

Emissions

Grupa LOTOS does not use or emit substances which deplete the ozone layer.

Higher carbon dioxide emissions recorded in 2010–2011 were caused by the gradual commissioning of new units, built for the Gdańsk refinery as part of the strategic 10+ Programme. Its purpose was to expand the annual oil throughput capacity from 6m tonnes to 10.5m tonnes, while increasing the depth of conversion. Comparative data on feedstock use by the Gdańsk refinery is presented in the table below. For calculating emissions, the CO₂ reference emission factor for energy production (provided by the National Centre for Emissions Management (Krajowy Ośrodek Bilansowania i Zarządzania Emisjami - KOBIZE) has been applied.

Total direct and indirect greenhouse gas emissions of Grupa LOTOS by weight

Direct emissions [thousand tonnes per year]			
	2009	2010	2011
CO ₂	1,121	1,607	2,045
Indirect emissions* [thousand tonnes per year]			
	2009	2010	2011
CO ₂	225	285	365

* Indirect emissions are attributable to energy purchased by Grupa LOTOS.

NO_x, SO_x and other significant air emissions of Grupa LOTOS by type and weight

Emissions [tonnes per year]			
	2009	2010	2011
SO ₂ emissions	4,170	4,758	5,708
permitted level of SO ₂	6,470	6,470	7,137
NO ₂ emissions	1,132	1,315	1,620
permitted level of NO ₂	2,405	2,475	2,650
Dust emissions	220	260	344
permitted level of dust	521	538	556

Feedstock and other materials used by Grupa LOTOS

Crude oil processing [tonnes]			
Item	2009	2010	2011
Total crude oil	5,461,540	8,095,655	9,163,836
Feedstock and components	1,699,034	844,327	1,062,156
Additives	2,229	2,010	2,254

In 2012-2013, the following projects will be executed to mitigate the environmental impact of individual industrial processes and the refinery as a whole:

- recovery and reuse of flare gas,
- use of natural gas for hydrogen production,
- introduction of natural gas to the energy mix of Grupa LOTOS,
- replacement of process furnaces in the light distillate hydrorefining units and furfural extraction units.

The Company will present their first measurable effects in 2012.