Directors' Report on the operations of Grupa LOTOS S.A. and the LOTOS Group for 2021

This is the translated version of a document originally issued in Polish

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1 Overview of Grupa LOTOS S.A. and the LOTOS Group

1.1 Key facts

The history of Grupa LOTOS goes back to the 1970s, when the crude oil refinery in Gdańsk was built. As a joint-stock company, it has operated since September 18th 1991 (then as Rafineria Gdańska S.A.), renamed to Grupa LOTOS S.A. in April 2002.

Name	Grupa LOTOS S.A.
Registered office	80-718 Gdańsk ul. Elbląska 135
Industry Identification Number (REGON)	190541636
Tax Identification Number (NIP)	5830000960
KRS entry No.	0000106150
Registry court	District Court for Gdańsk-Północ in Gdańsk, 7th Commercial Division of the National Court Register
Duration	The duration of Grupa LOTOS S.A. is indefinite.

The Company's principal business activity consists in the production and processing of refined petroleum products (mainly fuels) and their wholesale.

Grupa LOTOS S.A. has no divisions (establishments) within the meaning of the Polish Accounting Act.

1.2 Business overview

Grupa LOTOS S.A. is the second largest fuel producer in Poland. The Company's refinery in Gdańsk is among the youngest, most advanced and most environmentally-friendly plants of its type in Europe. In 2021, the refinery operated at close to full capacity, having processed 9.9 million tonnes of crude oil (98.8% of the nameplate processing capacity).

Figure 1. Crude oil processed by Grupa LOTOS S.A. (million tonnes)

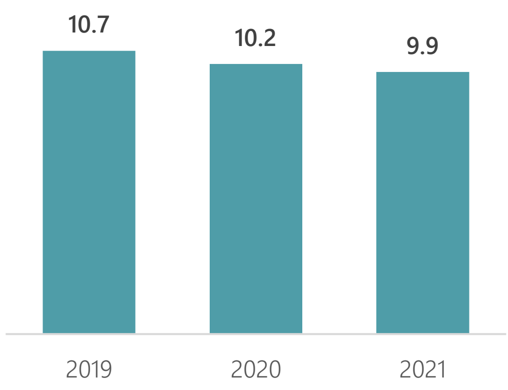
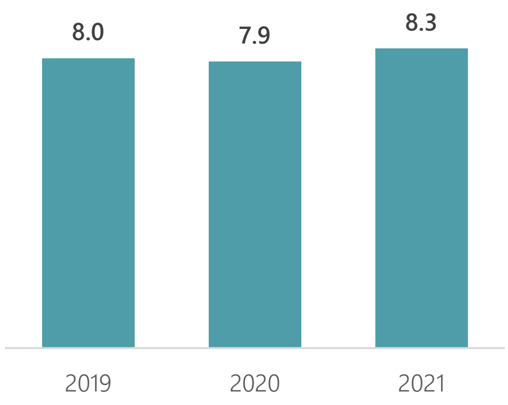


Figure 2. Sales of fuels[1] by the LOTOS Group in Poland (million tonnes)



Source: the Company.

Grupa LOTOS S.A. sells its products in Poland on the wholesale market and through its own retail network of service stations. In 2021, the LOTOS Group's share in the domestic fuel market was 32.2%. As at the end of 2021, with 520

[1]Gasolines, diesel, light fuel oil, LPG, aviation fuel (Jet)

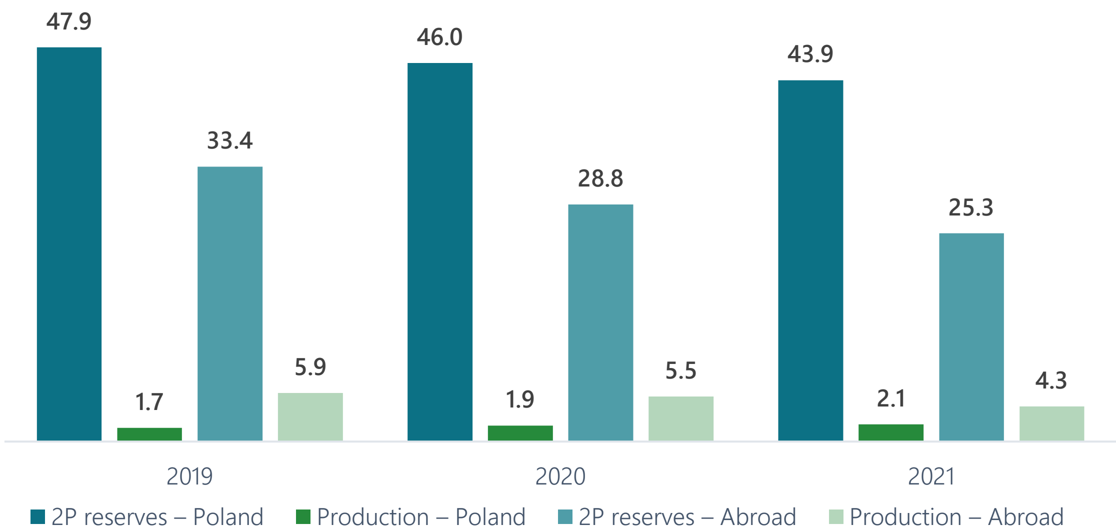
service stations operating under the LOTOS brand, the Group's distribution network was the third largest in Poland. A significant portion of the Group's refining production, approximately 12% of the total output, is exported.

Through its subsidiaries, Grupa LOTOS produces hydrocarbons within Poland's Exclusive Economic Zone of the Baltic Sea. It also produces oil and natural gas from fields located on the Norwegian Continental Shelf and in Lithuania. As at the end of 2021, Grupa LOTOS's total proved and probable (2P) reserves of oil and natural gas were estimated at 69.2 million boe. In 2021, the Company's total crude production volume was 6.33 million boe (an average of 17.3 thousand boe per day).

Map 1. **Areas of the LOTOS Group's operations**

Source: the Company.

Figure 3. **2P reserves and production (million boe)**



Source: the Company.

Through LOTOS Kolej sp. z.o.o., the LOTOS Group is also an important player on the Polish rail freight market. According to the Office of Rail Transport data, in 2021 LOTOS Kolej's market share was 10% in terms of tonne-kilometres (compared with 10.4% in 2020), which made it the second largest company on the market; and 5.3% in terms of the mass of goods carried (compared with 5.6% in 2020), making Kolej the third largest operator in this category.

The key objectives of Grupa LOTOS's strategy for 2017–2022 are the Group's stabilisation and sustainable growth. Grupa LOTOS is Poland's leading company and a major energy group. Its vision for growth is to position itself as:

- a producer of premium quality fuels and chemicals, with the optimal degree of vertical integration,
- a provider of specialist logistics and maintenance services, and
- a leader of innovative implementations within its core business, designed to promote sustained growth in shareholder value.

In 2021, the LOTOS Group earned revenue of PLN 33.1 billion. The main portion of revenue was generated by the refining and marketing segment – 96%. The Group sells its products mainly to domestic customers. Domestic sales accounted for 85.4% of total revenue.

Figure 4. **Financial performance of the LOTOS Group (PLNbn)**

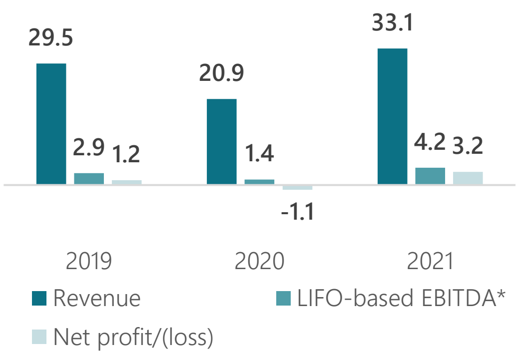
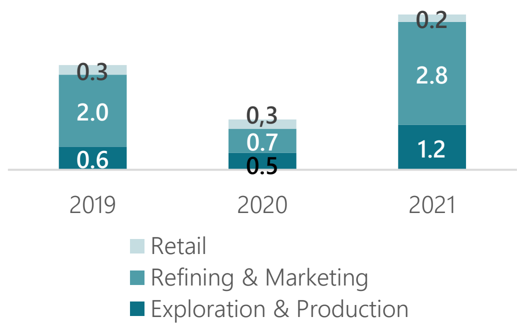


Figure 5. **LIFO-based EBITDA* of the LOTOS Group by segment (PLNbn)**



* Adjusted for one-off items.

Figure 6. **Operating cash flows and capex (PLNbn)**

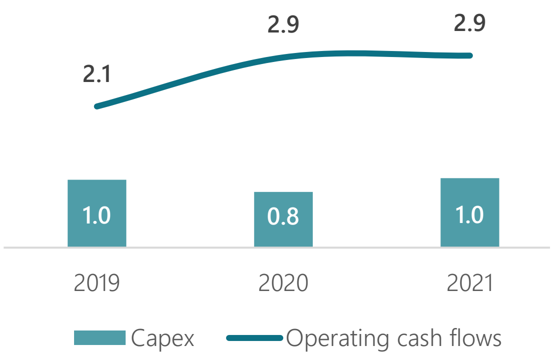
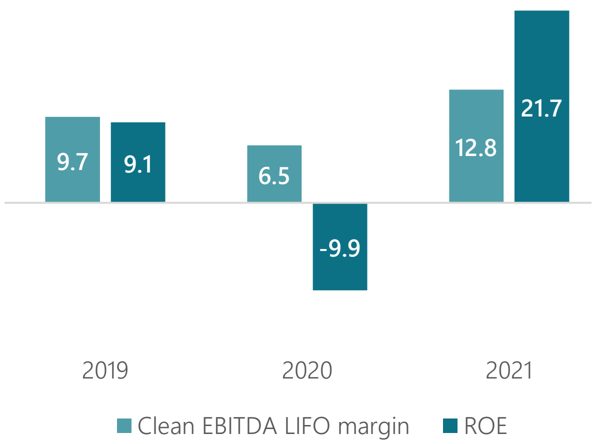


Figure 7. **Adjusted LIFO-based EBITDA margin and return on equity (ROE) of the LOTOS Group (%)**



Source: the Company.

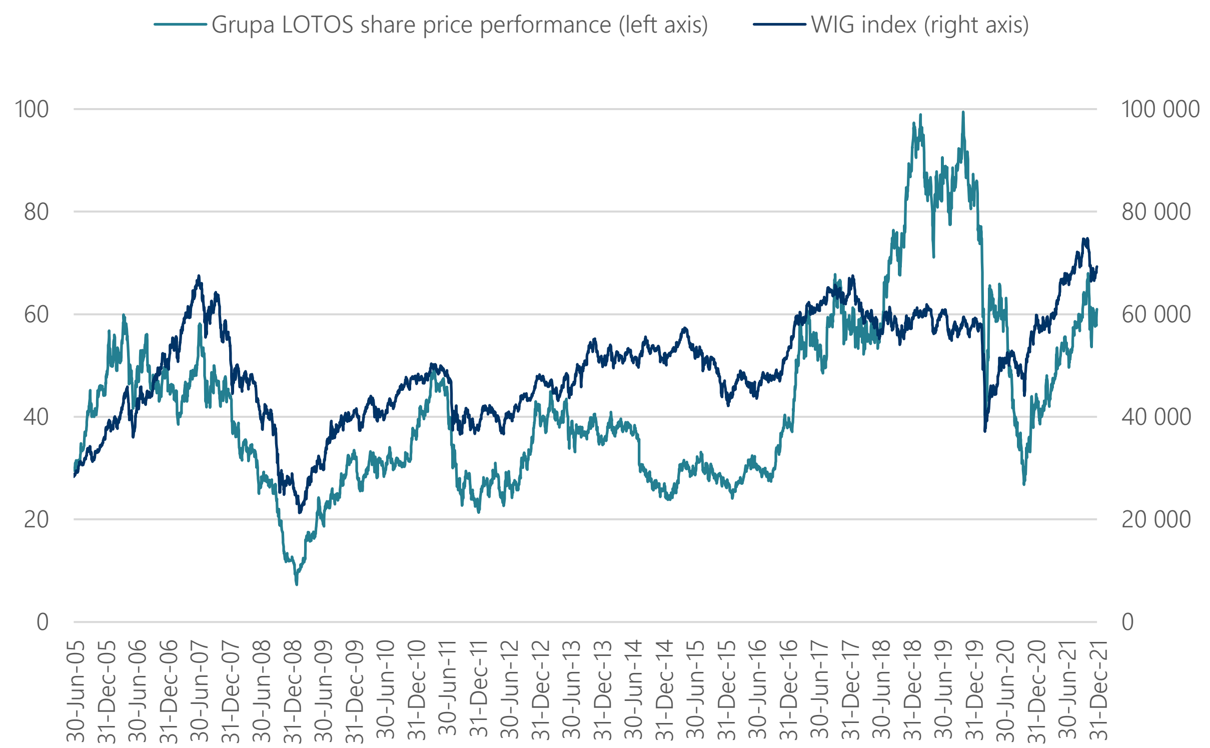
Apart from Grupa LOTOS S.A., the Group currently consists of 45 entities, including four joint ventures and a foundation, operating in Poland, Norway, the United Kingdom and Lithuania. As at the end of 2021, the LOTOS Group employed 5,472 staff, including 708 at Grupa LOTOS S.A.

One of the key paradigms underlying the LOTOS Group's operations is sustainable development, understood as efforts to continuously improve efficiency while reducing negative environmental impacts. The Gdańsk refinery is among the top 10% on the list of European refineries with the lowest carbon footprint. Over the last decade, despite a significant increase in refining production, the LOTOS Group reduced its CO_2 emissions by a third, to 28.2 kg per tonne in 2021.

Companies of the LOTOS Group are actively involved in projects to protect the natural environment and cut down emissions of pollutants. One of these initiatives was the launch of the *Blue Trail* project, under which 12 EV charging points have been deployed between Warsaw and the Tricity. Grupa LOTOS is also implementing the Pure H2 project, designed to sell very high purity hydrogen (99.999%) as a transport fuel, as well as the Green H2 project, which provides for the construction of a large-scale facility consisting of electrolyser units, hydrogen storage facilities and fuel cells or hydrogen turbines, producing zero emission hydrogen for the refinery's needs, while supporting the Polish power system as a hydro-pumped electricity storage facility. The Company also completed the construction of a continuous emissions monitoring system (CEMS) and a Hydrogen Recovery Unit, which, on the one hand, will deliver new products comprising LPG, naphtha, light gasoline and hydrogen, and, on the other, will help reduce CO_2 air emissions. Towards the end of 2020, the Grupa LOTOS refinery also produced its first biocomponents: biopropane (an LPG biocomponent) and liquid biohydrocarbons (diesel biocomponents), marking the first step in its conversion towards an organic refinery using feedstocks of plant origin. Then, in 2021, Grupa LOTOS, being one of the signatories of the initiative led by the Ministry of Climate and Environment, signed the "Cooperation agreement for the development of biogas and biomethane sector in Poland". Jointly with partners, the Company also proposed a set of recommendations for legislative changes to enable the launch of large-scale, commercial carbon capture and storage (CCS) projects in Poland.

Grupa LOTOS S.A. shares have been listed on the Warsaw Stock Exchange since June 30th 2005. Its shares are included in numerous domestic and international indices, including WIG20, which comprises the 20 largest issuers listed on the Warsaw Stock Exchange. The Company's parent is the Polish State Treasury, holding 53.19% of the voting rights and share capital. In 2021, the share price of Grupa LOTOS S.A. increased by 47.2%, i.e. to PLN 61 compared to PLN 41.45 at year end 2020. As at the end of 2021, the Company's market capitalisation was PLN 11.3 billion.

Figure 8. **Grupa LOTOS share price from June 30th 2005 to December 31st 2021**



Source: In-house analysis based on WSE data.

Table 1. **Key financial and operating indicators of the LOTOS Group for 2011–2021**

	Unit	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Adjusted LIFO-based EBITDA	PLNm	4,229	1,357[2]	2,861	3,099	3,051	2,590	2,156	1,391	1,094	2,021	1,181
Revenue	PLNm	33,124	20,909	29,493	30,122	24,186	20,931	22,709	28,502	28,559	33,074	29,260
Net profit/loss	PLNm	3,212	- 1,146	1,153	1,587	1,672	1,015	-263	-1,466	39	928	649
Operating cash flows	PLNm	2,897	2,870	2,130	2,328	3,127	2,654	1,488	1,381	1,416	1,331	902
Production volume	thousand boe/d	17.3	20.3	20.7	20.4	22.9	26.7	11.9	10.5	4.9	6	4
Crude oil throughput	million tonnes	9.9	10.2	10.7	10.8	9.6	10.4	10.2	9.5	8.7	9.7	9.2
Service stations[3]	number	520	513	506	495	493	487	476	441	439	405	369

Source: the Company.

[2] The LOTOS Group's 2020 results were affected by fluctuations in its oil inventories and differences between the volumes purchased and processed during Q2, which resulted in the cost of crude oil processed, based on the LIFO (First in First out) inventory method, being calculated at a higher unit cost than the currently prevailing price, as the effect of old (significantly more expensive) oil inventories. This effect reflects a shortcoming of the adopted inventory valuation model and does not affect the generated flows. This negative effect on the LIFO-based result for 2020 is estimated at approximately PLN 370 million.

[3] At end of year.

