

Materials

GRI AREA

No.

EN 1 Used raw materials/materials by weight and volume

Oil processing [tonnes]	Specifica 2005	2006	2007	2008	2009
tion					
Total oil	4,836,900	6,098,600	6,156,431	6,203,414	5,461,540
Raw materials and components			1,088,605	1,146,989	1,699,034
Improvers			2,052	1,825	2,229

GRI AREA

No.

EN 2 Percentage of materials stemming from recycling used in the production process

Due to the nature of Grupa LOTOS operations, it may use recycled products only to a limited extent. Each of the LOTOS Group companies involved in production activity is subject to the statutory obligation of disposing of the used material for recycling via external Recycling Organizations. However, the potential of reuse of the recycled products is also very limited in this case.

Energy

GRI AREA

No.

EN 3 Direct energy consumption by original energy sources

Specification	u.o.m.	Direct, purchased sources of energy	Direct, produced sources of energy	Direct, sold sources of energy	Direct, total consumption of energy
Natural gas	GJ	801,742			801,742
Fuel gas	GJ		6,092,455		6,092,455
Fuel oil HSFO	GJ		2,553,180		2,553,180
Fuel oil LSFO	GJ	3,694,288			3,694,288
Electricity	GJ			6,912	-6,912
Thermal energy	GJ			25,442	-25,442
Total	GJ	4,496,030	8,645,635	32,354	13,109,311

GRI AREA

No.

EN 4 Indirect energy consumption by original sources of energy

Specification	Unit of measure	Average-advanced purchased energy
Electricity	GJ	963,277

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No.

EN 5 Volume of energy saved through maintenance/overhauls of infrastructure and the improved energy efficiency of tools used before

In 2009, an IT system of energy consumption visualization and optimization – Visual Mesa by Soteica – was launched at the refinery in Gdańsk. The programme provides non-stop monitoring of the power infrastructure of the refinery – the systems of gas and fuel oil as well as process steam – and suggest changes to the power system based on optimization algorithms, which result in the reduced costs of operations.

It is difficult to estimate the impact of the programme for optimising the energy system of the refinery on the savings in energy consumption, because 2009 was the year of continuous changes in the power system – new production systems were started together with new elements of the power media and auxiliary system. It is not possible to estimate the energy consumption had the system not been introduced. According to estimates before the launch, the optimization reduces energy consumption by 2-3%, which for 2009 would mean the reduction of energy consumption by almost 300,000 GJ, i.e. burning about 6,800 tonnes of fuel oil less.

GRI AREA

No.

EN 6 Initiatives undertaken to provide products and services that are energy efficient and based on renewable energy and reductions of power requirements due to such measures

Fuel products produced by Grupa LOTOS are composed according to the requirements of the [National Index Target](#) concerning the share of renewable raw materials in road fuels. Both gasoline and diesel oil contain biocomponents produced with renewable sources. A scientific discussion continues about the impact of biocomponent application on the reduction of emission, therefore Grupa LOTOS will introduce the Life Cycle Assessment ([LCA](#)) analysis, which tests energy consumption during the whole production chain.

Water

GRI AREA

No.

EN 8 Total water consumption by sources

[m ³]	2005	2006	2007	2008	2009
undergro	136,065	168,110	144,907	179,735	209,147
und					
surface	2,252,81	2,559,16	2,598,15	2,520.,6	3,557,09
	1	5	8	03	3
Total	2,388,87	2,727,27	2,743,06	2,700,33	3,766,24
	6	5	5	8	0

NR AREA

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EN 9 Water sources depleted due to excessive consumption

Grupa LOTOS does not affect significantly any sources of surface water, i.e. it does not exceed the value of so-called unalterable flow in the Motława River (0.56 m³/s). The average water consumption is below 5% of the average flow in the river.

GRI AREA

No.

EN 10 Percentage and total volume of treated and recycled water

[m ³]	2005	2006	2007	2008	2009
Producti	989,710	801,575	891,708	845,397	870,230

on of
process
water
from
treated
sewage

Biodiversity

GRI AREA

No.

