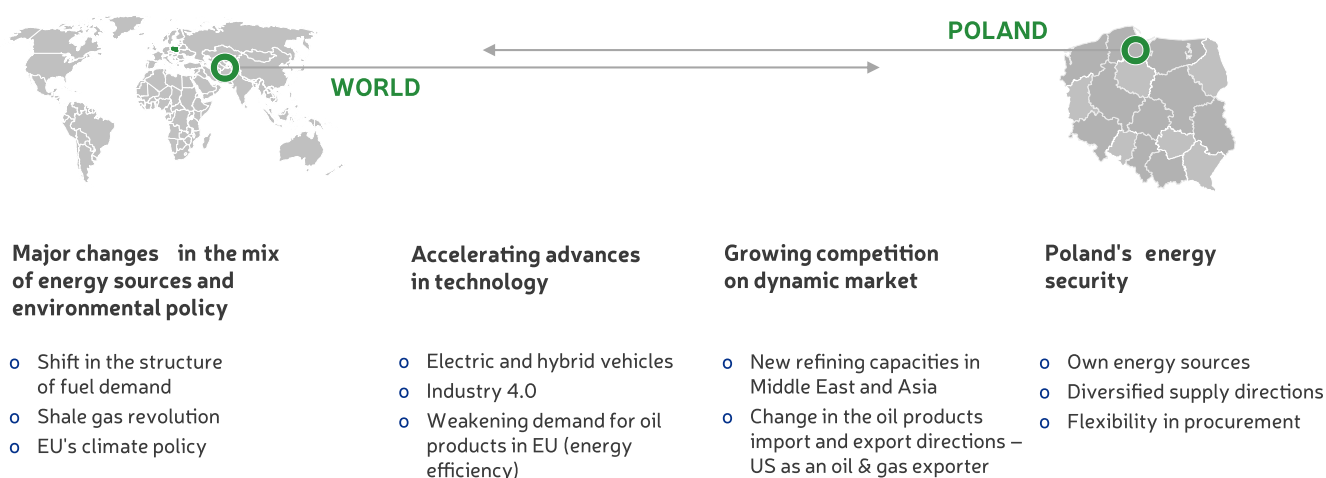


Long-term prospects for the LOTOS Group's expansion

Key opportunities and challenges in the long term

According to long-term projections, demand for fuel will grow in Central and Eastern Europe and continue to weaken in Western Europe – by 14% by 2030. As a whole, Europe is forecast to see stronger demand for aviation fuels and a decline in demand for gasoline. Concurrently, under the EU climate policy, refineries will be required to adopt solutions to reduce CO₂ and other greenhouse gas emissions and to step up the use of renewables.

Key long - term market opportunities and challenges



Major changes in the mix of energy sources and environmental policy:

Shift in the structure of fuel demand

By 2021, global demand for fuel is expected to grow by 5 mboe/d (to 100.6 boe/d), despite a 0.4 mboe/d decline in Europe. Across Europe, gasoline consumption will decrease by 13%, while demand for jet fuel and diesel oil will rise by 10% and 3%, respectively.

Shale gas revolution

In the U.S., upstream companies have been deploying increasingly more advanced and cost-effective shale oil production technologies, thus also reducing servicing costs. This has resulted in greater output of natural gas and crude oil and has allowed the U.S. to reduce its dependence on imported energy commodities and to develop energy-intensive industries.

EU's climate policy

The EU has proposed to introduce more stringent climate protection regulations by 2030. They will provide for further cuts in CO₂ and other greenhouse gas emissions and for an increased share of renewables in the energy mix. Highly efficient and technologically advanced, the Gdańsk refinery is well braced for these changes.

Accelerating advances in technology:

Electric and hybrid vehicles

The intensive development in the area of hybrid and electric vehicles is one of the key factors to contribute to the projected decline in demand for liquid fuels.

Industry 4.0

Modern technologies, e.g. advanced analytics, big data, automation, robotics or 3D printing, are becoming increasingly widespread in today's industry. They are applied to enhance production efficiency and reduce costs, with complex and large-scale production processes appearing to benefit the most from the fourth industrial revolution.

Weakening demand for oil products in EU – energy efficiency

Efficiency measures taken in Western Europe will also slow the growth of demand for fuels in Central and Eastern Europe. However, it is the still growing CEE market that is considered to be promising in the coming years. By 2025, it is forecast to see a 4% increase in demand for transport fuels (gasoline, diesel oil, light heating oil).

Growing competition on dynamic market:

New refining capacities in the Middle East and Asia

To diversify their operations and expand their value chain, Middle East countries are building new refining capacities which will increase competition in the global refining market in the future.

Change in the oil products import and export directions – The US as an oil & gas exporter

Recent years have seen major changes in oil imports and export directions. In the wake of the shale revolution, the U.S. has become a major player in the global energy sector. An importer has turned into an exporter. For the Middle East, this necessitates search for new export directions, which in turn renders the European market more appealing to oil producers (given its geographical proximity). In addition, with the lifting of international sanctions, Iran has returned to the global market as an exporter of oil to various regions, including in particular India, China and Europe (together with the U.S., these three account for half of the global oil demand).

Poland's energy security:

Own energy sources

Expansion of the production segment (LOTOS Petrobaltic) through diversification of the current upstream portfolio and purchase of new upstream assets (including in new, though stable, geographic locations) creates an opportunity to enhance the segment's efficiency. Potential risks include the scale of the upstream sector on the one hand (globally, LOTOS is considered a minor player) and considerable uncertainty as to oil prices in the future on the other (especially in the context of the U.S. shale revolution and the development of new engine technologies).

Supply chain diversification and flexibility in feedstock procurement

With access to a seaport, the LOTOS Group is able to adopt a flexible approach and purchase a wide range of oil grades from across the world. Our state-of-the-art refinery is characterised by great flexibility in processing of crude oil. This enables us to take advantage of the current market conditions and buy crude at competitive prices, and consequently to reduce our largest cost item. The risk lies in maintaining operating efficiency – frequent changes in the composition of feedstock require a thorough knowledge of refining facilities and of the market, as well as quick verification of suppliers.