,260	6,416	6,557	5,441
	- Unknown disposal methods	Ton	1,175	2,973	3,482	6,489
	Total non-hazardous waste	Ton	243,104	216,601	287,069	307,901
	- Reuse	Ton	120,151	65,318	82,289	1,560
	- Recycling	Ton	43,423	50,505	92,227	62,986
	- Incineration (with energy recovery)	Ton	12,835	10,245	6,341	10,945
	- Incineration (without energy recovery)	Ton	1,080	2,425	1,135	583
	- Composting	Ton	11,235	12,829	0	0
	- Landfill	Ton	49,596	53,603	61,155	96,403
	- Deepwell injection	Ton	0	53	0	0
	- Unknown disposal methods	Ton	4,784	21,624	43,921	135,424
	Total waste reused, recycled and incinerated with energy recovery	Ton	227,321	220,857	303,394	212,702
	Total waste disposed (not reused, recycled) and incinerated without energy recovery	Ton	90,126	112,901	123,685	251,212

WATER WITHDRAWAL BY SOURCE

GRI Standards		Unit	2020	2021	2022
Total Water Withdrawal by Source**					
303-3	Total water withdrawal by source (with + without stress)	m ³	82,050,413	88,154,618	86,910,036
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	78,234,318	84,704,174	85,376,163
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	3,816,095	3,450,444	1,533,873
	Surface water/rain water (with + without water stress)	m ³	50,870,402	61,522,902	48,332,122
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	47,343,325	58,361,273	48,239,270
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	3,527,077	3,161,629	92,852
	Ground water (with + without water Stress)	m ³	12,113,628	7,459,005	11,722,585
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	12,112,289	7,458,027	11,293,294
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	1,339	979	429,290
	Seawater (total) (with + without water stress)	m ³	0	0	0
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	0	0	0
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	0	0	0
	Produced water (total) (with + without water stress)	m ³	684,830	193,615	129,085
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	627,250	64,141	490
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	57,580	129,474	128,595
	Third-party water (with + without water stress)	m ³	18,381,553	18,979,096	26,726,244
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	18,151,454	18,820,734	25,843,108
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	230,100	158,362	883,135
	Total water withdrawal by source (with water stress)	m³	34,675,873	39,501,965	37,566,089
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	34,467,798	39,224,933	37,294,453
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	208,075	277,032	271,636
	Surface water/rain water (with water stress)	m ³	19,514,459	23,446,101	25,372,029
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	19,514,459	23,446,101	25,372,029
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	0	0	0
	Ground water (with water stress)	m ³	3,747,740	3,961,213	3,600,532
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	3,747,740	3,961,213	3,600,532
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	0	0	0
	Seawater (total) (with water stress)	m ³	0	0	0
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	0	0	0
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	0	0	0
	Produced water (total) (with water stress)	m ³	81,039	153,254	106,889
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	34,370	34,585	0
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	46,669	118,669	106,889
	Third-party water (with water stress)	m ³	11,332,636	11,941,396	8,486,639
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	11,171,229	11,783,034	8,321,892
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	161,407	158,362	164,747
	Total water withdrawal by source (without water stress)	m³	47,374,540	48,652,654	49,343,947
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	43,766,520	45,479,242	48,081,710
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	3,608,020	3,173,412	1,262,237
	Surface water (without water stress)	m ³	31,355,943	38,076,801	22,960,093
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	27,828,867	34,915,172	22,867,241
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	3,527,077	3,161,629	92,852
	Ground water (without water stress)	m ³	8,365,888	3,497,792	8,122,053
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	8,364,549	3,496,813	7,692,762
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	1,339	979	429,290
	Seawater (total) (without water stress)	m ³	0	0	0
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	0	0	0
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	0	0	0
	Produced water (total) (without water stress)	m ³	603,791	40,361	22,196
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	592,880	29,556	490
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	10,911	10,805	21,706
	Third-party water (without water stress)	m ³	7,048,918	7,037,700	18,239,605
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	6,980,224	7,037,700	17,521,216
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	68,693	0	718,388

** Table shows restatement of data from 2019 to 2021 due to recalculation.

WASTE WATER DISCHARGE

GRI Standards		Unit	2020	2021	2022
Waste Water Discharge**					
303-4	Total waste water discharge (with + without stress) (source wise)	m ³	48,753,355	49,662,741	46,929,160
	Total surface water	m ³	26,649,830	26,147,436	24,588,255
	Total ground water	m ³	65,486	92,209	416,408
	Total sea water	m ³	3,220,926	3,132,273	2,034,927
	Total third-party water/municipality/common waste water treatment plant	m ³	18,722,602	20,184,823	16,933,087
	Total third-party water sent for used for other organization	m ³	94,511	106,001	2,956,483
	Waste water discharge (with water stress)	m ³	25,906,869	25,674,905	22,681,126
	Surface water	m ³	14,429,383	14,164,176	14,089,106
	Ground water	m ³	47,719	52,544	287,723
	Sea water	m ³	1,663,141	1,771,417	1,460,691
	Third-party water/municipality/common waste water treatment plant	m ³	9,763,971	9,676,833	6,711,487
	Third-party water sent for used for other organization	m ³	2,654	9,935	132,120
	Waste water discharge (without water stress)	m ³	22,846,486	23,987,836	24,248,033
	Surface water	m ³	12,220,446	11,983,260	10,499,149
	Ground water	m ³	17,767	39,665	128,685
	Sea water	m ³	1,557,785	1,360,856	574,236
	Third-party water/municipality/common waste water treatment plant	m ³	8,958,631	10,507,990	10,221,600
	Third-party water sent for used for other organization	m ³	91,857	96,066	2,824,363
	Total waste water discharge quality wise by fresh water and other water (with + without stress)	m ³	48,753,355	49,662,741	46,929,160
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	39,684,310	40,515,778	38,763,132
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	9,069,045	9,146,963	8,166,028
	Waste water discharge with water stress	m ³	25,906,869	25,674,905	22,681,126
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	24,871,405	25,416,890	19,280,294
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	1,035,463	258,015	3,400,833
	Waste water discharge without water stress	m ³	22,846,487	23,987,836	24,248,033
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m ³	15,350,542	15,724,020	19,482,838
	Other water (>1,000 mg/L Total Dissolved Solids)	m ³	7,495,944	8,263,816	4,765,195
Total water returned to the same source at a similar or better level of quality (with + without water stress)		m ³	4,350,993	3,607,591	891,850

** Table shows restatement of data from 2019 to 2021 due to recalculation.