2 Key events in 2021

January–March 2021

○ By a decision of the Norwegian authorities, LOTOS Norge was awarded three new exploration and production licences (for NOAKA and Sleipner areas)	January 19th 2021
○ Mr Marian Krzemiński resigned as Vice President of the Management Board, with effect as of March 1st 2021	January 22nd 2021
○ The Supervisory Board appointed Mr Krzysztof Nowicki as Vice President of the Management Board, Mergers and Acquisitions for Mergers and Acquisitions, with effect as of January 26th 2021	January 22nd 2021
○ Grupa LOTOS resumed publication of model refining margin and updated its calculation methodology	February 10th 2021
○ At the Grupa LOTOS refinery, the fourth railway loading station was launched, with a daily filling capacity of 6,000 tonnes of fuels	February 10th 2021
○ The Supervisory Board appointed Mr Jarosław Piotr Wróbel as Vice President of the Management Board, Chief Investment and Innovation Officer, with effect as of March 2nd 2021	February 17th 2021
○ The scheduled cyclical maintenance shutdown at the Company's refinery began, lasting until May 1st 2021	February 24th 2021
○ Mr Artur Cieślik resigned as Vice President of the Management Board, with effect as of March 15th 2021	March 2nd 2021
○ The Management Board of Grupa LOTOS adopted a directional approval of intra-organisational measures designed to optimise the Group's structure and prepare for implementation of the model of remedial measures necessary to merge with PKN Orlen S.A.	March 12th 2021
○ LOTOS Petrobaltic and its partners signed a letter of intent on cooperation and mutual support in the supply chain of materials and services as part of the offshore wind energy development programme in the Polish Exclusive Economic Zone in the Baltic Sea	March 31st 2021

April–June 2021

○ LOTOS Group, through the LOTOS Foundation, donated medical equipment to the hospital in Nowy Tomysl, once again supporting the fight against COVID-19. The total amount of support provided by Grupa LOTOS for the fight against the pandemic is approximately PLN 12m	April 14th 2021
○ The Company entered into a cooperation agreement with PKN Orlen, PGNiG and the State Treasury concerning the recommended consolidation scenario of PKN Orlen, PGNiG and Grupa LOTOS	May 12th 2021
○ Grupa LOTOS completed work to expand the availability of the LOTOS Pay&GO service, enabling customers to pay for the fuel directly at the pump through the mobile fuel application, at over 320 LOTOS brand stations	May 20th 2021
○ The Supervisory Board appointed the following persons to the Management Board of the 11th joint term of office with effect as of May 28th 2021: Zofia Paryła – President of the Management Board, Krzysztof Nowicki – Vice President of the Management Board for Mergers and Acquisitions, Piotr Walczak – Vice President of the Management Board, Chief Refining and Marketing Officer, Jarosław Wittstock – Vice President of the Management Board for Corporate Affairs, Jarosław Wróbel – Vice President of the Management Board for Investment and Innovation	May 27th 2021
○ Under the cooperation agreement with the Lithuanian company LTC Cargo, LOTOS Kolej commenced freight transport operations to Lithuania	May 28th 2021
○ As part of strategic efforts aimed at diversifying crude supplies for processing at the Gdańsk refinery, the plant received the first delivery of Nigerian Forcados crude	May 28th 2021
○ LOTOS Asfalt made early repayment of debt taken out to finance the EFRA Project	June 14th 2021
○ LOTOS Petrobaltic and Baltic Trade and Invest signed a letter of intent to partner in offshore wind farm projects	June 22nd 2021

○ Mr Adam Lewandowski tendered his resignation as Member of the Supervisory Board of the Company, effective June 29th 2021	June 22nd 2021

July–September 2021

○ The 'Code of Best Practice for WSE Listed Companies 2021' came into force. The Company reported on its application of the Code in EBI Report No. 1/2021 on July 30th 2021	July 1st 2021
○ The world's first UCOPure filtration unit for unconverted oil purification was delivered to the Gdańsk refinery	August 19th 2021
○ At the TRAKO 2021 Fairs, LOTOS Kolej presented its new vehicle, the most advanced locomotive engine in Europe: Vectron MS from Siemens Mobility	September 22nd 2021
○ LOTOS Oil and Kinetics Technology signed an agreement to implement the Hydrocracking Base Oils (HBO) on a fixed price and turnkey basis for the entire technological scope of the project to manufacture new high-margin products (Group 2 base oils) with planned commissioning scheduled for the first half of 2025	September 28th 2021
○ LOTOS Petrobaltic signed a two-year contract with Enspiron, a subsidiary of Energa, a company of the PKN Orlen Group, to use a TETRA critical communication solution in the Baltic Sea	September 28th 2021
○ In partnership with the Institute of Power Engineering and the Stanisław Staszic AGH University of Science and Technology of Kraków, Grupa LOTOS launched VETNI, a new high-performance hydrogen project to develop a highly efficient solid oxide electrolysis (SOE) unit for high-purity hydrogen production, powered with renewable energy	September 30th 2021

October–December 2021

○ LOTOS Petrobaltic launched gas transmission from the Baltic B8 field to Energobaltic in Władysławowo, where the latter's CHP plant produces heat for the municipal heating network	October 1st 2020
○ The Extraordinary General Meeting of the Company approved the spin-off of its refining assets and their transfer to LOTOS Asfalt, and conditionally approved the disposal of assets subject to remedies, necessary to continue the merger of Grupa LOTOS with PKN Orlen	October 14th 2021
○ Grupa LOTOS was recognised for the high quality and usefulness of reports prepared for shareholders and investors, ranking third in the Best Annual Report 2020 competition organised by the Institute of Accountancy and Taxes	October 14th 2021
○ The Management Board of Grupa LOTOS and representatives of trade unions agreed on the terms of the agreement to protect employees of the companies which, due to the implementation of the remedies, will cease to be a part of the LOTOS Group	October 26th 2021
○ Production from the YME field on the Norwegian Continental Shelf was launched; the estimated average output over the next five years is expected to reach approximately five thousand barrels of crude oil per day	October 26th 2021
○ LOTOS Petrobaltic and its partners Grupa LOTOS and Grupa Azoty presented a set of recommendations on legislative changes that would enable the deployment in Poland of large-scale commercial carbon capture and storage (CCS) projects	November 2nd 2021
○ Pursuant to a resolution of the Extraordinary General Meeting of Grupa LOTOS of October 14th 2021, an organised part of the Company's refining business in Gdańsk was contributed to LOTOS Asfalt in exchange for new shares in LOTOS Asfalt	November 2nd 2021
○ The European Commission agreed to extend until January 14th 2022 the deadline for implementation of the remedies necessary to merge Grupa LOTOS with PKN Orlen	November 12th 2021
○ Grupa LOTOS, being one of the signatories of the initiative led by the Ministry of Climate and Environment, signed the cooperation agreement to develop the biogas and biomethane sector in Poland	November 23rd 2021
○ LOTOS Asfalt signed a new facility agreement to refinance the EFRA Project debt together with ancillary facility agreements	December 28th 2021
○ Grupa LOTOS signed an annex to the letter of intent concerning analysis of the feasibility and terms of execution, if any, of a joint project to construct a CCGT power plant in Gdańsk by Energa, PKN Orlen and Grupa LOTOS	December 29th 2021

3 Macroeconomic environment of Grupa LOTOS and the LOTOS Group in 2021

3.1 Impact of the COVID-19 pandemic on the global fuel market

The year 2021 saw a rapid economic recovery that led to strong increases in electricity and commodity prices. Clearly, the economic landscape during this period was therefore vastly different compared with the COVID-19-enduced recession of 2020. According to the International Monetary Fund's (IMF) January 2022 estimates, global economic growth was 5.9%. Across Europe, the recovery was also very strong (with the highest growth seen in Ireland at 13.0%, and the lowest in Belarus at 2.1%), despite the socio-economic strictures being introduced locally, albeit with less intensity than in 2020. Additionally, improving economic conditions were supported by the effectiveness of COVID-19 vaccines and the pace of their roll-out worldwide. However, despite the prospects of further economic growth, there remain a large number of factors that could disrupt the growth momentum of the global economy – including the risk of potentially dangerous new COVID-19 variants emerging, supply chain bottlenecks, the level of sovereign debt in many countries, rising inflationary pressures and response by central banks. Above all, however, the greatest uncertainty is related to the further development of the conflict in Ukraine.

As the economy improved, so did the demand for fuels. According to analytical agencies, the demand expanded by over 5%, which was reflected in rising oil prices. In 2021, Brent crude averaged USD 70.9/bbl, compared with USD 41.8/bbl in 2020. Steps taken by the OPEC+ countries to balance the market (limited increase in output resulting in a decrease in stocks in the OECD countries) and, on the other hand, the growing availability of crude from non-OPEC countries (mainly the US, Canada, Russia, Norway, Guyana, and Argentina) had a significant impact on the prices seen during the year.

The global energy market in 2021 was heavily influenced by prices of natural gas. In the first half of 2021, the price of this commodity was under pressure from low air temperatures (cold winter), while in the second half of the year 2021 the price was influenced by a number of other factors, including Russia's strategy to limit exports to Europe (also to storage facilities owned by OAO Gazprom), which would eventually lead to the commissioning of the Nord Stream 2 gas pipeline (the certification process has been suspended). Further, lower gas production on the continent (Norway, the UK), the ongoing economic recovery (strong export growth to the Asia-Pacific region), as well as reduced availability of natural gas in maritime supply (LNG) pushed gas prices on the UK NBP (National Balancing Point) market from \$43.6/boe to \$97.7/boe, creating uncertainty about further economic growth (rising inflationary pressures).

The EU regulations and efforts to increase environmental protection have also had an impact on energy commodity prices. In the coming years, the *Fit for 55* legislative package proposed by the EC may have a fundamental impact on the fuel market (driving demand) and on refineries themselves (higher tax burdens). One of the proposed solutions is to extend the CO_2 emission reduction system (EU ETS) onto more and more sectors (transport, maritime). Taking into account the prices of emission allowances in 2021, which increased from 28.2 USD/t to 62.7 USD/t, further macroeconomic difficulties for the refining industry in Europe may be anticipated, which may result in least profitable plants being closed down.

3.2 Global demand for crude oil

3.2.1 Globally

Figure 9.Demand for crude oil in 2017–2021 (million b/d)

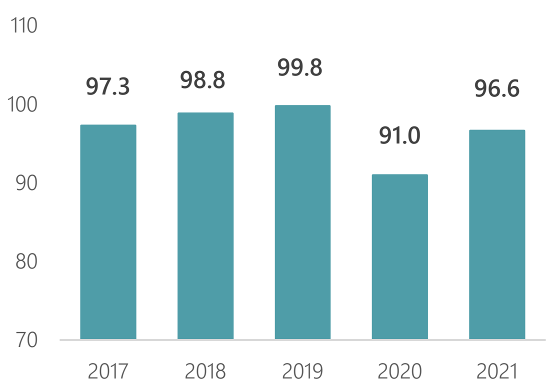
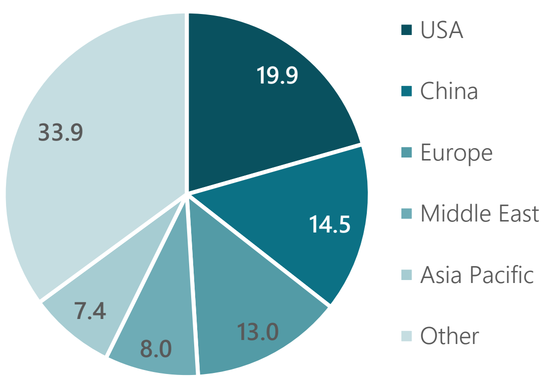


Figure 10. Key crude oil consumers in 2021 (million b/d)



Source: In-house analysis based on OPEC data

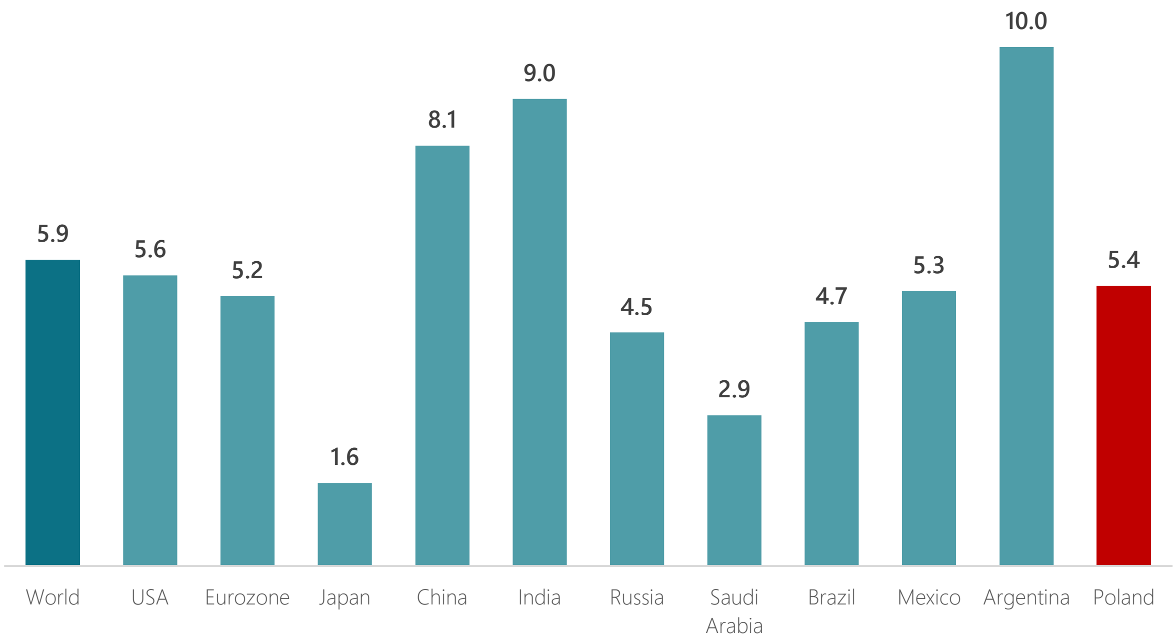
In 2021, the average global demand for crude oil was 96.63 million b/d, compared with 90.98 million b/d in 2020 (an increase of 6%).

Despite the coronavirus pandemic, the US remains the world's largest crude oil consumer. In 2021, the demand for crude among the top three consumers (the US, China, Europe) increased the most in the US (by 8.4% year on year). In the US, a significant portion of crude processed is sourced from domestic reserves (mainly unconventional shale deposits).

The key drivers of the demand for oil and gas include:

- climate protection measures – in July 2021, the European Commission published a legislative package called *Fit for 55*, which aims at accelerating economic transition to achieve the EU's climate neutrality. The demand for crude oil is in particular affected by the proposed obligatory minimum share of sustainable fuels in supplies of, for instance, aviation fuels. In addition, it was proposed to change the emission limits for vehicles, with a 55% reduction in greenhouse gas emissions by 2030 vs the 1990 levels and a long-term transition to zero net emissions by 2050. The high and steadily rising price of CO_2 emission allowances is stimulating a shift in the energy mix towards an increased share of renewables;
- economic growth rate – the opening of global economies after periods of strict lockdown measures and travel restrictions contributed to the return global GDP to the path of growth relative to previous years, especially 2020. The International Monetary Fund predicts that economic activity should rebound in 2022, with global GDP growth reaching 4.4% (compared with 5.9% in 2021) – although this forecast seems highly uncertain due to the outbreak of war in Ukraine;
- logistics and transport – during the year, the sector experienced difficulties. The most acute were port congestion, shortage of labour and sudden increase in demand for products;
- changes in the population preferences – as a result of the continuing COVID-19 pandemic, the trend was observed over the year to use private cars rather than public transport. Moreover, the continuing limited number of commercial flights contributed to the increased use of private means of transport means;
- technology advances – in addition to the use of new alternative fuels, innovations are being introduced to reduce fuel consumption by traditional propulsion systems, e.g. by improving the efficiency of automotive engines, reducing the weight of commercial vehicles, recovering power during braking, or streamlining vehicle bodies. Technology advances have also an effect on the cost and efficiency of such solutions.

Figure 11. Growth rate of Gross Domestic Product in 2021 (%)

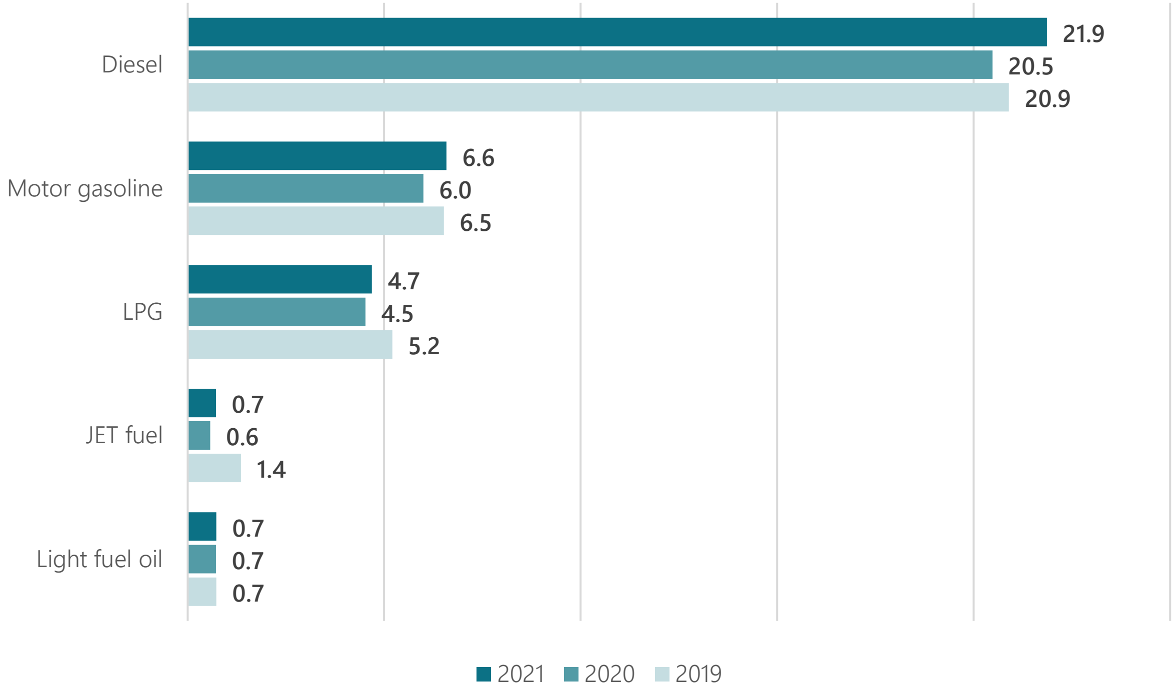


Source: In-house analysis based on IMF data (estimates).

