

# Sustainable products



**THE GLOBAL GOALS**  
For Sustainable Development



Adverse climate changes and environmental pollution, as well as growing consumer awareness and expectations, entail a need to expand the range of sustainable products. In the fuel industry, fossil fuels are replaced by renewable energy sources, which contribute to lowering emissions, including CO<sub>2</sub> emissions.

## Energy of the future at Grupa LOTOS

Replacement of fossil fuels by other energy sources has long been a subject of strategic analyses at Grupa LOTOS. We see fossil fuel substitution not only as a threat to our principal activities associated with conventional energy, but also as an opportunity to further expand our business by leveraging long-term trends on the global energy market.

### How do we contribute to fossil fuel substitution?

- We are engaged in work on possible applications at the Grupa LOTOS refinery of hydrogen generated through electrolysis of water with the use of renewable energy sources, which is part of the GEKON (Generator of Ecological Concepts) programme, a joint initiative of the National Fund for Environmental Protection and Water Management and the National Centre for Research and Development <http://program-gekon.pl/>.
- We are also looking into the possibility of processing vegetable oils and animal fats into bio-hydrocarbons in the HVO (Hydrotreated Vegetable Oil) process.

Further investments are conditional upon successful completion of [EFRA](#), our strategic project, which will significantly improve the competitive position of Grupa LOTOS and complexity of its refinery.

## High quality standards of Grupa LOTOS fuels

All Grupa LOTOS fuel products meet the quality requirements prescribed by law, and in some environmentally relevant respects – even exceed the legally required standards.

The sulfur content of our key products, both gasolines and diesel oils manufactured by the Gdańsk refinery, is substantially below the legal limit. The average annual sulfur content in motor gasolines and diesel oils is 2.8 ppm and 6.7 ppm, respectively, considerably below the legal limit 10 ppm. This results in substantially lower sulfur dioxide emissions.

### Hazardous substances in Grupa LOTOS fuels

Substance	Unit	2015 volume	2015 volume (average)	2014 volume	2014 volume (average)
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<b>Benzene (in gasolines)</b>	% V/V	0.4 - 0.9	0.7	0.5 - 1.0	0.8
<b>Sulfur (in gasolines)</b>	mg/kg	0.3 - 10.0	2.8	0.1 - 8.7	3.3
<b>Sulfur (in diesel oil)</b>	mg/kg	2.0 - 9.6	6.7	2.4 - 9.9	5.7
<b>Lead</b>	mg/kg	<2.5	<2.5	<2.5	<2.5

## Biocomponents in Grupa LOTOS fuels

Fuels manufactured at the Grupa LOTOS refinery contain biocomponents, i.e. renewable energy carriers, as required by the Polish Act on Biocomponents and Liquid Biofuels. According to the current quality requirements for liquid fuels, the permitted ethanol and ethyl tert-butyl ether content in gasoline is 5% and 15%, respectively. Similarly, the volume of fatty acid methyl esters in diesel oils must not exceed 7%.

In 2013, the Council of Ministers issued a Regulation on National Indicative Targets (NIT) for 2013–2018, setting NIT for 2013–2016 at 7.1%, which means that biocomponents must account for 7.1% of the energy content of fuels marketed in Poland (the national blending quota).

In 2015, Grupa LOTOS was allowed to meet a lower NIT of 6.035%, having fulfilled the statutory requirement whereby at least 70% of the total biocomponent volume used for liquid fuel and biofuel production must be supplied by producers listed in the register of the Agricultural Market Agency.

In 2015, Grupa LOTOS produced nearly 102.7 million litres of biocomponents meeting the sustainability criteria set forth in Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources, and defined by recognized certification systems. They were produced in Czechowice-Dziedzice. We also purchased 397.5 million litres of biocomponents meeting the sustainability criteria.