EN 11 The location and area of owned, leased or rented land located in protected land or land of high value in terms of biodiversity outside the protected areas or adjacent to such areas

Detailed information on the locations and areas of owned, leased or rented by Grupa LOTOS and commercial companies of the LOTOS Group land located in protected areas or land of high value in terms of biodiversity outside the protected areas or adjacent to such areas is available [on the website of Grupa LOTOS](#).

GRI AREA

No.

EN 12 Description of material impact of operation, products and services on

biodiversity of protected areas and areas of high biodiversity outside protected areas

The proper use of Grupa LOTOS products does not cause any material impact on the environment.

GRI AREA

No.

EN 14 Strategy, actions and management plan for the impact on biodiversity

No negative impact of the production activity by Grupa LOTOS has been found on the biodiversity level in the land, fresh water and sea environment. Actions taken by the commercial companies of the LOTOS Group have been presented [on the website of Grupa LOTOS](#).

GRI AREA

No.

EN 15 Number of species listed in the Red Book of the International Union for Conservation of Nature and the domestic lists of endangered species identified on the area affected by the organization according to the level of extinction hazard

The operation of Grupa LOTOS does not cause any hazard to species listed in the Red Book of IUCN.

Emission, sewage and waste

GRI AREA

No.

EN 16 Total direct and indirect emission of greenhouse gases by weight

Emission [thousand tonnes / year]

2005

CO₂

979

200

1,15

GRI AREA

No.

EN 18 Initiatives taken to reduce the emission of greenhouse gases and the effects

Grupa LOTOS has taken several initiatives to achieve this aim, namely:

- computer system of energy consumption visualization and optimization,
- recovering and reusing flared gases – the initial stage is being implemented (concept, profitability, etc.),
- analysis of the potential application of CO₂ sequestration techniques combined with the operation of LOTOS Petrobaltic, and
- introducing natural gas to the power supply system of Grupa LOTOS.

GRI AREA

No.

EN 19 Emission of substances that deplete the ozone layer by weight

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

GRI AREA

No.

EN 20 Emission of NO_x and SO_x compounds and other material compounds emitted to air by type and weight

Emission [tonnes/year]	2005	2006
SO₂	6,216	4,859
Maximum acceptable value of SO ₂	8,256	8,256
NO₂	1,442	1,601
Maximum acceptable value of NO ₂	2,262	2,262
Dust	339	364
/Dust from the power plant	97	94
Maximum value of dust / maximum value for the power plant	448	-
	163	163
GRI AREA		
No.		

EN 21 Total volume of discharged sewage by quality and target destination

Volume of discharged sewage [m ³]	Receiver	2005	2006	2007	2008	2009
	Rozwójka	3,837,21	3,960,83	3,873,53	3,294,54	4,083,60
	a	7	0	4	0	4
	Martwa			379,080	724,249	1,094,22
	Wisła					0
	Total	3,837,21	3,960,83	4,252,61	4,018,78	5,177,82
		7	0	4	9	4

Parameters of treated sewage discharged to the receivers from Grupa LOTOS by years were as follows:

Rozwójka	2005	2006	2007	2008	2009
pH	7.9	7.9	7.8	--	--
maximum acceptable values	6.5 – 9.0	6.5 – 9.0	6.5 – 9.0	--	--
BZT [mg O ₂ /dm ³]	11.6	7.4	7.5	--	--
maximum acceptable value	15	20	20	--	--
ChZT [mg O ₂ /dm ³]	46.3	43.4	50.9	--	--
maximum acceptable value	70	100	100	--	--
General suspensions	12.1	7.2	7.3	9	9.6