3.2.2 Poland

In 2021, consumption of fuels (gasoline, diesel oil, light fuel oil, LPG, and aviation fuel) in Poland totalled 34.6 million cubic metres, an increase of 7.1% on 2020. With fewer pandemic-related restrictions, the demand increased in every product group, with consumption of gasoline increasing by 9.8%, diesel fuel by 6.8%, light fuel oil by 1%, and jet fuel by 25%.

Figure 12. **Fuel consumption in Poland (million cubic meters)**



Source: In-house analysis based on Polish Organisation of Oil Industry and Trade (POPiHN) data.

3.3 Crude oil supply

3.3.1 Globally

In 2021, the OPEC+ agreement was still in force, but was heavily modified in the wake of the COVID-19 outbreak. The member countries responded to changes in the environment, in particular Saudi Arabia, which in February voluntarily reduced the crude supply by 1 million b/d. However, the organization's strong expectation for the demand increase in the coming months brought about a regular monthly increase in the supply of crude oil by several hundred thousand barrels a day. The US sanctions imposed on Iran remained in force, which limited the availability of heavy and sour crude oil grades. In 2021, the supply of crude oil from the US was reduced twice owing to the forces of nature. Both reductions took place on the US south coast. In late February and early March, freezing temperatures caused temporary shortages in electricity supply, resulting in the region cutting its output by 4 million b/d. Subsequently, in August, the hurricane Ida caused a temporary fall in crude oil production to 1.74 million b/d, or 17% of total US production in that period. The rapid increase in crude oil demand over the year drove up the crude prices to the multi-year highs, leading to spikes in inflation and fuel prices. In order to counteract these economic adversities, the world's largest oil importers decided to release part of the strategic oil stocks on local markets.

Figure 13. **Crude oil production in 2017–2021 (million b/d)**

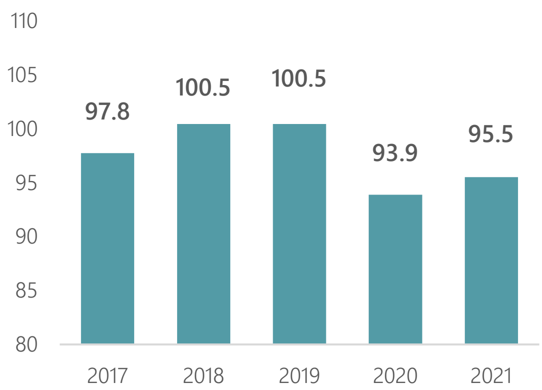
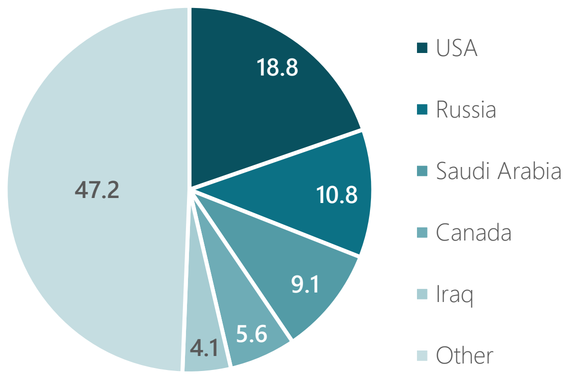


Figure 14. **Largest crude oil producers in 2021 (million b/d)**



Source: In-house analysis based on OPEC data.

In 2021, global crude oil production grew from 93.9 million b/d to 95.53 million b/d, with all major producers increasing their crude supply year on year. The United States remained the largest producer despite the continuing COVID-19 pandemic. However, the increase in US production was relatively slow (+240 thousand b/d compared with 2020), which resulted from stabilisation of financial results after significant losses reported in the previous year and very limited investments in restoring output volumes. As a result, net imports of crude oil to the US increased by 520 thousand b/d year on year. Other key suppliers of crude oil to the international market include Russia (10.78 million b/d), Saudi Arabia (9.11 million b/d), Canada (5.58 million b/d) and Iraq (4.06 million b/d).

3.3.2 Poland

At the beginning of 2021, a total of 87 oil fields were documented in Poland, including in the Carpathian mountains – 29 fields, in the Carpathian foreland – 12 fields, in the Polish Lowlands – 44 fields, and in the Polish economic zone of the Baltic Sea – 2 fields. The Carpathian oil fields are nearing depletion, while in the other areas production and enhanced oil recovery measures are continuing. In 2020, Poland's recoverable reserves of crude oil and condensate (both economic and subeconomic) amounted to 22.1 million tonnes, a decrease of 0.9 million tonnes year on year. In 2020, the largest increase in reserves was reported for the Lubiszyn field (better appraisal of the field enabled by the current production operations). Crude oil and condensate production from all fields was 911.4 thousand tonnes, a decrease of 25.3 thousand tonnes year on year. Domestic reserves cover only 3% of the total domestic demand for crude oil.

In 2021, crude oil continued to be supplied to Polish refineries (due to their geographical location, oil availability, existing supply infrastructure, and the types of units operated by the refineries) mainly from Russia. Poland also received crude oil supplies from Saudi Arabia, Nigeria, Kazakhstan, Norway and the UK.

3.4 Crude oil and gas prices

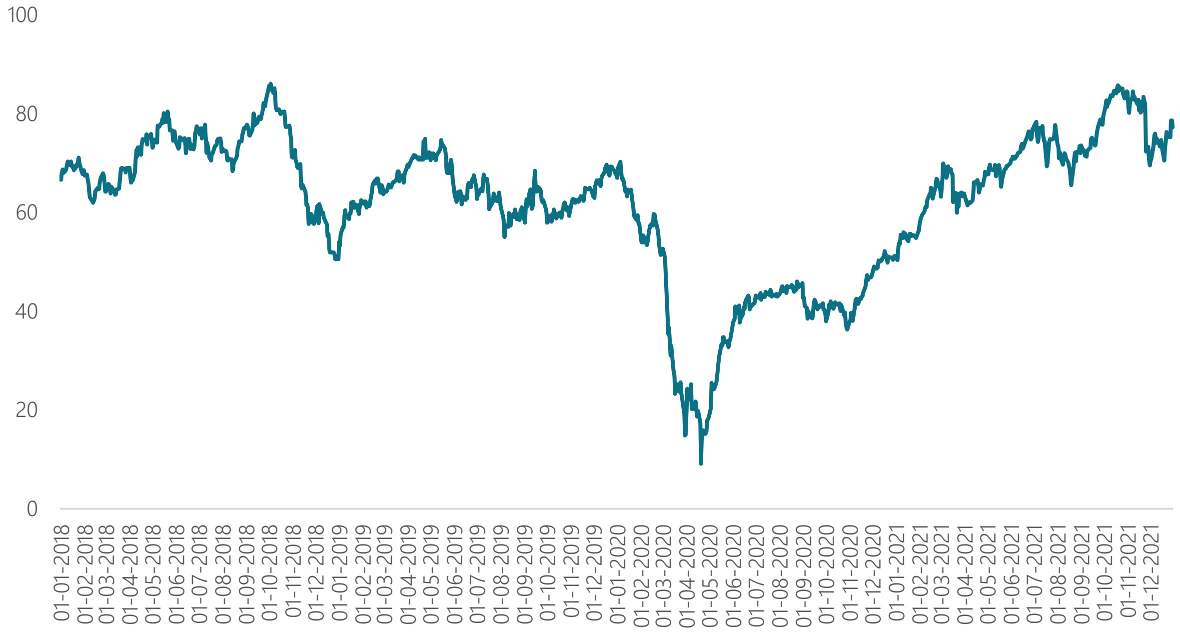
In 2021, the average price of Brent crude was USD 70.9/bbl., having increased by 69.4% on 2020. The main factor behind the price increase was the growing demand for crude oil, which, according to OPEC, was approximately 6% in 2021, and was mainly attributable to the recovery of economies after the lockdown period in 2020 and, consequently, to an estimated global GDP growth of nearly 6%. Since the lifting of restrictions in May, demand in the US, Europe, China and India has grown steadily. In 2021, the demand for crude among the top three consumers (the US, China, Europe) increased the most in the US (by 8.4% year on year).

The active policy of OPEC+ countries to monitor the supply-demand situation in the market on an ongoing basis was significant for market balancing. In July, the member countries agreed to increase their output by 400,000 b/d every month from August to December.

Also of significance is the fact that since September last year, the profitability of using oil relative to other inputs for power generation has increased as a result of high prices of natural gas and high levels of global inflation, which prompts investors to increase investments in energy commodities.

In 2021, the average Urals/Brent crude differential was USD -1.83/bbl, compared with USD -0.6/bbl in 2020. The price of the Rebco blend was rising at a slower pace than the price of Brent, due, among other things, to growing supplies from Russia, as the OPEC + policy loosened. An increase in loading programmes at Russian export ports was observed as of February. In October, the loading programme reached its highest level since the beginning of the pandemic, at 7.41 million tons, with the autumn maintenance shutdown in Russia contributing to the peak. The demand for Urals crude was affected on the one hand by the high interest in sweet crude grades in the third quarter (rising costs of hydrogen production due to high prices of natural gas), and then rising crack spreads for medium fractions turned the market's attention towards medium and high acidity crudes.

Figure 15. **Brent crude prices in 2018–2021 (USD/bbl)**



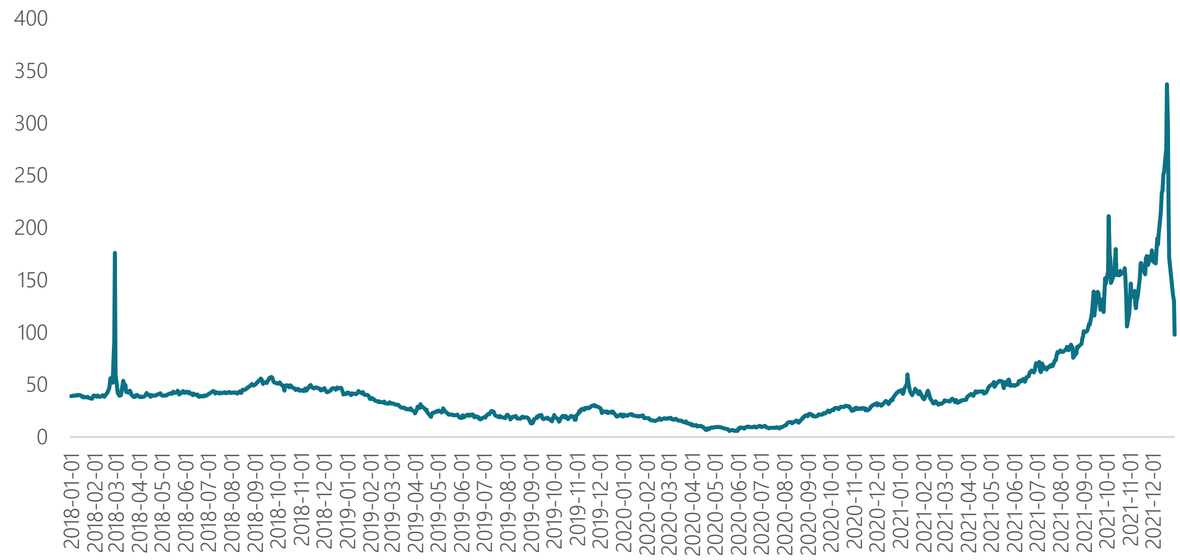
Source: In-house analysis based on Refinitiv data.

In 2021, natural gas prices were very volatile. They increased significantly year on year (at the UK National Balancing Point, the average price during the year grew by approximately 390%, to 88.1 USD/boe), a result of several factors:

- increased demand for the commodity (economic recovery);
- low level of filling of storage facilities in Europe (inventories at the beginning of October 2021, i.e. start of the heating season, were 18.1% lower year on year);
- market speculation;
- reduced supplies by Russia (at least 5.5% less than in 2020), which took steps towards certification of the Nord Stream 2 pipeline, despite the country's record-high gas output (514.8 bcm in 2021, i.e., 62.2 bcm more than in 2020);
- lower production of natural gas in Norway and the United Kingdom (effect of maintenance shutdowns on gas fields);
- lower LNG supplies to Europe (10% less than in 2020 as the Asia-Pacific market was favoured).

Throughout 2021, the gas market in Europe was under price pressures and the limited availability of the commodity lack (a result of steps taken by Russia, which led to a low level of filling of OAO Gazprom's storage facilities in Austria, Germany and the Netherlands). This situation improved slightly towards the end of 2021, but the price pressures subsided only temporarily as a result of increased LNG supplies to Europe from the US. Those difficulties in the availability of natural gas resulted in market's greater sensitivity to one-off factors (e.g., reduced generation of electricity by onshore wind farms, temporary problems at nuclear power plants).

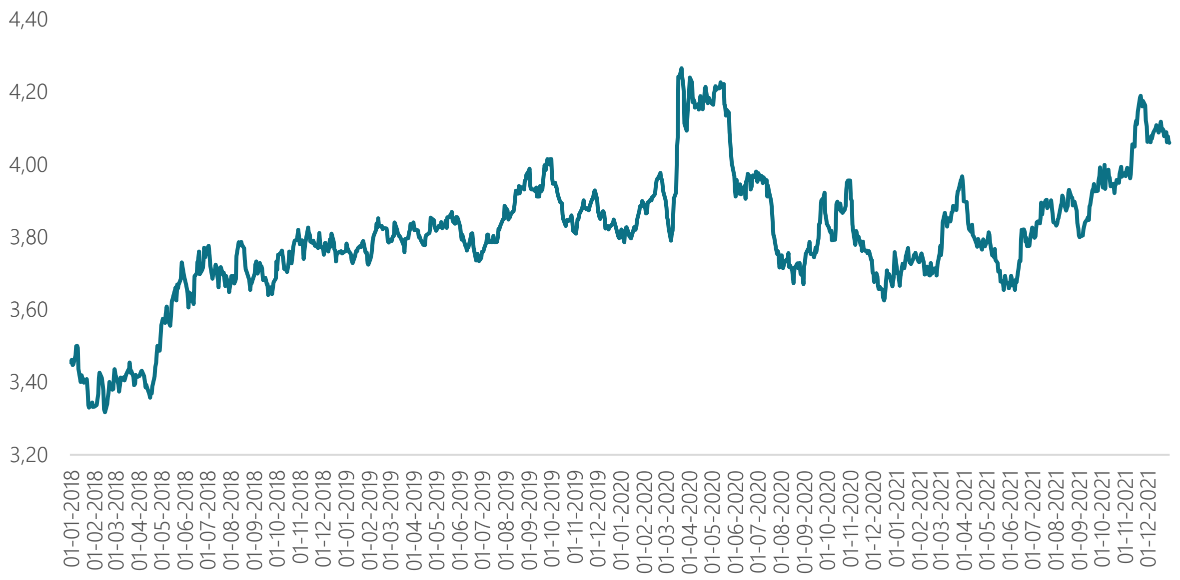
Figure 16. NBP gas prices in[4] 2018-2021 (USD/boe)



Source: In-house analysis based on Refinitiv data.

Global prices of crude oil are usually denominated in US dollars. Therefore, from the perspective of refining companies, crude prices are as important as the exchange rates of their local currencies against USD. In 2021, the Polish currency appreciated slightly against the US dollar, i.e. the average USD/PLN exchange rate fell by 0.9%, from PLN 3.8978 in 2020 to PLN 3.8647 in 2021. However, since November 2021 the exchange rate has stayed at levels above 4 USD/PLN.

Figure 17. PLN/USD exchange rates in 2018–2021



Source: In-house analysis based on National Bank of Poland data.

In addition, oil and gas prices may be affected by factors such as a decline in demand (reflecting an economic downturn), geopolitical uncertainties and armed conflicts in oil extraction areas, import and export restrictions, weather conditions and natural disasters.

[4] NBP – National Balancing Point.

3.5 Crude oil throughput

3.5.1 Capacity

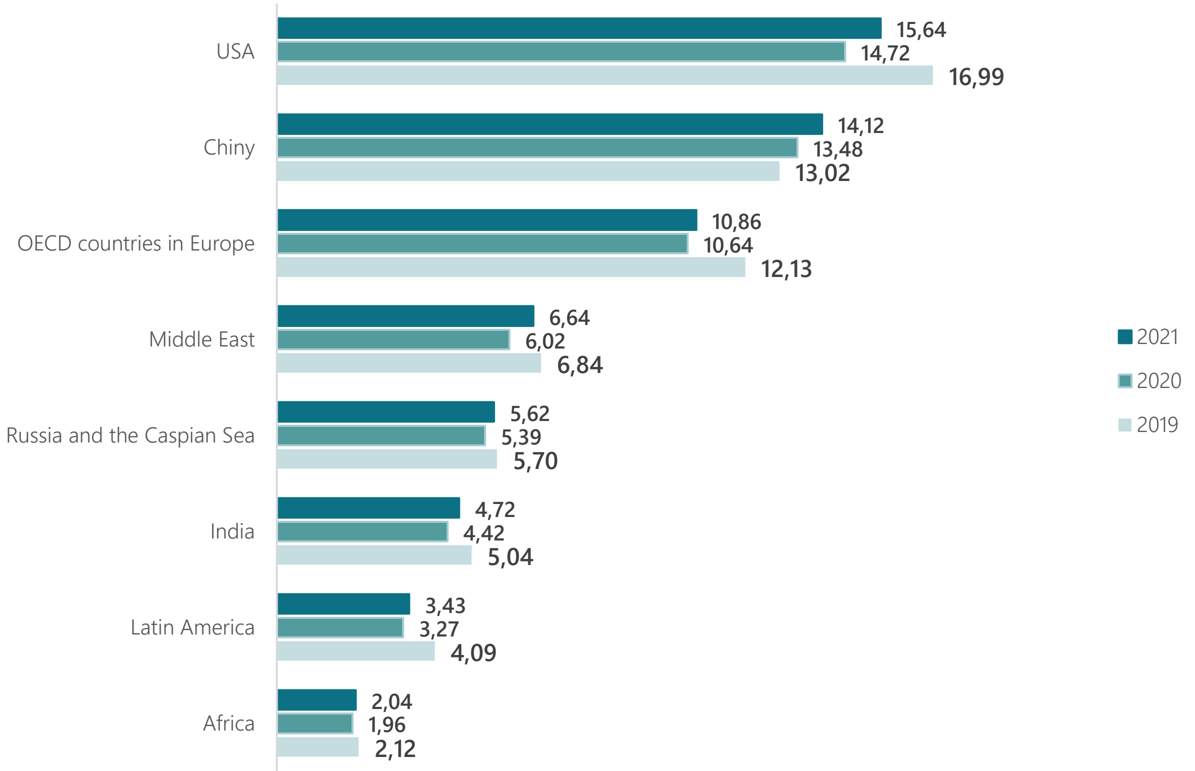
A recovery in the utilisation of global refining capacities was seen in 2021. At year end, an 11.2 p.p. year-on-year increase to 83.0% was reported by European countries, and in the U.S. the utilisation increased by 10.7 p.p. year-on-year, to 89.8%. The smallest increase was recorded in Asia, where in December 2021 the utilisation of local refineries' capacities was 2 p.p. higher year on year. In addition, refineries are becoming increasingly complex, with greater secondary processing capacities.

