

Greenhouse gas emissions

The key source of environmental impacts caused by our operations are gas emissions into the atmosphere. Therefore, we strive to employ the best available techniques and practices to minimise the environmental impacts of our processes involving air emissions.

103-1, 103-2, 103-3

Direct greenhouse gas emissions from the LOTOS Group's industrial units (including those not covered by the emissions trading scheme) are determined based on the methodology set out in Commission Implementing Regulation (UE) 2018/2066. The amount of fuel combusted or source stream processed is multiplied by relevant factors (net calorific value, emission factor or oxidation factor), resulting in total greenhouse gas emissions.

Indirect emissions are determined based on the amount of electricity and heat purchased outside the Group, multiplied by relevant emission factors published periodically by the National Centre for Emissions Balancing and Management (KOBiZE).

305-1, 305-5

TCFD:

Metrics and Targets Disclosure B

Direct GHG emissions at the LOTOS Group (Scope 1)

Source of emissions	Mg CO ₂ e		
	2017	2018	2019
Emissions associated with electricity generation	64,780	27,738	78,314
Emissions associated with heat generation	1,173,839	1,319,241	1,336,365
Emissions from cooling and steam generation systems	0	0	0.0
Emissions from physical and chemical processing	585,486	609,878	613,291
Hydrofluorocarbons (HFC) emissions	0	0	0.3
Emissions related to transport of materials, products and waste	0	0	0.0
Total direct greenhouse gas emissions	1,824,105	1,956,857	2,027,970

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Main processes responsible for direct GHG emissions at the LOTOS Group

Mg CO₂e

Process	2017	2018	2019
Heat and electricity generation	337,748	355,265	351,531
Refining	1,481,571	1,631,027	1,639,214
Gas flaring at rigs	50,540	45,550	52,098
Total direct greenhouse gas emissions	1,869,859	2,031,843	2,042,844

* For Grupa LOTOS, Energobaltic, LOTOS Asphalt, RCEkoenergia, LOTOS Petrobaltic.

305-2

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Indirect GHG emissions at the LOTOS Group (Scope 2)

Source of emissions	2017	2018	2019
Electricity purchased outside the Group [MWh]	672,320	704,780	716,127
Thermal energy purchased outside the Group [GJ]	9,446	6,248	5,225
Emissions from electricity purchased for the organisation's needs [Mg CO ₂ e]	541,945	547,681	553,566
Emissions from steam and cooling energy purchased for the organisation's needs [Mg CO ₂ e]	1,087	719	601
Total indirect greenhouse gas emissions	543,032	548,401	554,167

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Indirect GHG emissions at Grupa LOTOS (Scope 2)

Source of emissions	2017	2018	2019
Electricity purchased outside the Company [MWh]	501,513	540,740	549,689
Thermal energy purchased outside the Company [GJ]	0	0	0
Emissions from electricity purchased for the organisation's needs [Mg CO ₂ e]	404,261	420,696	424,910
Emissions from steam and cooling energy purchased for the organisation's needs [Mg CO ₂ e]	0	0	0
Total indirect greenhouse gas emissions	404,261	420,696	424,910

Emission intensity

Grupa LOTOS		2018	2019
Greenhouse gas emissions (Scopes 1+2) per tonne of crude oil processed	Mg CO ₂ e/Mg	0.214	0.205
Greenhouse gas emissions (Scopes 1+2) according to CWT methodology	kg CO ₂ e /CWT	26.8	26.8