[mg /dm ³]						
maximum acceptable value	30	35	35	35	35	
Volatile phenols [mg /dm ³]	0.011	0.009	0.011	--	--	
maximum acceptable value	0.3	0.08	0.08	--	--	
Substances extracted with oil ester [mg /dm ³]	1.1	1.1	2.2	--	--	
maximum acceptable value	40	40	40	--	--	
Oil hydrocarbons	--	1.7	1.25	1.54	1.64	
[mg /dm ³]						
maximum acceptable value	--		5	5	5	5
General nitrogen [mg N/dm ³]	6.8		5.7	4.9	--	--
maximum acceptable value	25		25	25	--	--
General phosphorus [mg P/dm ³]	0.65		0.5	0.4	--	--

maximum acceptable value	2.5		2.5	2.5	--	--
Sulphides [mg S/dm ³]	0.027		0.008	0.01	--	--
maximum acceptable value	0.2		0.16	0.16	--	--
Nickel [mg Ni/dm ³]	--		0.0158	0.0127	--	--
maximum acceptable value	--		0.4	0.4	--	--
Vanadium [mg V/dm ³]	--		0.066	0.0243	--	--
maximum acceptable value	--		1.6	1.6		
Aluminium [mg Al/dm ³]	--		0.0712	0.0867		
maximum acceptable value	--		2.4	2.4		
Martwa Wisła	2005	2006	2007	2008	2009	
pH	--	--	7.5	7.9	7.5	
maximum acceptable value	--	--	6.5 – 9.0	6.5 – 9.0	6.5 – 9.0	
BZT [mg O ₂ /dm ³]	--	--	2.6	3.9	5.5	
maximum acceptable value	--	--	20	20	25	
ChZT [mg O ₂]	--	--	56.4	54.8	51.5	

/dm ³					
maximum	--	--	100	100	125
acceptable value					
General suspensions [mg /dm ³]	--	--	5.6	8.6	12.5
maximum acceptable value	--	--	35	35	35
Volatile phenols [mg /dm ³]	--	--	0.002	0.003	0.005
maximum acceptable value	--	--	0.08	0.08	0.1
Substances extracted with oil ester [mg /dm ³]	--	--	2.7	1.2	1.21
maximum acceptable value	--	--	40	40	50

m acceptable value					
Oil hydrocarbons [mg /dm ³]	--	--	1.1	0.51	0.73
maximum acceptable value	--	--	5	5	5
General nitrogen [mg N/dm ³]	--	--	3.1	4	4.3
maximum acceptable value	--	--	25	25	30
General phosphorus [mg P/dm ³]	--	--	0.4	0.4	0.9
maximum acceptable value	--	--	2.5	2,5	3
Sulphide	--	--	0.004	0.01	0.01

S [mg S/dm ³]					
maximum acceptable value	--	--	0.16	0.16	2
Nickel [mg Ni/dm ³]					
maximum acceptable value	--	--	0.0124	0.0089	0.0548
Vanadium [mg V/dm ³]					
maximum acceptable value	--	--	0.0296	0.0254	0.0679
Aluminium [mg Al/dm ³]					
maximum acceptable value	--	--	0.032	0.0383	0.0420
			2.4	2.4	3.0

In 2005–2007 (first half year) the precipitation and drainage waters as well as production sewage, oiled water and sanitary sewage, after treatment, were discharged with one outlet to the receiver, i.e. the Rozwójka River. In the second half of 2007, the discharged streams were separated. The precipitation and drainage water is discharged to the Rozwójka River, while the production sewage, sanitary sewage and oiled water, after treatment, is discharged to the Martwa Wisła.

GRI AREA
No.

EN 22 Total weight of waste by type and disposal method

Year	2005	2006	2007	2008	2009
Waste produced in year including:	8,280	8,294	9,100	8,06	10,305
Hazardous waste	4,327	3,919	4,151	4,126	4,242
Waste other than hazardous	3,953	4,375	4,949	4,680	6,063
Waste stored as of the end of the previous year	4,672	3,882	3,446	3,680	3,367
Total: waste to be managed during the year	12,952	12,176	12,546	12,486	13,672
Maximum acceptable	57,991	57,991	57,991	57,991	89,627

le value (data from the integrate d permit)					
Recycle d waste (recyclin g)	8,012	8.,69	8,765	8,964	10,215
Neutraliz ed waste, including :	1,058	361	101	155	1,243
Incinerati on			36	99	966
Disposal to a storage facility			65	56	277
Waste stored at the site as of the end of the year including :	3,882	3,446	3,680	3,367	2,214
hazardo us	1,249	1,119	970	988	953

other 2,633 2,327 2,710 2,379 1,261

GRI AREA

No.