This long-term trend has been caused by the combination of older, simpler refineries being closed down, existing plants being extended through the addition of secondary processing capacities, and building of new, highly complex plants. This is due to growing global demand for light and 'clean' products, coupled with a gradual decline in demand for residual fuel oil. Moreover, these changes result from increasingly stricter fuel quality legislation.

Since 2012, many refineries, with a total capacity of about 2 million b/d, have been closed down across Europe. There are more than 100 refining plants in Europe with different conversion levels, but the profitability of some of them (taking into account the prevailing market conditions) is low, and as a result some plants have been or will be closed. A characteristic trend in the prevailing conditions is also the conversion of plants into biorefineries.

With plans to achieve zero-carbon economies accelerating, the projected decline in fuel demand, the growing importance of environmental issues and the use of other energy sources, it is likely that global refining capacities will decline and more plants will be shut down.

Figure 18. **Crude oil processing worldwide (million b/d)**

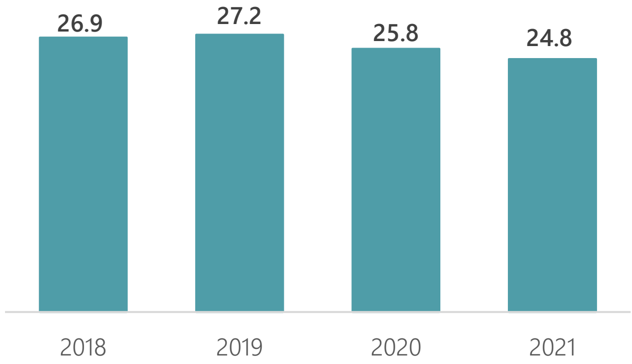


Source: In-house analysis based on OPEC data.

China was one of the few countries which increased throughput in 2021 relative to 2019. The country strengthened its position in the global refining market by launching more high-conversion capacities, thus putting pressure on traditional refinery operations in developed countries. Moreover, as shown by the IMF data, the country has been much less economically affected by the COVID-19 pandemic compared with most countries in the world, with GDP growth of 2.3% in 2020 and 8% in 2021 (the global average rates were -3.1% and 5.9%, respectively).

In 2021, the volume of oil processed in Poland was 24.8 million tonnes, i.e., 3.9% less year on year.

Figure 19. **Crude oil throughput in Poland (million tonnes)**

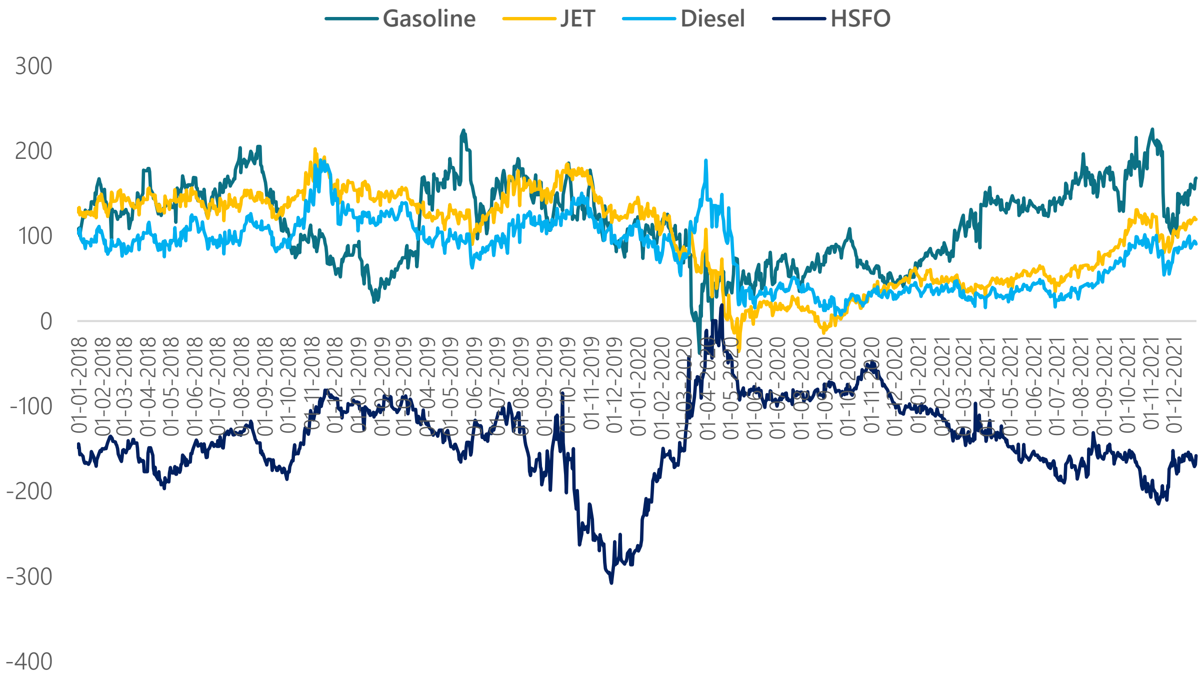


In-house analysis based on Polish Organisation of Oil Industry and Trade (POPiHN) data.

In 2021, crack spreads, i.e., differences between the product prices and the reference price of crude oil, were as follows:

- gasoline – lowest USD 65.1 per tonne, highest USD 225.5 per tonne, with average prices having increased 113.3% year on year, or USD 73.9 per tonne. The gasoline spreads were affected by lower feedstock throughput at refineries in the spring; strong seasonal growth in demand in Europe and the US; high levels of fuel exports from Europe to Africa, the US and the Mediterranean. In late August, Hurricane Ida hit the Gulf of Mexico, temporarily halting refinery throughput there and further increasing interest in European products. In November, margins were affected by concerns about product demand as a result of the emergence of Omikron, a new mutation of the virus. However, these developments have not had seriously affected the demand, according to market observers;
- aviation (Jet) fuel – lowest USD 24.9 per tonne, highest USD 130.9 per tonne, with average prices having increased 65.1%, or USD 27.2 per tonne year on year. The key driver in 2021 was the recovery of transatlantic traffic following the lifting of restrictions for vaccinated passengers arriving in the US;
- diesel oil – lowest USD 15.9 per tonne, highest USD 101.6 per tonne, with average prices having decreased 10.7%, or USD 6 per tonne year on year. In the first quarter of 2021, crack spreads were affected by the prolonged European travel restrictions and relatively large imports (in March from Russia and in April mainly from the Middle East). From April, the crack spread was recovering as a result of the lifting of travel restrictions, satisfactory rate of recovery of the global economy, and declining exports from Russia and the US (due to high diesel prices in the US, the unusual opposite direction of arbitrage was periodically observed). In October, the supply of middle distillates was reduced due to high costs of hydrogen production (record-high prices of natural gas). At least three European refineries reduced the load on or completely shut off their hydrocrackers. By the end of the year, there were signs that the market was recovering to pre-pandemic levels. Fuel stocks in the EU15 + Norway in November were the lowest since 2019, according to Euroilstock. In the US, the demand for diesel oils in December was 6% higher than before the pandemic;
- heavy fuel oil – lowest USD -154.36 per tonne, highest USD 96 per tonne, with average prices having decreased by 60.7%, or USD 58.1 per tonne, year on year. The margins were affected by the low consumption of the product for sea transport and electricity generation, particularly observed until April. As a result, stocks in Singapore and Fujairah recorded high levels in the first half of the year. A decline in stocks at both of these ports were observed from June. Already in August, stocks in Fujairah fell below the pre-pandemic level, mainly as a result of rising prices of natural gas and the growing interest in heavy fractions as an alternative energy carrier. However, there are still high stocks in Singapore (in October they increased by 7.4% month on month) and, after maintenance shutdowns in Russia concluded in November, supplies from Russia are also expected to rise.

Figure 20. Crack spreads in 2018–2021 (USD/t)



Source: In-house analysis based on Refinitiv data.

3.6 Regulatory environment

The regulatory environment of Grupa LOTOS has recently changed in a number of respects. Below are the EU regulations that have had or will have the greatest impact on the development of Grupa LOTOS.

One of the major changes that occurred in EU regulations was the presentation of the Fit for 55 package, which aims to reduce emissions by at least 55 percent by 2030 relative to 1990. The main part of this package was published on July 14th 2021, and further proposals are made on a regular basis. The proposed legislative changes will affect every area of the economy. Representatives of the European Commission pointed to proposals for financial support that will be available to all EU member states to facilitate the green transition. The actions taken by the EU are intended to influence sustainable economic growth, reduce the use of fossil fuels and spread the use of renewable energy sources, which will enable the introduction of new technologies and the development of infrastructure.

Renewable Energy Directive (RED)

The European Commission has presented an amendment to the RED Directive concerning the promotion of energy from renewable sources, which sets the general framework and mandatory targets for the minimum share of energy from renewable sources. A separate target for the share of renewable energy is defined for the transport sector (currently at 14%). As part of the public consultation process, the European Commission proposed the following changes:

- fuel suppliers will be required to achieve a 13% reduction in greenhouse gas emissions (instead of a minimum share of renewable energy as is currently the case);
- the target for advanced biofuels (produced from Annex IX waste feedstocks) will be 0.2% in 2022, 0.5% in 2025 and 2.2% in 2030. (in the aviation and shipping sectors – a multiplier of 1.2);
- the target for "non-biological renewable fuels" (e.g. hydrogen, e-fuels) of 2.6% in 2030 (in the aviation and shipping sector – a multiplier of 1.2);
- maintaining the rules on the maximum share of biofuels from food commodities – up to 1 pp above 2020, up to 7%;
- maintaining the maximum share of 1.7% for the commodities listed in Annex IX B (UCO, animal fats);
- the elimination of multipliers for advanced biofuels and electricity;
- establishing of a system for emission trading in the transport sector, following the ETS model, to be ultimately integrated into the current ETS system;
- electric vehicle energy suppliers will receive emission reduction certificates that can be purchased by fuel suppliers to meet their reduction obligations;
- abolishing Article 7a of the FQD Directive, under which the NCR target has been implemented in Poland (obligation to reduce emissions by 6% over the life cycle of fuels);

- introduction of the ON B10 standard (up to 10% FAME content) and the so-called *protection grade* (obligation to offer the B7 standard at the same time) by 2030;
- introduction of a target for the use of renewable fuels of non-biological origin in the manufacturing industry at 50% of hydrogen consumed for energy and non-energy purposes, excluding hydrogen intended for fuel production by 2030.

CO_2 emission allowance trading directives (EU ETS)

The EU Emission Trading Scheme (EU ETS) is an important regulation for the operations of Grupa LOTOS. In 2020, the European Commission launched the implementation of ETS Phase 4 for 2021–2030, which coincides with two external factors: the strong pressure of the political ambition of the European Green Deal, including negotiations to increase the greenhouse gas emission reduction target to at least 55% by 2030, and the economic crisis caused by the COVID-19 pandemic. Following the publication of Fit for 55 package, the European Commission proposed the following amendments:

- to establish a CO_2 emission allowance trading system covering emissions from road transport and buildings (parallel to the ETS currently in force), with the obligation to purchase and redeem emission allowances also applying to fuel suppliers;
- the maximum emission level (cap) in the ETS for the above sectors will be defined in 2026 in such a way as to achieve an emission reduction of 45% by 2030 compared to 2005;
- the reduction factor for the new ETS scheme for transport and buildings will be 5.15% (the number of allowances in the scheme will be reduced each year by this amount);
- the ETS for transport and buildings does not provide for free allowances (as is the case in the current ETS), although a stabilization reserve mechanism is planned (analogous to the one existing in the current ETS);
- inclusion of the shipping and aviation sectors in the existing ETS, scope:
    - 100% of the emissions from intra-EU voyages,
    - 50% of the emissions from non-EU voyages,
    - 100% of emissions occurring at berth in an EU port;
- gradual introduction of the mechanism for the shipping sector;
- 20% of verified emissions reported for 2023;
- 45% of verified emissions reported for 2024;
- 70% of verified emissions reported for 2025;
- 100% of verified emissions reported by 2026;
- increasing the linear reduction factor for emission allowances in the current ETS to 4.2% per year (from the current 2.2%), which is expected to accelerate the increase in allowance prices;
- a one-off reduction of the pool of allowances by 117 million allowances;
- changes in the market stability reserve (MSR), the tool for managing excess allowances under the EU ETS; MSR is triggered when the total number of allowances in circulation exceeds 833 million or falls below 400 million; the number of allowances in the reserve is to be limited to 400 million;
- the number of allowances transferred to MSR will represent 24% of their total number until 2030;
- updating the free allocation rules to reduce the potential need for a cross-sectoral correction factor (CSCF), increase to 2.5% as of 2026 (from 1.6% currently);
- eligibility for free allowances will also depend on taking decarbonisation measures;
- free allowances allocated to the aviation sector inside the EU will be phased out by 2026;
- strengthening the Innovation Fund by increasing the pool of allowances transferred to the Fund from 450 million to 650 million allowances + funds from cancellation of free allowances;
- introduction of a support mechanism for low-emission investments in the form of CO_2 Contracts for Difference (CCfD).

Energy and Fuel Taxation Directives (ETD)

As part of the Fit for 55 package, the European Commission has presented an amendment to the Energy Tax Directive (ETD). The main objective of the amendment is to support low-carbon alternatives to conventional petroleum-derived fuels, such as biofuels, electricity, or hydrogen. The amendment is expected to replace the volume-based taxation model with taxation based on the content of energy expressed in gigajoules (GJ). The Commission presented a draft in which it proposes the following changes, among others:

- tax rates are expected to vary depending on the use of energy and fuels:
    - full rate for fossil fuels – EUR 10.75/MJ,
    - two-thirds (2/3) of the rate for transition fuels (LPG, grey hydrogen) for a period of 10 years – EUR 7.17/MJ,
    - half (1/2) of the rate for sustainable but not advanced biofuels – EUR 5.38/MJ and the minimum rate for biofuels -– EUR 0.15/MJ;
- different tax rates depending on the purpose of the fuel (transport, construction/agricultural machinery, heating purposes);
- where the product is a blend of different fuels (e.g. petrol E5, ON B7), each component is to be taxed at its own rate;
- 10-year adjustment periods for phasing out tax exemptions for intra-EU flights (except cargo flights) and intra-EU shipping, ultimately rates as for road fuel;

- minimum rates will be adjusted annually for inflation – an adjustment based on changes in the EU-wide harmonized index of consumer prices excluding energy and unprocessed food;
- the possibility for Member States to set tax rates for fuels used for energy production, provided that their environmental impact is reflected.

The directive is scheduled to enter into force on January 1st 2023 and become applicable on January 1st 2024.

Energy Efficiency Directive (EED)

The Energy Efficiency Directive (EED) aims to reduce energy consumption to help shape a greener future. The key element is a 2030 energy efficiency target of at least 32.5%. It is to be achieved collectively across the EU. The Commission reviewed the Energy Efficiency Directive. The main proposed amendments to EED include:

- increase the energy efficiency target from 32.5% by an additional 9 p.p. by 2030 compared with the 2020 baseline projections;
- higher primary energy consumption target (39%) and final energy consumption target (36%) by 2030 (Article 9);
- the annual energy savings obligation for Member States between 2024 and 2030 will be increased from 0.8% to 1.5%;
- stricter regulations on heat metering and billing;
- requirements for transparent, publicly available national regulations for cost-sharing of heating, cooling and hot water consumption in multi-tenant and mixed-use buildings;
- monitoring the efficiency levels of new energy generation capacities.

Sustainable aviation fuels

In July 2021, the European Commission also presented a legislative initiative on sustainable aviation fuels ('ReFuelEU Aviation'), with the overriding objective to accelerate decarbonisation of the aviation sector through increased production and uptake of sustainable aviation fuels (SAF) and synthetic fuels. As part of the consultations, a draft regulation was submitted containing various options for stepping up the use of SAF in the aviation sector, including:

- obligation of fuel suppliers (entities delivering fuels to the market responsible for fuel declaration to the excise tax authorities, delivering fuels to EU airports) to ensure a minimum share of sustainable aviation fuels (SAF) and a minimum share of synthetic aviation fuels (defined as renewable fuels of non-biological origin in accordance with the existing RED directive) delivered to EU airports:
  - 2% SAF from 2025,
  - 5% SAF and 0.7% synthetic fuels from 2030,
  - 20% SAF and 5% synthetic fuels from 2035,
  - 32% SAF and 8% synthetic fuels from 2040,
  - 63% SAF and 28% synthetic fuels from 2050.
- fuel suppliers report on an annual basis the volumes of aviation fuels and the volumes and types of sustainable aviation fuels delivered to EU airports, together with the information on emission reductions achieved;
- each Member State sets penalties for missing targets; for fuel suppliers the penalty is to be at least twice the price difference between traditional jet fuel and SAF multiplied by the volume missing the target; the same applies to synthetic fuels.

