We reduce energy consumption

[G4-EN1] [OG1] [OG8]

The LOTOS Group has in place a *List of Environmental and Energy Efficiency Objectives*, which includes the following three objectives:

1. Improved energy efficiency of the inter-plant pipeline steam heating system,
2. Reduced consumption of primary energy at the refinery,
3. Improved energy efficiency of the inter-unit connections system.

In our business, cost of energy represents the largest item of operating expenses, therefore we attach particular importance to energy consumption by:

- Ensuring the rational use of energy,
- Maintaining equipment in good technical condition,
- Implementing effective investment projects.

The effectiveness of such an approach is confirmed by the fact that our refinery has for many years ranked among the most energy efficient refineries in Europe.

We operate on the basis of the **Energy Management System (EnMS)**, whose primary purpose is to optimise energy consumption. The energy efficiency of the units and the intermediate processes they perform are monitored on an ongoing basis. The Energy Efficiency Team analyses individual areas and participates in activities aimed at reducing energy consumption.

The LOTOS Group undergoes an **energy audit** to identify potential for efficiencies and areas where undertaking organisational, overhaul or investment initiatives is most likely to bring energy savings and economic benefits.

[G4-EN1]

LOTOS Group's consumption of raw materials in production processes in 2016

REBCO (Russian Export Blend Crude Oil) accounted for **75.18%** of the total crude procurement volume. Crude oil from other sources, including approximately 220,000 tonnes supplied by the LOTOS Petrobaltic Group, accounted for the balance of the crude feed. The mix of crudes resulted from the production optimisation process whose objective was to take advantage of opportunities for increasing the refinery's processing margins.

Crude oil	Volume (t)	Share
REBCO	7,808,862	75.18%
ROZEWIE	107,253	1.03%
B8	141,922	1.37%
LITHUANIAN	40,873	0.39%

Crude oil	Volume (t)	Share
PGNiG	268,787	2.59%
Other	2,019,585	19.44%
TOTAL	10,387,363	100.00%

Other feedstocks used in refining operations	Volume (t)	Share
Demineralised water	322,295	33.32%
FAME (fatty acid methyl ester)	36,974	3.82%
diesel oils	118,046	12.20%
ETBE (ethyl tertiary-butyl ether)	12,983	1.34%
ethanol	49,318	5.10%
MTBE (methyl tertiary-butyl ether)	24,857	2.57%
natural gas	380,561	39.34%
additives	2,527	0.26%
other	19,693	2.04%
TOTAL	**967,254**	**100.00%**

Refinery's own consumption	Volume,(t)	Share
fuel gas	311,13	33.31%
residual gas	479,815	51.37%
fuel oil	32,951	3.53%
other	110,151	11.79%
TOTAL	**934,047**	**100.00%**

Final products	Volume (t)	Share
gasolines (with reformates)	1,550,430	14.92%
naphtha	520,762	5.01%
xylenes	71,129	0.68%
diesel oil	4,509,280	43.40%
gasoil	262,059	2.52%
fuel oil	1,515,381	14.58%

Final products	Volume (t)	Share
MGO bunker fuel	72,074	0.69%
JET aviation fuel	637,229	6.13%
bitumen components	594,091	5.72%
LPG (Liquefied Petroleum Gas)	186,214	1.79%
base oils	267,605	2.58%
slack wax	49,804	0.48%
plasticisers	36,452	0.35%
sulphur	98,132	0.94%
other, including: 2,509 tonnes of fuel gas sold to LOTOS Asfalt	19,812	0.19%
TOTAL	10,390,454	100.00%

[OG8]

Benzene, sulphur and lead content in Grupa LOTOS fuels:

Substance	Unit	Requirement	2015 - volume	2015 - volume (average)	2016 - volume	2016 - volume (average)
benzene (in gasolines)	% V/V	max. 1.00	0.4 - 0.9	0,7	0.25÷0.94	0,73
sulphur (in gasolines)	mg/kg	max. 10.0	0.3 - 10.0	2,8	0.1÷8.8	2,3
sulphur (in diesel oil)	mg/kg	max. 10.0	2.0 - 9.6	6,7	2.8÷9.9	6,5
lead	mg/kg	max. 5	<2.5	<2.5	<2.5	<2.5