EN 23 Total number and volume of material leakage

In 2009, out of 16 failures that occurred, there was one of significance for the environment, namely the leakage of product/diesel oil due to the criminal drill on the pipeline transporting the product to the port. It is not possible to determine the volume of diesel oil that leaked. The scale of the event and the method of repairs were determined.

GRI AREA

No.

EN 24 Weight of transported, imported, exported and processed waste classified as hazardous (according to Annexes I, II, III and VIII of the Basel Convention) and the percentage of waste in transboundary movement

In 2009, Grupa LOTOS exported 286,768 tonnes of hazardous recycled waste. Moreover, 4,277 tonnes of hazardous waste were disposed of domestically, including 3,330 tonnes to be recycled and 947 tonnes to be neutralized.

GRI AREA

No.

EN 25 Type, size, protective status and importance for biodiversity of water regions and habitats that are affected significantly by water discharged by the organization and leakage

The receivers of water and sewage from Grupa LOTOS do not hold the status of protected water regions. There is no hazard for the biodiversity in these receivers.

Products and services

GRI AREA

No.

EN 26 Initiatives aimed at minimising the impact of products and services on the environment and the effect of such initiatives

Initiatives aimed at limiting the negative impact of products and services on the environment, due to the nature of the business, are taken by individual companies of the LOTOS Group, in particular by: LOTOS Asphalt, LOTOS Oil, LOTOS Paliwa, LOTOS Parafiny and LOTOS Kolej. Projects implemented by the entities of the LOTOS Group have been presented [on the website of Grupa LOTOS](#).

GRI AREA

No.

EN 27 Percentage of recovered materials from the sold products and their packaging by categories of materials

According to the Act of 11 May 2001 on the obligations of entrepreneurs within management of certain waste and the product charges and the deposit charges, the management relative to recovery and recycling of packaging waste and used products as well as the recovery and regeneration of lubricating oils as falling under obligations of selected companies within achieving the aforementioned required levels, have been transferred to specialist recycling organizations. The detailed data for 2009 concerning the fulfilment of the waste management by the commercial companies of the LOTOS Group have been presented [on the website of Grupa LOTOS](#).

Compliance

GRI AREA

No.

EN 28 Value of material fines and the total value of non-financial sanctions for non-compliance with laws and regulations concerning environmental protection

No cases of violations of and/or non-compliance with environmental laws and regulations by Grupa LOTOS occurred in the period given analysed.

Transport

GRI AREA

No.

EN 29 Material impact on the environment due to transport of products, other goods and materials used in the operation of the organization

and the transport of employees

Commercial companies of the LOTOS Group contract the transport of their products from specialist companies. The description of the procedures and requirements applied when ordering such services by individual companies has been detailed [on the website of Grupa LOTOS](#).

Outlays on environmental protection

GRI AREA

No.

EN 30 Total expenses on environmental protection and investments by type

Costs incurred by exploiting the right to use the environment for economic purposes incurred by Grupa LOTOS Emissions [thousand PLN]

	2005	2006	2007	2008
Emission to air	3,594	3,518	3,521	3,521
Water intake	87	109	100	110
Sewage discharge	295	266	280	210
Total	3,940	3,893	3,902	3,841

environmental protection incurred by Grupa LOTOS: Outlays [thousand PLN]

	2005	2006	2007	2008	2009
Total investments	246,123	284,104	858,462	1,910,687	2,271,034
Environmental investments	7,265	34,387	99,880	224,723	138,818