These obligations for fuel suppliers are to enter into force on January 1st 2025.

Zero-emission transport

The main objective of the package is to introduce incentives for increasing the number of zero-emission vehicles, and the European Commission has therefore:

- revised CO_2 emission standards for passenger cars, delivery vehicles and heavy goods vehicles;
- revised the Alternative Fuels Infrastructure Directive.

In 2020, new CO_2 emission standards for passenger cars came into effect (currently at 95 g of CO_2/km). However, the Commission has commenced work on revising these emission standards for passenger cars, delivery vehicles and heavy goods vehicles.

The main objectives are to:

- increase the emission reduction target for new passenger cars by 55% and for delivery vehicles by 50% by 2030 (compared with 2021 emissions);
- mandatorily reduce emissions from new vehicles by 100% by 2035, which means a de facto ban on the sale of combustion vehicles in the EU.

The revision of the Alternative Fuel Infrastructure Directive is also a step towards increasing the share of zero-emission transport. The directive currently provides for the development of infrastructure comprising charging points for electric vehicles, hydrogen refuelling points, and CNG/LNG refuelling points. It sets out minimum requirements for the deployment of alternative fuels infrastructure, to be implemented by means of member states' national policy frameworks.

The draft revision proposes to:

- amend the existing definition of alternative fuels, by breaking them down into:
  - alternative fuels (electricity, hydrogen, ammonia),
  - renewable fuels (biofuels) and
  - alternative fuels of fossil origin (PLG, CNG, LNG);
- impose an obligation to provide a minimum number of charging points for passenger vehicles on the TEN-T (Trans-European Road Network) road network at a distance of no more than 60 km on both sides of the road; in addition:
  - by 2025, the minimum power of a station is to be 300 kW, and the minimum power of a single charging point at a station is to be 150 kW,
  - by 2030, the minimum power is to be 600 kW for a station and 150 kW for a single point;
- impose an obligation to achieve cumulative power available at charging stations of a minimum of 1 kW for each nationally registered electric vehicle and a minimum of 0.66 kW for each registered hybrid vehicle;
- launch such number of charging stations for passenger cars outside TEN-T which will ensure unlimited free movement of electric vehicles – each Member State will determine the number based on the estimated number of electric vehicles;
- impose an obligation to provide a minimum number of charging points for heavy goods vehicles on the TEN-T network at a distance of no more than 60 km on both sides of the road, in addition:
  - by 2025, the minimum power of a charging station is to be 1,400 kW and the minimum power of a single charging point at a given station is to be 350 kW,
  - by 2030, the minimum power is to be 3,500 kW for a station and 350 kW for a single point;
- in addition, impose an obligation to install charging points on publicly available car parks and parking places;
- impose an obligation to enable electronic payments at charging points;
- impose an obligation to provide by 2030 a minimum number of hydrogen refuelling stations with a throughput of at least 2 t/day and a pressure of 700 bar (and the obligation that the station can serve both passenger vehicles and heavy goods vehicles), at a distance of at least 150 km along TEN-T roads;
- impose an obligation to provide at least one hydrogen refuelling station at each urban node of the TEN-T network by 2030;
- impose an obligation to provide for the refuelling of liquid hydrogen at stations located at distances of no more than 450 km;
- electronic payments must be enabled at hydrogen refuelling stations;
- impose an obligation to ensure an adequate number of LNG stations to navigate the road network and TEN-T ports from January 1st 2025; no more specific obligations;
- the manner in which the obligations are to be fulfilled will be determined by each Member State on its territory.

Gas Package

On December 15th 2021, the European Commission published the Hydrogen and Decarbonised Gas Package and a draft Regulation on the reduction of methane emissions in the energy sector.

The Gas Package consists of:

- Draft Directive on common rules for the internal markets in renewable gases and natural gas and hydrogen with annexes,
  - Draft Regulation on internal markets in renewable gases and natural gas and hydrogen (recast) with annexes.

Definition and certification of "low-carbon" gases:

- the Commission proposes to introduce a definition of "low-carbon" gases and low-carbon fuels, whereby low-carbon gases and fuels must meet a GHG reduction threshold of 70%;
- rules were also introduced to certify low-carbon gas and its derivatives to ensure that emission reductions from their use are at least 70%:
  - Member States will require operators to demonstrate compliance with the 70% threshold by providing "reliable information" and through a "mass balance" system, regardless of whether the fuels are produced in the EU or imported;
  - operators would also be required to provide evidence that an appropriate and independent level of audit of the information submitted has been carried out to verify that the systems in place are accurate, reliable and fraud-proof;
  - the EC will adopt delegated acts by the end of 2024 to define a methodology for assessing emission reductions from low-carbon fuels;
  - the certification rules are intended to complement the certification system for renewable fuels and gases proposed in the RED III project.

Reduced input tariffs:

- to encourage the introduction of renewable and low-carbon gases into the EU gas network, the Commission proposes to grant a 75% discount for such gases on the input tariffs;

- the Commission also proposes to eliminate cross-border tariffs for such gases, including at entry and exit points to third countries, as of January 1 of the year following the adoption of the new Regulation. In addition, cross-border tariffs will not apply to the special hydrogen network in the future.

Limiting long-term natural gas supply contracts:

- the Commission proposes that no long-term natural gas supply contracts be entered into where contract terms would extend beyond 2049.

Joint gas procurement:

- Under the draft, Member States particularly affected by the energy price surge will be able to set up a mechanism for joint strategic stock ordering by transmission system operators, reporting in advance to the Commission a range of information such as the amount of gas they plan to purchase or the expected costs and benefits;
- Member States are to analyse their gas storage levels and the potential risks to security of supply within the framework of the joint regional risk assessment. Where risks are identified, Member States should be able to implement countermeasures from a range of options, such as minimum stockholding obligations for gas storage users and tenders that encourage reservations of storage capacity.

Hydrogen market:

- To ensure a competitive, open and dynamic hydrogen market in the EU by 2030, the Commission proposes to establish an EU-wide 10-year hydrogen network development plan and to create a European Network of Hydrogen Network Operators (ENNOH);
- in terms of "blending" natural gas with hydrogen, the Commission proposes a European cap on cross-border interconnection points to limit the risk of market segmentation. From October 1st 2025, transmission system operators would have to accept cross-border gas flows with up to 5% hydrogen content (by volume).

Other initiatives under the European Green Deal

Taxonomy

In June 2020, the EU endorsed a classification system for environmentally sustainable economic activities (known as the 'taxonomy'), Based on it, it will be possible to determine which type of activity is sustainable (in other words leads to climate neutrality). This classification is intended to redirect capital flows from the private market and EU programmes to investments that fit with the goals of energy transition and achieving climate neutrality. The effect of the regulation will most likely render fossil fuel projects facing limited access to favourable financing, while projects including decarbonisation will have access to capital on preferential terms.

EU hydrogen strategy

In July 2020, the European Commission published the EU Hydrogen Strategy, describing measures intended to help the EU achieve climate neutrality by 2050. The Strategy places the greatest focus on hydrogen production using emission free technologies, such as water electrolysis. The strategic priority is to support the production and use of hydrogen as an important tool for decarbonisation, particularly in energy-intensive industries or freight transport, and for stabilising the power system in view of the growing share of renewable generation sources (the role of hydrogen in energy storage). During the transition phase, low-carbon or 'blue' hydrogen (produced from methane based on a CCS process) and other low-carbon generation technologies will also be supported.

Mobility Strategy

Another previously announced change is the Mobility Strategy. It sets out an action plan with concrete policy measures, divided into 10 key areas that the Commission will work on in the coming years. Key elements of the Mobility Strategy:

- its primary objective is to reduce emissions from transport, which currently account for more than one-fourth of CO_2 emissions in the EU;
- to place at least 30 million zero-emission vehicles on the roads;
- to double rail freight traffic, triple high-speed rail traffic and complete the trans-European transport network with state-of-the-art traffic management systems, with the target being 100 climate neutral cities by the end of the decade;
- to ensure that intercity journeys under 300 km are carbon neutral by 2030, with rail as the preferred mode of transport for distances below 1,000 km;
- aviation: zero-emission aircraft market-ready by 2035; the draft defines fuel targets for the aviation industry: the share of renewable and low-carbon fuels should reach 5% by 2030 and increase to over 60% by 2050, with road and rail transport expected to rely on a mix of electricity and hydrogen; the Commission is seeking to change the exhaust emission standards for passenger cars and heavy goods vehicles in order to encourage transition to non-emission vehicles.

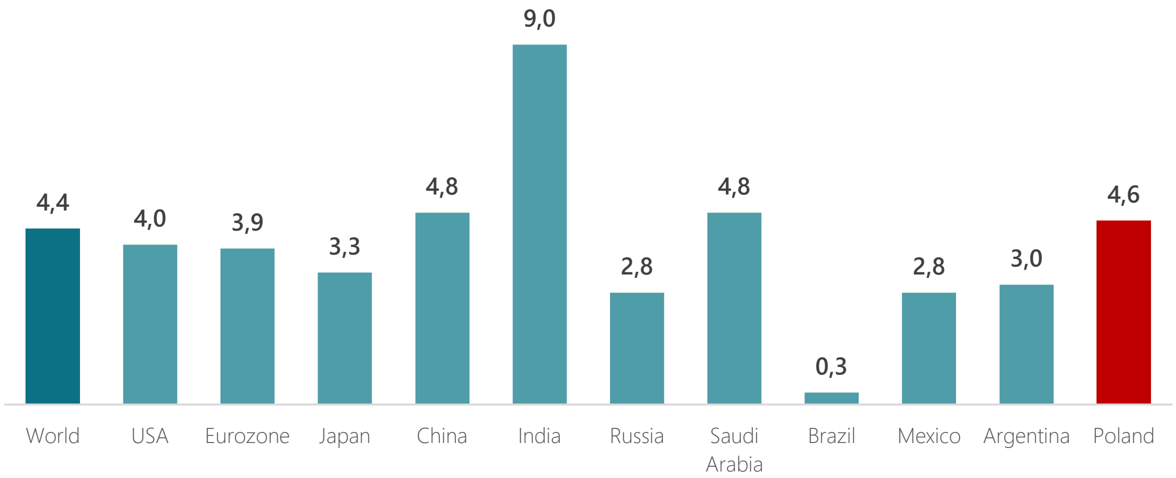
Strategy to reduce methane emissions:

This strategy sets out measures to reduce methane emissions in Europe and globally. It sets out legislative and non-legislative measures in the energy, agriculture and waste sectors, which account for approximately 95% of global human-related methane emissions. To reduce methane emissions in the energy sector, a requirement will be proposed to improve leak detection and repair on gas infrastructure and regulations will be considered to prohibit routine gas flaring and venting practices. The Commission will engage in dialogue with its international partners and explore possible standards, targets or incentives for energy imports into the EU and tools for their enforcement.

3.7 Expected developments in the external environment in 2022

In its January 2022 report, the International Monetary Fund (IMF) forecast that global gross domestic product would grow by 4.4% in 2022, that is slightly less than in 2021 (5.9%), with the growth trajectory expected to continue to be rapid, taking into account the global economic recession in 2020 (-3.1%) caused by the COVID-19 pandemic. The Asia-Pacific region is expected to register high growth in 2022 of 5.9% (including 4.8% in China). India is expected to remain one of the fastest growing economies in the world (expected GDP growth of 9%). As in previous years, developed countries will continue to experience lower economic growth, according to IMF projections (total growth of 3.9%). The US, Eurozone and Japanese economies are expected to grow by 4%, 3.9% and 3.3%, respectively. According to IMF forecasts, Russia is also expected to grow relatively slowly (2.8%), as are South American countries, including Brazil (0.3% growth), Mexico (2.8%) and Argentina (3%). Taking into account the 2020 GDP contraction and the subsequent economic recovery in 2021, Poland will be among the EU's fastest growing economies, with an expected growth rate of 4.6%. In contrast to previous years, the IMF predicts that economic growth in Europe will be fairly even, with all EU countries expected to grow by 4% (with the highest growth rate in Spain at 5.8%) and the eurozone countries at 3.9%[5].

Figure 21. **Projected economic growth rate in 2022 (%)**



Source: In-house analysis based on IMF January 2022 data.

International organizations forecast that in such an environment, oil demand will increase by 3.3 million barrels per day in 2022. This type of economic environment would, within two years, bring the oil market back to levels comparable to those seen in previous years. While this growth will not be evenly distributed (and will be concentrated mainly in Asia-Pacific countries, including most notably China and India), the economic recovery means that all regions will see an increase in fuel demand. Nevertheless, the global level of demand for fuels and various types of energy carriers continues to be influenced by the COVID-19 pandemic (possible further restrictions), as well as the speed of economic recovery, including the impact of high inflation. Even more significantly, however, the outbreak of war in Ukraine means that both in terms of economic growth and oil consumption, the situation has become highly unpredictable, and recent forecasts will require significant, most likely downward, revisions.

In terms of oil production, OPEC+ countries will continue to play a key role in 2022 as they slowly rebuild crude output. However, it is still not at a level adequate to the pace of economic recovery. As a result, in 2022 crude oil stocks in OECD countries may fall to the lowest level since 2000, which will contribute to price fluctuations on the markets. Against this backdrop, large production increases can still be expected in the US, Canada and Brazil, as well as Norway (favourable pricing conditions). The political and social situation in Libya, Kazakhstan, Venezuela and the Middle Eastern

[5] World Economic Outlook, International Monetary Fund, October 2021.

countries, primarily Iran, will be an important factor affecting the availability and price of crude oil. Discussions concerning Iran's nuclear programme may result in the conclusion of a new agreement and thus an increased presence of Iranian oil on the international market.

A significant challenge for the entire refining industry in Europe will be new regulations introduced at the European Union level. In July 2021, the European Commission proposed a new legislative package (Fit for 55) that would ultimately accelerate the transition away from fossil fuels. The entry into force of many of the regulations of this package may adversely affect the operation of refineries due to, among other things, the planned introduction of additional tax burdens on diesel fuel, reduction of emissions in transport (inclusion of transport in the EU ETS system), or promotion of sustainable aviation fuels.

The situation of refineries in Europe in 2021 was influenced both by the demand for fuel (the effect of introduced restrictions and the economic recovery) and prices of natural gas (high prices of the commodity adversely affected refinery margins). Given the expectations of continued high prices of natural gas throughout 2022, refining margins can be expected to continue to be affected by this factor. Nevertheless, the economic recovery is causing analyst agencies to point to a further increase in global refinery throughput of 3.7 million barrels/day (2021 throughput increased by 3.1 million barrels/day). Strong competition from plants in the Middle East, Asia Pacific and Russia may continue to be a major challenge for refineries in Europe. In addition, the Dangote refinery in Nigeria is expected to be placed in service in 2022, with target capacity of 650,000 barrels/day. This development will lead to large and profound changes in fuel trade, most notably a reduction in fuel supplies to Africa. In Europe, the market is characterised by high availability of gasoline relative to diesel oil; moreover, a possible peak demand for transport fuels in Europe (the effect of growing share of electric vehicles in the market) will adversely affect the resulting crack spreads on middle distillates. As a result, refineries which export a large proportion of their production (mainly in Western Europe) are threatened.

3.8 Impact of war in Ukraine on the LOTOS Group

The outbreak of war in Ukraine has an enormous impact on the socio-economic situation in Central and Eastern Europe and the world. Due to the hostilities taking place in Ukraine, it is very difficult or outright impossible to conduct business activities in the country. At the same time, Russia's aggression, actively supported by Belarus, has contributed to the isolation of these countries by limiting or completely breaking off trade relations with their partners – not only in the form of top-down sanctions imposed by the governments of many countries, but also through widespread social ostracism and voluntary decisions made by market participants. At this point, it is very difficult to predict the medium- and long-term effects of the war.

The high uncertainty as to further developments is reflected in financial and commodity markets, including highly volatile prices of crude oil and natural gas – in the case of Brent crude oil, prices momentarily approached 140 USD/bbl (vs 77 USD/bbl at year-end 2021), while natural gas on the Dutch TTF exchange set new all-time highs in March, momentarily exceeding 300 EUR/MWh (compared with 60 EUR/MWh at year-end 2021). Due to the very low interest Russian oil among potential buyers, the Brent/Urals differential is very high, at around USD 30/bbl.

The Group continuously monitors the situation, including on the market of energy commodities and petroleum products, in preparation for possible discontinuation of processing of Urals crude oil. Production at the Gdansk refinery is currently on schedule, with product distribution to the market uninterrupted.

The Group does not conduct any direct operations in Ukraine, Belarus or Russia. Sales to areas affected by the hostilities do not represent a material share in the volume of the LOTOS Group's export sales.

Fuel stations are currently experiencing increased demand for fuel products. This, combined with a very high logistical load, translates into incidental disruptions and limited fuel availability at individual locations. To ease queues at stations, the Company has introduced a temporary restriction on refuelling, with fuel sales to jerry cans prohibited. However, it should be emphasized that the situation is under control and Poland has adequate reserves of both feedstock and petroleum products. The Company has its own mandatory stocks and reserves held at the Government Strategic Reserves Agency, which may be released with the consent of the state authorities in order to secure supplies and thus ensure the country's energy security.

As of the date of issue of these financial statements, the risk of disruption of supply chains has not materialised, and the flow of crude oil remains uninterrupted. The Group prepares for various scenarios, mainly through diversification of supplies from various directions, and these diversification efforts are an ongoing process. Operationally, the Group is prepared to pursue a variety of alternatives.

The refinery's technological configuration, combined with its location advantages (coastal location), allows the selection of crude oil types from various global directions, ensuring high flexibility of the Group's operations and the ability to quickly adapt to rapid changes in exetrnal conditions. In the past, the Group has already had an incident of disrupted pipeline deliveries of crude oil from Russia during the so-called "chloride crisis", when deliveries had to be made by sea. The disruption did not affect the continuity of production processes and performance of sales contracts.

The Group has planned to have a lower demand for crude in March and April 2022 due to the maintenance shutdown at the refinery. Supplies contracted for this purpose are secured and are being delivered.

As of the date of issue of these financial statements, the Group performs all commercial contracts on an ongoing basis.

Credit exposure of the LOTOS Group to Ukrainian, Belarusian and Russian entities is immaterial. Large-scale operational disruptions that could potentially entail liquidity constraints for certain entities may also have an adverse impact on the credit quality of various actors along the supply chain. As part of its credit risk management process, the Group monitors market conditions and information regarding its counterparties that may indicate deterioration in their financial condition and adjusts the structure of credit limits to the current situation. Based on its analyses, the Group has not identified any need to update the assumptions underlying the assessment of expected credit loss.

In addition, following the introduction of the Charlie-CRP state of cyber alert in Poland by the government, the Group also carefully analyses the risk of cyber attacks through constant monitoring of its ICT infrastructure.

4 Grupa LOTOS S.A. strategy for 2017–2022

4.1 Vision and key strategic objectives

The key objectives of the Grupa LOTOS Strategy are the Group's stabilisation and sustainable growth. As Poland's leading company and a major energy group, Grupa LOTOS S.A. strives to position itself as:

- a producer of premium quality fuels and chemicals, with the optimal degree of vertical integration,
- a provider of specialist logistics and maintenance services, and
- a leader of innovative implementations within its core business, designed to promote sustained growth in Grupa LOTOS S.A. shareholder value.

The Company pursues five strategic objectives:

- **effective use of assets throughout the value chain:** including optimum use of production licences, further technological optimisation of the refinery, launch of new products and alternative fuels, and commitment to quality;
- **consistent and repeatable reduction of operating expenses and optimisation of margins** along the value chain;
- **readiness to develop and embrace innovation** based on dedicated funding, an advanced model of cooperation with research institutions and creative engagement of employees;
- **flexible response to risks**, perceived also as potential business opportunities;
- **commitment to fostering and developing talent within the organisation, improving safety and security** (across OHS, infrastructure, and IT), and **coherent standards of corporate social responsibility.**

The Strategy is to be pursued within two time frames. In 2017–2018, the main goals were to stabilise cash flows, reduce debt, and effectively implement the ongoing investment projects.

In 2019–2022, the Company plans to pursue a new investment programme based on development of selected production assets, building an efficient upstream asset portfolio, further organic expansion of the retail chain and implementation of innovative projects.

As at the date of issue of this report, the Company was involved in work related to the planned acquisition of Grupa LOTOS S.A. by PKN Orlen S.A. (for more details, see Section 4.8).

Key metrics to assess the implementation of the LOTOS Group Strategy 2017-2022:

- doubling the average annual LIFO-based EBITDA in 2019–2022,
- reduction of net debt/LIFO-based EBITDA to or below 1.5,
- capital expenditure at PLN 9.4 billion over the entire Strategy period,
- acquisition and maintenance of 2P[6] crude oil and natural gas reserves at over 60 million boe, with an average annual hydrocarbon production volume in 2019–2022 at 30-50 thousand boe/d,
- increase in the number of service stations to 550,
- low accident rate (LTIF[7] <3).

[6] 2P reserves – proved and probable, according to the SPE classification.
[7] LTIF – Lost Time Injury Frequency rate.

4.2 Current strategy implementation progress

Strategy outlook for 2019–2022, key strategic metrics and performance against the metrics:

Source: the Company.

Average annual LIFO-based EBITDA:

- 2021 result above strategic assumptions due to optimization of throughput processes at the LOTOS refinery, gradual improvement of market conditions and surge in natural gas prices

Net debt/LIFO-based EBITDA:

- net debt to LIFO-based EBITDA maintained significantly below the strategic target of 1.5x

Crude throughput:

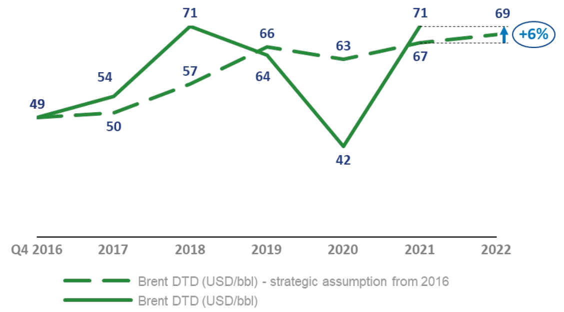
- maintaining crude throughput at the same high level despite significant market turbulence triggered by the COVID-19 pandemic.

2P reserves and hydrocarbon production:

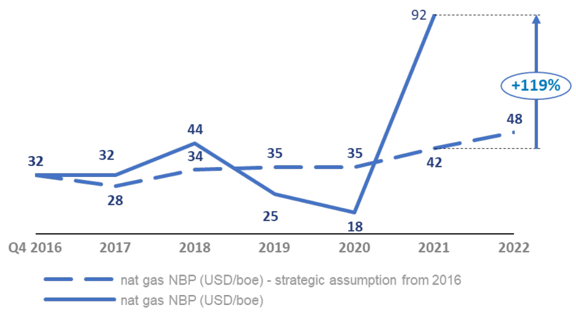
- 2P reserves (69.2 million boe) currently above the strategic target of 60 million boe, achieved mainly thanks to active efforts on the Norwegian Shelf
- lower than expected oil and gas production volumes due to delays (against the schedule) in launching production from the YME and B8 projects.

Macroeconomic assumptions underlying the Grupa LOTOS Strategy for 2017–2022 vs actual petroleum commodity prices and key product cracks

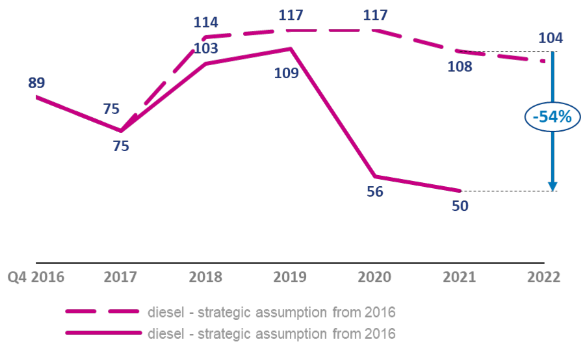
Crude oil (USD/bbl)



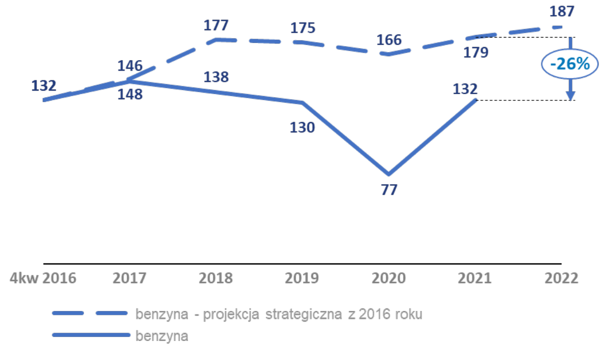
Natural gas (USD/boe)



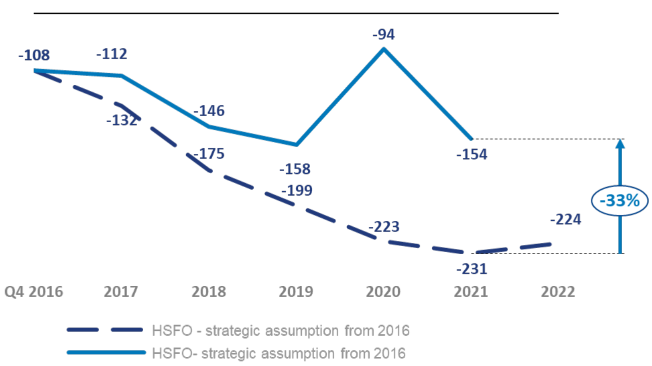
Product crack spreads – diesel oil (USD/t)



Product crack spreads – gasoline (USD/t)



Product crack spreads – heavy sulphur fuel oil



4.3 Effective use of assets along the value chain

Exploration & Production segment

As at the end of 2021, Grupa LOTOS S.A.'s total 2P oil and gas reserves amounted to approximately 69.2 million boe, above the assumed strategic metric.

In 2021, LOTOS Group's hydrocarbon production averaged 17.3 thousand boe/d (a decrease of 15% year on year). The decline was attributable to a number of factors, including production shutdown (maintenance shutdown in the third quarter) on the Norwegian Sleipner and Utgard fields, as well as temporary technical difficulties (water breakthrough) on the Utgard field.

Production (start-up phase) from the YME field commenced in October 2021. The planned output from the field is approximately 5,000 boe/d (on average over five years of production) for LOTOS's share in the project. The postponement of the start of production at the YME field from 2020 to 2021 was due to, among other things, the pandemic, which had an impact on the availability of personnel, and the extended duration of the conversion of the Maersk Inspirer rig at the Egersund shipyard.

Polish fields (B3 and B8), on the other hand, saw production rise to 5.7 thousand boe/d.

Refining segment

The volume of crude oil processed by the Grupa LOTOS S.A. refinery in 2021 was approximately 9.9 million tonnes, with the Company's installed refining capacity utilised at 94.3%

Stability and high operational availability of the refining units, with the refinery's complexity expanded by the EFRA Project (Nelson Complexity Index of 11.1), allowed the Company to flexibly optimise the stream of petroleum products to adjust yields to changeable and unpredictable market conditions prevailing in 2021, which resulted in improved economic viability of crude oil processing.

As part of the investment projects, in 2021 work was under way under to replace Claus furnaces at the LOTOS refinery to improve the efficiency, reliability and safety of hydrogen sulfide combustion. The project is due for completion in early 2023.

The Company carried out preparatory activities for a project to expand LPG storage and loading capacities to about 1,200 tonnes per day with the use of rail or truck loading facilities.

Another project implemented in 2021 was the expansion of the rail tank loading facility.

At the beginning of 2021, the Company launched the Pure H2 project involving the construction of a hydrogen purification unit and a system for supplying hydrogen to tube trailers (vehicles used to haul compressed hydrogen). The project is scheduled for completion in 2023.

The Hydrocracking Base Oils (HBO) project received approval to proceed to the implementation phase, and design work with prime contractor Kinetics Technology began in 2021.

In its forecasts regarding future development of the fuel market, CONCAWE, an association of European refineries, presented a vision of the 2050 model refinery as an energy hub relying on renewable energy sources. The first stage of a refiner's development in that direction would be to achieve operational excellence. In the second stage it would bring more low-carbon biocomponents into its product mix, and in the next stage it would become an energy hub relying on biomass and waste conversion processes and capturing CO_2, thus advancing a circular, environmentally neutral economy.

Grupa LOTOS has been consistently pursuing that transition path through a range of major development projects. In the first stage, they were milestones towards the refinery's operational excellence – the 10+ Programme and the EFRA Project. In 2021, the Company continued analytical and preparatory work under projects identified in its 2017–2022 Strategy as those that could strengthen its competitive position on the market:

- HBO project – hydrocracking oil unit for the production of Group 2 and 3 base oils

In 2021, a decision was made to implement the HBO project. This direction of the refinery's technological development is the diversification of operations into new, non-fuel products and the efficient management of residues from the MHC hydrocracking unit, or hydrovax. The HBO project addresses the current challenges faced by refineries focused on motor fuel production.

The project will enable the launch of production and sales of high-margin Group 2 and 3 base oils. The scope of the project includes the construction of a hydrocracking plant using catalytic dewaxing and hydrogenation processes, feedstock and product tanks, inter-process pipelines and a power supply station. Other planned works include the adaptation and upgrade of existing facilities on the refinery premises, interlinked operationally or technically with the new units.

Its annual output will comprise over 400 thousand tonnes of Group II base oils and several dozen thousand tonnes of fuel intermediates. Under the current schedule, all new units and facilities are expected to be commissioned and operational in the first half of 2025. The main contractor is KT – Kinetics Technology S.p.A.

- CCGT plant project

The CCGT plant project is in line with the envisaged transition in the mix of energy sources to expand the refinery's potential and for commercial purposes. Based on a letter of intent signed between Grupa LOTOS, PKN Orlen and Energa on November 2nd 2020, the companies are looking into the possibility of joint construction of a CCGT unit in Gdańsk, to be completed by July 2026. Possible use of this CCGT unit for the Company's own purposes, exploiting the partners' expertise and the project being an investment in the Company's energy security, all speak for undertaking further analysis of the project feasibility. On December 29th 2021, an annex to the letter of intent was signed, extending the deadline for the parties to enter into relevant agreements until not later than December 31st 2022.

At the same time, as part of its Strategy for 2017–2022, Grupa LOTOS is developing projects related to alternative fuels, in line with the second stage of CONCAWE's model refinery transformation. Their objective is to diversify the Group's business and build competitive advantages in new segments of the energy market, given that traditional fossil fuels are expected to play a gradually less prominent role in Europe within a dozen or so years.

Grupa LOTOS is pursuing research and development projects focused on environmentally-friendly fuels of the future, i.e. electricity and gaseous fuels: CNG (compressed natural gas), LNG (liquefied natural gas) and primarily hydrogen, which can be used in transport, as well as in refining and for energy storage.

The Grupa LOTOS refinery is Poland's leading producer of hydrogen, with an output of approximately 16.5 tonnes/hour. The HRU unit will increase this capacity by an additional 1 tonne/hour.

The Company's response to the changing business environment and market trends is a project to construct a large-scale hydrogen production facility.

- Green H2 project – large-scale green hydrogen production facility

The first step under the Green H2 project is to build a pilot plant, i.e. a smaller-scale electrolysis unit, extended to include functionalities such as hydrogen storage and fuel cells. The facility would be a target configuration for the large-scale project, designed not only to deliver hydrogen for the refinery's needs, but also to enable Grupa LOTOS S.A. to gain a share in the power capacity market, render services on the balancing market and, in the future, provide services to wind farm operators on the Baltic Sea. The Grupa LOTOS refinery has a uniquely advantageous location for potential cooperation with the operators of planned offshore wind farms. The geological structure of its location would allow it to store hydrogen inside salt caverns for subsequent use in electricity production during periods of increased demand. The project partner is Polskie Sieci Elektroenergetyczne, the operator of the Polish transmission system.

The Company intends to collect electricity via the transmission network, separate hydrogen through an electrolysis process and store it inside caverns. During periods of increased grid demand, e.g. in the event of power shortages (which are becoming a normal occurrence on Western markets with a strong RES exposure), the Company would flexibly use the stored hydrogen and generate electricity.

In the electrolysis process, the Company would use renewable energy sources to obtain green hydrogen, which would help it bring down CO_2 emissions and meet the National Indicative Target for motor fuels production.

The Company has already selected strategic and technical advisers and completed preliminary analyses of the Green H2 project, under which it plans to build a large-scale green hydrogen production facility. It has also applied for funding to the EU Innovation Fund.

- Pure H2 project

In order to power hydrogen fuel cells driving electric motors, hydrogen of very high purity is needed (99.999%). Therefore, Grupa LOTOS is implementing the Pure H2 project to build a hydrogen purification and distribution unit, as well as two hydrogen refuelling points.

The Company's target production rate is approximately 160 kg of pure hydrogen per hour. The value of the project is close to PLN 40 million, of which 20% will be covered with EU funds under the Connecting Europe Facility (CEF).

Grupa LOTOS is also involved in implementing the Clean Transport Package and in the Climate Ministry's work on a national hydrogen strategy, while exploring possible hydrogen applications – primarily in urban transport. The Company has signed letters of intent to supply hydrogen and refuelling infrastructure with the municipalities of Rzeszów, Gdynia, Tczew and Wejherowo, and a letter of intent with Toyota Motor Poland and Autosan, a bus manufacturer working to develop a hydrogen-powered vehicle and intending to test Grupa LOTOS's hydrogen for powering that vehicle.

- VETNI Project

Research and development project carried out in consortium with the Institute of Energy and the AGH University of Science and Technology in Kraków, with an aim to construct a pilot installation for highly efficient hydrogen production based on solid-oxide electrolyzers (the project obtained co-financing from the National Centre for Research and Development).

The project will include R&D work focused on the development, construction and testing under actual operating conditions of a system with an electrolyser integrated into the refinery process, which will supply process steam for hydrogen production. The electrolyser will be designed to produce approximately 16 kg of 99.999% pure hydrogen per day, an amount sufficient to fill the tanks of several hydrogen-powered cars.

The project is co-financed by the European Union under the Intelligent Development Operational Programme 2014–2020, Measure 1.1 R&D projects of enterprises, Sub-Measure 1.1.1 Industrial research and development work implemented by enterprises.

Depending on market factors, the project portfolio may also include construction of a motor gasoline complex, an olefins and ETBE complex, a marine petroleum products handling terminal on the Martwa Wisła river or a waste oils unit.

Retail

At the end of 2020, the LOTOS retail chain comprised 520 service stations, including 327 CODO and 193 DOFO locations. The chain comprised 30 Motorway Service Areas, offering a wide range of non-fuel products.

As one of Poland's leaders in advancing electric mobility, Grupa LOTOS S.A. launched a pilot network of 12 EV charging stations between the cities of Gdańsk and Warsaw, along the A1 and A2 motorways. In line with its strategy, the Company plans to continue to expand its EV charging network under the LOTOS Blue Trail project. More charging stations will be built along Poland's main routes in order to extend the distance that can be covered by EV motorists.

As part of the LNG station construction project, locations have been selected where LNG and CNG refuelling facilities are expected to become operational in 2022 (including. Gdańsk).

4.4 Gradual and consistent reduction of operating expenses and optimisation of margins

Due to the COVID-19 pandemic and geopolitical situation, among other reasons, the year 2021 saw unusual macroeconomic conditions. The average annualised prices of crude oil were approximately 6% above the strategic assumptions, and almost 70% higher than in the previous year. Prices of natural gas were 119% higher than assumed in the strategy and more than 410% higher than in 2020. Also the product crack spreads were below long-term projections. The deviation was over 50% for diesel oil and over 25% for gasoline. In 2021, the annual average PLN/USD exchange rate was 3.86 vs the expected 3.70. Optimising the refinery operations under these market conditions proved to be a key measure to earn profit and limit the extent of losses caused by the significant unpredictability of crude oil prices and the volatile product market.

An important measure taken by Grupa LOTOS S.A. to ensure the continuity and stability of crude oil supplies is to diversify their sources. In 2021, the supply source diversification served as a tool to improve production efficiency and further build experience in processing diverse grades of crude oil, including Arab Light, Grane, Jones Creek, Novy Port, Catcher, and Egina.

EBITDA was boosted by the Efficiency Improvement Programme, designed to support the identification and reporting of efficiency improvement measures at the LOTOS Group.

As part of its efforts to optimise crude oil processing, the Company took measures to maintain competitive advantages and strengthen Grupa LOTOS S.A.'s position in the Solomon Associates global refining industry ranking. The Company carried out initiatives to improve the refinery's energy efficiency, and deployed state-of-the-art IT solutions consistent with the Industry 4.0 concept (the Competence Centre operated in partnership with Microsoft, using cloud computing solutions).

4.5 Readiness to embrace innovation

In 2021, Grupa LOTOS S.A. continued its initiatives focused on fuels of the future, designed to promote hydrogen-based technologies, and actively participated in implementing the Clean Transport Package, aimed to strengthen Poland's energy security and reduce emissions from transport.

LOTOS Group representatives also regularly participate in working meetings with regional organizers and operators of urban transport and support them in their preparations for the hydrogen transition of urban transport. This is confirmed by the letters of intent concluded with the local governments of Tczew, Gdynia, Wejherowo and Rzeszów. At the initiative of the Group, the Hydrogen Technologies and Clean Energy Technologies Cluster was established, thus initiating the Pomeranian Hydrogen Valley concept. The objective of the project is to increase the share of hydrogen in the transport fuel energy mix in the Gdańsk Province.

Grupa LOTOS S.A. is also active in undertaking other projects related to new generation alternative fuels, including LNG/CNG. The Company is involved in continued work to prepare project documentation for the construction of a small scale LNG terminal in Gdańsk; studies are also under way concerning the Group's entry into the biomethane market.

The Pure H2 project and the Feasibility Study on the Construction of a small scale LNG Terminal in Gdańsk and Innovative LNG Bunkering Facilities received EU funding as part of the Connecting Europe Facility (CEF).

Having forged ties between science and business, in late November 2020 a consortium comprising LOTOS Asfalt and the Gdańsk University of Technology signed an agreement with the National Centre for Research and Development for co-financing of the 'Environmentally-friendly bitumens' project. The project aim is to develop an innovative road surface capable of reducing air pollution levels near the roadway. As part of the project, on October 7th 2021, LOTOS Asfalt and the Ostróda County Local Government signed a letter of intent to build an experimental section of the road using smog-reducing bitumen.

In 2021, Grupa LOTOS S.A. prepared and adopted documents on the Strategic directions for innovation and the Strategic Research Agenda. The documents set out priorities for the Group's innovation initiatives for the next two years with an outlook until 2030, focusing on:

- modern refining technologies and oil products;
- developing a portfolio of new products and services;
- digitisation and improvement of organisational efficiency.

In the following year, Grupa LOTOS S.A. plans to continue alternative fuels projects and to implement the initiatives defined in the Strategic Research Agenda.

4.6 Active opportunity and risk management

The LOTOS Group is constantly developing its management culture based on the analysis of both risks and opportunities. This helps to address major challenges in the changing environment and in an increasingly demanding market. Openness in risk communication supports decision-making process at strategic and operational levels. In 2021, competitive advantage was determined not only by avoiding threats, but by consciously taking risks and effectively leveraging identified opportunities.

One of the key challenges affecting the Company's business in 2021 was the market situation caused by the COVID-19 pandemic. The procedures and preventive measures in place helped maintain operational efficiency across all business areas of the LOTOS Group. It is anticipated that in the near term the pandemic will continue to have implications for the Group's day-to-day operations and macroeconomic trends that affect its business and performance.

No less relevant to the activities and development of Grupa LOTOS has been the global trend towards low- and zero-emission economy. The 'Fit for 55' legislative proposal presented in July 2021 under the New Green Deal policy entirely changes the Group's business environment. The planned changes in such areas as the share of renewable energy in transport, taxation of fuels and energy, electrification of transport, the principles of sustainable financing or stricter limits on greenhouse gas emissions in manufacturing and transport will have a direct impact on the business activities of the entire industry and the development of the LOTOS Group. In 2022, the Company intends to continue to take an active part in legislative processes at both the national and EU level and to strengthen the effectiveness of communication of risks that arise from changes in the regulatory environment. At the same time, development and investment projects are planned and implemented to take advantage of identified opportunities.

In an effort to further develop active management of opportunities and risks, the Company plans to more closely integrate and comprehensively manage individual risk categories, especially those driven by global megatrends, such as climate change. In addition, project risk management methodologies are improved, which support further development and safe operation of the LOTOS Group.

4.7 Strong team, coherent CSR story, commitment to safety

Grupa LOTOS S.A.'s development initiatives pursued in 2021 were carried out to help deliver the organisation's vision and strategic goals for 2017−2022. The initiatives were aimed, among other things, at enhancing staff competencies to adapt them to the requirements of the business Strategy implementation, identifying talent within the organisation and boosting their strengths, disseminating expert knowledge, and increasing commitment and job satisfaction.

Integrated CSR policy

Grupa LOTOS S.A. considers corporate social responsibility as an element of its management and improvement processes. The primary goal of the Company's CSR policy is to support the organisation in meeting its strategic objectives, taking into account the needs of all stakeholder groups.

In the process of building lasting and positive relations with its stakeholders, Grupa LOTOS S.A. strives to effectively integrate its strategy and take steps designed to address social and environmental challenges.

In 2021, Grupa LOTOS S.A. continued its involvement in sports and pro-environmental projects with a social agenda, addressed to children and youth.

The CSR policy is also pursued through the LOTOS Foundation's activities, lending support to education, safety and environmental protection initiatives. In 2021, Grupa LOTOS S.A. and the LOTOS Foundation were involved in projects confronting the challenges posed by the COVID-19 pandemic in Poland.

The Foundation donated funds, among other things, to equip medical facilities in Poland with specialized equipment.

In 2021, the positive impacts of our CSR programmes and sustainable development initiatives were confirmed again (for the third year in a row) by the top position in the 15th Responsible Business Ranking (in the Fuels, Energy and Mineral Production category). In the overall ranking, the Company came sixth.

In 2021, Grupa LOTOS S.A. remained a constituent of the WIG-ESG index of socially responsible companies. The Company was also listed, for the ninth time, among the top socially responsible companies in a poll organised by Deloitte and the *Polityka* weekly. The Company was honoured with a Silver CSR Leaf.

Grupa LOTOS also ranked third in The Best Annual Report competition in the Enterprises category. This is a ranking of best annual reports in terms of the usefulness of reports prepared for shareholders and investors. The competition was organised by the Institute of Accountancy and Taxes.

In 2021, Grupa LOTOS also received prestigious nomination to the Presidential Economic Award in the 'Responsible Business' category in the 19th edition of the contest.

Our CSR, sponsorship and marketing activities are intended to build a competitive edge and coherent brand image on the market, as well as to support sales of Grupa LOTOS S.A.'s products.

Robust safety culture

The safety of employees remains Grupa LOTOS S.A.'s utmost concern across the entire organisation. We maintain an unwavering focus on building a safe work culture, raising the staff's awareness of a safe work environment and increasing their commitment to safety.

One of the strategic objectives for 2017–2022 is to reduce the LTIF rate below 3. In 2021, the LTIF was 3.2 for Grupa LOTOS S.A. and 4.5 for the Group.

4.8 Status of work on the acquisition of Grupa LOTOS S.A. by PKN Orlen S.A.

On February 27th 2018, the Energy Ministry and PKN Orlen S.A. signed a letter of intent on the acquisition of Grupa LOTOS S.A. In July 2019, PKN Orlen S.A. filed an application with the European Commission regarding its planned acquisition of an equity interest in Grupa LOTOS S.A. 2019 saw the completion of a due diligence process carried out by PKN Orlen to investigate the financial, tax, commercial and legal position of Grupa LOTOS S.A. in connection with the intended acquisition.

On July 14th 2020, the European Commission conditionally cleared the acquisition of Grupa LOTOS by PKN Orlen S.A. Therefore, PKN Orlen S.A. is required to implement remedies set out in the decision to prevent adverse effects of the proposed concentration on competition in the relevant markets.

The remedies include structural and behavioural commitments relating to the structure and policies of the undertakings involved in the concentration, as described in Current Report No. 21/2020 of July 14th 2020 (European Commission clears Lotos' acquisition by PKN Orlen subject to conditions).

As part of the transaction schedule, conditional agreements successfully concluded with pre-selected partners should be submitted to the European Commission by July 14th 2021. A number of transactions provided for in the remedies could be executed with two partners, one of them taking over logistics infrastructure, and the other one acquiring wholesale and retail operations, as well as a 30% interest in the entity to which the refining assets previously held by Grupa LOTOS S.A. and LOTOS Asfalt Sp. z o.o. would be transferred.

The European Commission's guidelines also allow for selecting, instead of such other partner, two (or more) partners between which the asset portfolio (service stations, wholesale operations, as well as the equity interest in refining assets) would be divided.

Following submission by PKN Orlen S.A. of the conditional agreements to the European Commission, implementation of the remedies will be subject to the Commission's review.

In the event of the Commission's approval, PKN Orlen S.A. would commence the acquisition of control over Grupa LOTOS S.A. The companies would have six months to complete the transaction whereby PKN Orlen S.A. would become a majority shareholder of Grupa LOTOS S.A.

For successful completion of the process, a final decision of the shareholders would also be relevant. Corporate actions necessary to implement the remedies on the part of Grupa LOTOS S.A. include:

- pursuant to the Articles of Association of Grupa LOTOS S.A., the sale or lease of the Company's business or its organised part whose activities include the manufacture, processing and sale of refined petroleum products, requires a resolution of the General Meeting passed by a majority of at least four-fifths of the votes, provided that at least half of the Company's share capital is represented at the General Meeting;
- divestment by Grupa LOTOS S.A. is subject to approval by the Supervisory Board in the case of sale of assets with a market value exceeding 0.1% of the Company's total assets and the execution of all material transactions; the Supervisory Board then submits its opinion to the General Meeting;
- divestment of shares held by Grupa LOTOS S.A. in other companies, where the market value of the shares to be divested exceeds PLN 100 million or 10% of Grupa LOTOS's total assets, requires consent of the General Meeting of Grupa LOTOS S.A. under a resolution passed by an absolute majority of votes;
- actions taken by a Grupa LOTOS S.A. subsidiary may require corporate approvals granted by the governing bodies of such subsidiary.

These activities will be subject to a detailed analysis and execution in accordance with law, depending on the final structure of the transactions carried out.

In the course of the acquisition process, i.e. preparation for implementation of the remedies, Grupa LOTOS S.A. has been building shareholder value by continuing its day-to-day operations, while maintaining its independence and competitiveness against other market players.

On August 18th 2020, Grupa LOTOS S.A. signed a cooperation agreement with PKN Orlen S.A. and the State Treasury. It concerns the completion of PKN Orlen S.A.'s acquisition of Grupa LOTOS shares from the State Treasury.

On March 12th 2021, in Current Report No. 10/2021, the Company announced that it had commenced preparations to reorganise Grupa LOTOS S.A., as part of which the Management Board had given a general approval for internal organisational measures aimed at optimising the Group's structure and preparing it for implementation of the model whereby the remedies necessary to go ahead with the intended acquisition of control over the Company by PKN Orlen S.A. are to be carried out, i.e.:

- separation of an organised part of Grupa LOTOS's business comprising the refining assets and its contribution to LOTOS Asfalt Sp z.o.o (which is wholly-owned by the Company); LOTOS Asfalt Sp. z o.o. would then become a special purpose vehicle 30% of whose shares would be sold to an independent operator;
- transfer of shares in LOTOS Biopaliwa from LOTOS Terminale to the Company;
- transfer of shares in LOTOS Infrastruktura to LOTOS Terminale;
- transfer of logistic assets of LOTOS Infrastruktura to LOTOS Terminale.

In October 2021, the Extraordinary General Meeting of Grupa LOTOS S.A. approved the reorganisation of the LOTOS Group proposed by the Management Board. The adopted resolutions will enable the LOTOS Group to prepare for the implementation of the remedies presented by the European Commission in July 2020.

The shareholders' approval gave the Management Board the green light to implement an intra-group reorganization that would involve the integration of the entire refining complex into a single entity – LOTOS Asfalt. The shareholders also approved the transfer of shares in LOTOS Biopaliwa from LOTOS Terminale to Grupa LOTOS S.A. The Extraordinary General Meeting also gave conditional consent to the disposal of 30% of shares in LOTOS Asfalt and 100% of shares in the following companies: LOTOS Biopaliwa, LOTOS Terminale, LOTOS Paliwa (and companies that will acquire part of LOTOS Paliwa's assets as a result of its demerger), as well as the entity that will acquire part of LOTOS Asfalt's assets as a result of its demerger (spin-off of its branches in Southern Poland).

Integration of the refinery complex took place in November 2021 through acquisition by LOTOS Group S.A. of new shares in LOTOS Asfalt sp. z o.o. in exchange for in-kind contribution in the form of organised part of business (comprising a set of tangible and intangible assets used by the Company to conduct refining activities in Gdańsk). These measures are based on the adopted intra-organisational solutions to optimise the structure of the LOTOS Group and to prepare the organisation for the implementation of the remedies.

In November 2021, PKN Orlen received the European Commission's consent to extend the deadline for the implementation of the remedies required from PKN Orlen to prevent the adverse effects of the proposed concentration. The new deadline was set for January 14th 2022, with the extension justified by the need to finalise the negotiation process with partners participating in the talks on implementing the remedies and to allow the partners to complete the decision pathway.

In January 2022, four partners selected to implement the remedies were presented. Saudi Aramco was selected the investor in refining assets (30% of shares in the refining JV), wholesale and aviation fuel. MOL is the partner in the retail segment, the Hungarian Rossi Biofuel in the biofuels area and Unimot – in the logistics.

4.9 Initiatives supporting implementation of the Group's strategy in 2022

The key factors important for the development of Grupa LOTOS S.A. include decisions on allocation of capital expenditure to selected projects, and proactive approach to business opportunities in the Exploration & Production segment.

In addition, the Company's development in 2022 will be affected by the progress of work on acquisition of Grupa LOTOS S.A. by PKN ORLEN S.A., including implementation of the remedies and integration processes.

In 2017–2022, Grupa LOTOS S.A. plans to allocate approximately PLN 9.4 billion to capital expenditure, of which approximately PLN 4.6 billion was spent in 2017–2021. In 2021 alone, capital expenditure amounted to PLN 1.1 billion.

The Management Board plans to carry out its capex plans for 2021 based on a mix of internally generated and borrowed funds. In 2020, the net debt/LIFO-based EBITDA ratio was 0.16x, below the target level set in the strategy, allowing the Company to safely pursue its investment plans, including equity investments.

5 Grupa LOTOS S.A.'s and the LOTOS Group's operations in the Refining & Marketing segment

5.1 Grupa LOTOS S.A. – crude oil refining

5.1.1 Oil refining market and competition in the region

The Grupa LOTOS refinery, with the annual processing capacity of approximately 10.5 million tonnes of crude oil, is one of the most advanced and newest refineries in Europe, ranking high relative to competitors in terms of crude oil processing complexity (Nelson Complexity Index), which makes it possible to optimise both the selection of crude grades processed and the energy mix supplied to the refinery, as well as, importantly, flexible management of the stream of petroleum products manufactured. The LOTOS refinery also features a high distillate rate (an 86% share of fuels in the crude oil processed) and focuses on medium distillates, which enables the Company to successfully adjust its output to the structure of domestic demand and to export opportunities.

The refinery's technological advancement was achieved through the 10+ Programme completed in 2011 and the EFRA Project completed in 2019, followed by its full integration with the refinery's units, as well as a number of lesser capital projects designed to increase the efficiency of the refining process (e.g. the Hydrogen Recovery Unit). In 2021, the Company launched the Pure H2 project involving the construction of a hydrogen purification unit and a system for supplying hydrogen to tube trailers (vehicles used to haul compressed hydrogen).

The upgrade and extension of the refinery as part of the 10+ Programme resulted in increased yields of high-margin products per barrel of crude processed and an increase in the annual volumes of fuels from 4 million tonnes to 7.8 million tonnes, while enabling the Group to process more technologically demanding crude types. The EFRA Project was a continuation of the refinery's technological upgrade, naturally complementing its configuration. The main objective of EFRA was to ensure more efficient utilisation of heavy residue, which is the heavy end of crude oil used to make heavy fuel oil or bitumens. The EFRA Project units supplemented the crude oil processing line at the Gdańsk refinery and enabled flexibility in substituting the production of low-margin heavy fuel oil with more engine fuels, thus increasing the margin on each processed barrel of crude oil by approximately USD 2-4.5. The refinery, with its expanded array of tools to optimize production processes, remained competitive, even amidst the volatile macro environment that prevailed for the better part of 2021, and was associated with the gradual recovery from the COVID-19 pandemic and volatile prices of natural gas and process feedstocks.

The EFRA facilities, integrated with the refinery's oil processing line, have enabled the Company to increase the output of middle distillates (diesel oil and, optionally, aviation fuel) by approximately 900 thousand tonnes per year, from the same volume of crude oil processed. As for the other product categories, the production capacities of naphtha and LPG have changed, their respective target levels to be reached as part of the optimisation process. The Grupa LOTOS refinery also maintained a capacity to produce bitumens, which fetched relatively high profit margins compared with other petroleum products in 2021. The maximisation of their output, with advantage taken of arising market opportunities, was a strong contributor to the LOTOS Group's profit on sales in 2021.

The refinery operates a continuous emission monitoring system (CEMS) to continuously monitor the environmental impact of the refinery's operations. The project was implemented to meet the relevant provisions of the national and EU environmental laws. Anticipating the Industrial Emissions Directive, whereby the European Union requires that emission monitoring be adapted to the best available techniques (BAT).

Seeking to expand its capacity to dispatch fuels from the refinery extended to include EFRA units, in 2021 the Company was completing the project to construct a fourth railway loading facility with an annual capacity of 2.2 million tonnes of fuel products.

The refinery's configuration combined with its favourable location are factors enabling flexible selection of crude types to maximise margins on their processing and sale of products.

The LOTOS refinery operates in the fuel importer market and enjoys the geographical advantage and benefits of a coastal location close to the liquid Amsterdam-Rotterdam-Antwerp oil market. The refinery's location was a source of major competitive advantage in the region in terms of logistics (access to feedstock and product sales channels). The location close to the handling terminal provided the LOTOS Group with direct access to international markets, enabling it to export its oil products primarily to Scandinavia, north-western Europe and the Baltic states. It also helps the Company to optimise sales channels and purchase various types of crude oil and fuels.

The refinery also had a unique combination of feedstock supply channels both by land, from Russia, via the PERN pipeline network, and by sea from many countries and from the Group's own deposits. Access to two supply channels allowed the Group to diversify feedstock deliveries and to respond flexibly to volatile petroleum product and crude oil prices. As a result, Grupa LOTOS S.A. was able to effectively diversify its crude slate and improve its bargaining power for the purchases of crude oil.

Solomon Associates, which prepares the most recognised global ranking of refining plants, has placed the LOTOS refinery among the best 25% of plants, based on key competitiveness indicators, such as the refining margin, energy efficiency, maintenance team efficiency and plant availability, while classifying it as the most advanced refinery in Central and Eastern Europe.

5.1.2 Optimization of oil processing in amid gradual market recovery after the pandemic

The consequences of the pandemic and market destabilisation had a significant impact on the conditions in which Grupa LOTOS operated during the reporting period. The Company operates in the petroleum sector, whose environment is global. In 2021, the market for petroleum products was witnessing dynamic changes driven by the pandemic, its containment, and recovery of the economy at home, in the neighbouring countries and globally.

In 2021, the Company's market environment was in a phase of gradual economic recovery in individual countries as a result of the lifting of restrictions related to the COVID-19 pandemic, government subsidy programmes and support for many economic sectors. The European market was heavily affected by limited short-term predictability and uncertainty about future quarters due to Russia's policy of restricting natural gas shipments to Europe, causing a very sharp increase in prices of the commodity. Additionally, as a result of the green transformation taking place in the world in order to tackle the climate crisis, prices of CO_2 emission allowances, the so-called EU ETS, significantly increased, which affected the prices of energy carriers used to power refineries. A marked imbalance and shortage of liquidity in international trade continued, as did periodic interruptions in supply chains.

In 2021, Grupa LOTOS applied a number of optimisation initiatives, both in terms of feedstock selection for the refining units, mix of the energy carriers used by the refinery and structure of petroleum products. The Company's refinery was subject to intensive optimisation efforts with a view to flexibly adjusting its yields to the fast-changing market conditions. As the refinery's complexity had been expanded by the EFRA Project and the Hydrogen Recovery Unit, the Company smoothly managed the stream of petroleum product yields to match the changing demand and the best possible price conditions. These included increased sales of bitumen and base oils, which had unusually high market margins in 2021 due to their limited availability as a result of reduced global refining capacity utilization in 2020. The efforts allowed us to maintain the use of almost full capacity of the Gdańsk refinery. At the same time, Grupa LOTOS decided to postpone some of its planned capital projects, pending an improvement of the business environment. LOTOS Group, through its subsidiary LOTOS Oil, commenced started the Hydrocracking Base Oils (HBO) project in 2021. Its annual production capacity is tens of thousands of tonnes of semi-finished fuel products and, more importantly, over 400,000 tonnes of Group 2 base oils – a product valued higher than diesel oil and sought after both on the European and global markets.

In addition, the seaside location of the Grupa LOTOS refinery allowed the Company to swifly capture market opportunities, e.g. through export sales of attractively priced naphtha for delivery by sea, which helped it maintain a high level of crude throughput and enhance the refining margin during the toughest period for the industry.

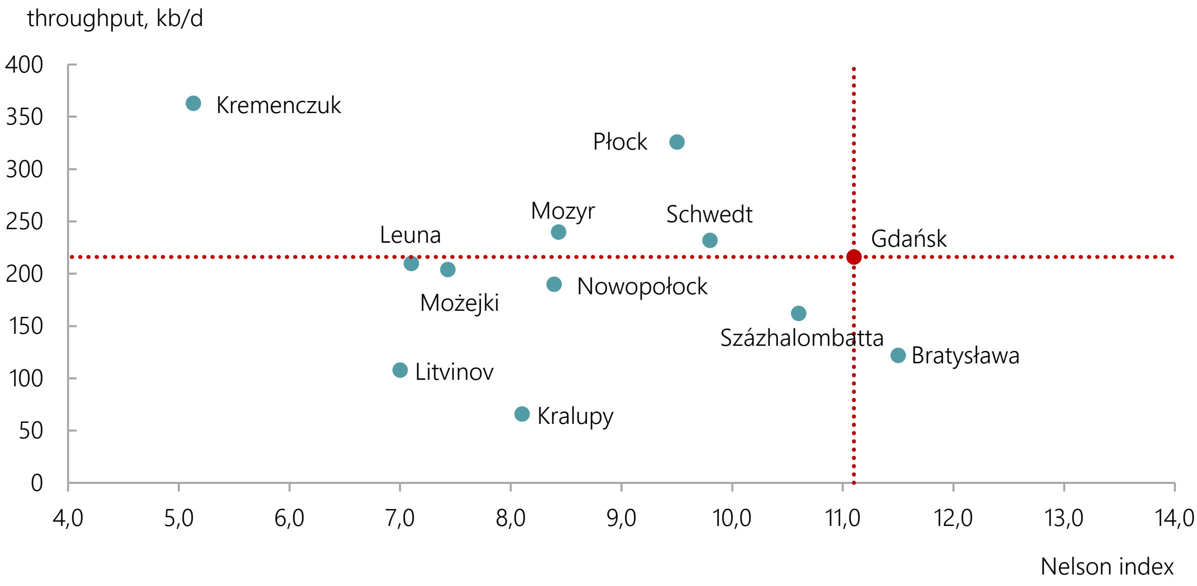
5.1.3 Refineries operating in the region

Situation on the Polish fuel and fuel products market is affected by the operations of several neighbouring refineries.

Apart from the market leader, the refinery of PKN Orlen S.A. in Płock, the other refineries operating in the region also supply their products to the Polish market, thus competing with Grupa LOTOS. In the first half of 2021, the trend of reducing refinery throughput continued due to sustained pandemic restrictions in most countries. However, as of the second half of the year, due to growing global demand and the resulting recovery of crack spreads, refinery throughput was increasing. In addition, the trend of converting conventional refineries into plants producing fuels from feedstocks of plant origin (biorefineries) has become more pronounced since 2020. Such steps have been taken by TOTAL in France, Neste in Finland and ENI in Italy, among others. The economic recession that took hold in 2020 and continued into 2021 is a factor behind decisions of individual refineries whether to continue their operations and undertake further capital projects.

Grupa LOTOS has a technologically advanced refinery, boasting one of the highest complexity factors in the growing region of Central Europe (with the Nielsen Complexity Index of 11.1). Strong yield flexibility has enabled the Company to weather the elevated market volatility sparked by the COVID-19 pandemic, affecting demand and crack spreads. This is clearly visible after the decline in refinery capacity utilisation. In Europe (in the NWE and CEE regions combined), capacity utilisation decreased from 84% in 2019 to 76% in 2020, to rebound to 80% in 2021. However, the complexity of the Gdańsk refinery allowed Grupa LOTOS to redirect refinery output streams into products such as base oils and bitumens. This helped maintain throughput well above the European average.

Figure 22. **Refineries in Central Europe: capacity and Nelson Complexity Index (NCI)**



Source: In-house analysis based on Company data and data from PKN Orlen, MOL Group, Rosneft, S&P Global Platts.

Annual crude processing capacities of the key regional competitors are as follows:

- Płock refinery (PKN ORLEN), Poland – approximately 16.5 million tonnes,
- Leuna refinery (TOTAL Group), Germany – approximately 11.6 million tonnes,
- Schwedt processing refinery (PCK Raffinerie GmbH), ownership – ENI/ROSNEFT, Germany – approximately 11.8 million tonnes,
- Mažeikiai refinery (PKN Orlen), Lithuania – nameplate capacity of approximately 15 million tonnes, but in view of the existing technology set-up and market conditions, only about 8 million tonnes of the capacity is effectively utilised,
- Schwechat refinery (OMV), Austria – approximately 10.1 million tonnes,
- UniPetrol refineries in Kralupy, Litvinov (PKN Orlen), the Czech Republic – approximately 8.7 million tonnes,
- Bratislava refinery (Slovnaft, MOL Group), Slovakia – approximately 6.1 million tonnes.
- Bayernoil processing refinery (Vohburg – ENI/VARO/ROSNEFT), Germany – approximately 10.7 million tonnes,
- MiRO processing refinery (Karlsruhe – PHILLIPS 66/EXXONMOBIL/SHELL/ROSNEFT), Germany – approximately 16 million tonnes,
- Holborn Europa Raffinerie processing refinery (Hamburg – Holborn European Marketing), Germany – approximately 4.7 million tonnes
- Ruhr Oel Refinery processing refinery (Gelsenkirchen – BP), Germany – approximately 12.9 million tonnes

Map 2. Grupa LOTOS refinery vs competitors in the region

Source: Company, refining capacity (m tonnes/year)

5.1.4 Main products

The key categories of products obtained from crude oil processing at the Grupa LOTOS refinery are:

- Fuels:
  - Unleaded gasoline. Unleaded gasoline is used in spark-ignition engines. Grupa LOTOS S.A.'s unleaded gasolines include premium gasoline – LOTOS DYNAMIC 98, containing antioxidants and cleaning additives which ensure better cleaning of the engine, extend its life, and reduce fuel consumption. This DYNAMIC brand premium fuel is marketed solely through LOTOS service stations.
  - Diesel oil. It is designed for compression-ignition engines. The Company's offering includes premium diesel oil – LOTOS DYNAMIC DIESEL which, owing to the use of friction-reducing components, offers more power efficiency and, in winter, can guarantee engine start at temperatures as low as -32°C. This DYNAMIC brand premium fuel is marketed solely through LOTOS service stations. Diesel oil has the largest share in the LOTOS Group's sales volume on the domestic market.
  - Fuel oil (light fuel oil). The product is intended for use in heating equipment. With a low sulfur content and unique additives, the product has oxidation resistance and anti-corrosive properties, helps maintain clean nozzles, and reduces noxious combustion emissions.
  - Aviation fuel. The product is intended for use in jet engines.
  - Diesel oil – MGO marine fuel with low sulfur content of up to 0.1%
  - Low sulphur alternative (hybrid) marine fuels RMD80, RME180.
- Liquefied petroleum gas (LPG). The product can be used as a fuel for: engines equipped with an LPG system, heating equipment, gas tanks and bottles. It may also be feedstock for petrochemical processes.
- Naphtha. Naphtha is used as feedstock in the petrochemical industry and in production of motor gasolines. The entire output of naphtha is exported.
- Bitumens. The key product in this category are advanced road bitumens used in the construction and maintenance of roads, airports and other hard surfaces. Apart from the road construction industry, bitumens are also used in the manufacturing of construction materials with waterproofing properties, with industrial bitumens being the most popular component.
- Base oils. The key product in this category are Group 1 base oils. They are used as feedstock for lubricating oils, including motor and industrial oils. The LOTOS Group's primary motor oil product lines include: LOTOS Aurum, Hybrid, LOTOS Quazar, premium synthetic oils for passenger cars, LOTOS Thermal Control, mineral, semisynthetic and synthetic oils dedicated for passenger cars, LOTOS Turdus, mineral, semisynthetic and synthetic oils dedicated for lorries. The lines of industrial oils are Hydromil, Transmil, and Remiz, which make up a full category of hydraulic, turbine and machine oils, as well as industrial lubricants.

- Heavy fuel oil. The product has three principal applications: as a fuel for power generation, as a bunker fuel (since 2020, in vessels equipped with scrubbers), and as feedstock for further processing, including in coking units.

Other major product lines

- TDAE and RAE class plasticizers marketed under the QUANTILUS T50 and QUANTILUS T60 brands, used by European and Asian tire and rubber manufacturers. These products meet the requirements of the EU REACH directive and have been approved by global tire manufacturers.
- MODBIT modified bitumens – state-of-the-art bitumens enhancing pavement resistance to rutting and improving durability and resistance to extreme weather conditions.
- Xylene fraction is a product launched in 2012, obtained through reformate splitting. It is used as feedstock in plastics production. Xylene separation will further diversify the LOTOS Group's product portfolio and reduce the share of aromatic hydrocarbons in the range of gasoline components produced by the LOTOS refinery in Gdańsk. This will contribute to greater technological flexibility of the refinery, allowing it to sell some of the components on the fuel or petrochemical markets.
- Pet-coke – produced since the commissioning of the Delayed Cracking Unit (DCU) at the Grupa LOTOS refinery as a by-product of deep processing of heavy petroleum residue into high-margin middle distillates (diesel oil and aviation fuel).
- Biocomponents – first produced in 2020. Grupa LOTOS launched the production of its own biocomponents (liquid biohydrocarbons and biopropane) in a combined hydrotreatment process. Analyses are under way at the Company to implement a concept of using biohydrogen made from biomethane. Grupa LOTOS is an entity required to meet the mandatory targets for a minimum share of renewable energy in transport and reduction of greenhouse gas emissions from transport fuels. Measures to meet these targets include the use of biocomponents, such as fatty acid methyl esters (FAME) and ethanol, as well as liquefied petroleum gas (LPG).

5.1.5 Volumes of crude oil processing and products

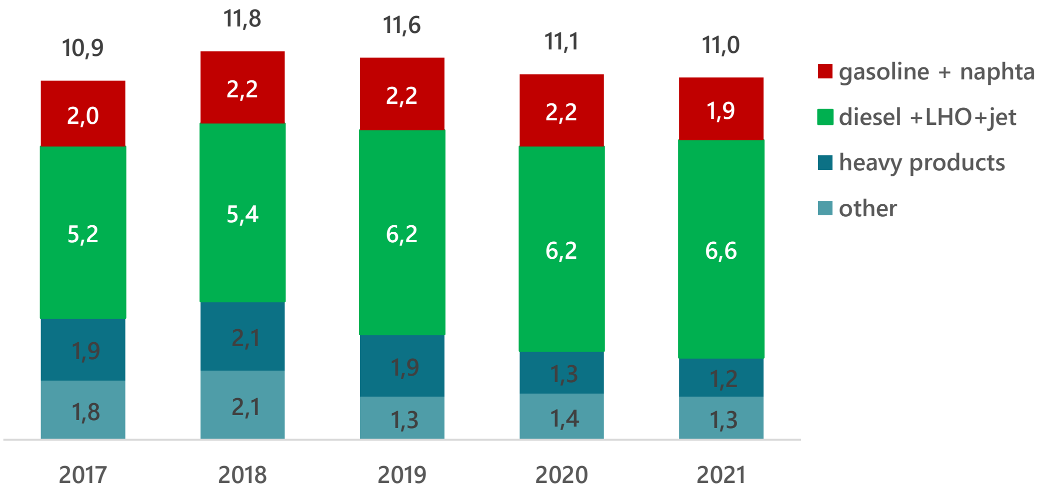
In 2021, the Grupa LOTOS refinery processed 9.9 million tonnes of crude oil and the utilisation rate of its nominal refining capacity was 98.8% (i.e. close to full capacity), despite the planned cyclic maintenance shutdown, which was for the first time performed as a partial shutdown (with the second part planned for spring of 2022). Since only some of the production units were stopped during the 2021 shutdown, the refinery could continue to process crude oil and the Company dispatched and sold products throughout the maintenance period.

Based on the schedule, 19 out of over 60 units were shut down in March 2021, most of which resumes operation in early April. The second and last stage of the shutdown was the overhaul of three oil units, completed in April. All maintenance work was completed on May 1st, 2021. The mix of crudes resulted from the production optimisation process whose objective was to take advantage of opportunities for increasing the refinery's processing margin.

In 2021, the Gdańsk refinery's product output was 11 million tonnes. Diesel oil accounted for the largest share of production, with an output of 6 million tonnes, an increase of 3.8% year on year. Its share in total production was 54.1%. Our oil refining products are sold in Poland and abroad, through wholesale and retail channels (the latter being our own service station chain).

In 2021 the Company published→ a monthly structure of its refining output to show approximate monthly effects of the EFRA Project and optimisation processes, particularly evident in the context of the extremely challenging situation that emerged on the market of crude oil and petroleum products in the wake of the COVID-19 pandemic.

Figure 23. Company's refining output structure



Source: Company (in million tonnes).

5.2 Model refining margin

In order to assess the impact of changes in prices of commodities and products on global markets on the profitability of the refinery, Grupa LOTOS S.A. publishes its model refining margin and makes the model available on its website.

The refinery optimises the mix of energy carriers used in its refining processes on a weekly basis to reflect movements of market prices of commodities and petroleum products, with a strong focus on reducing the consumption of natural gas, given its current high costs. In the fourth quarter of 2021, up to 70% of the reduction in the volume of gas consumption by the Company was directly attributable to the rising prices of the commodity.

Given the optimisation measures implemented, the published model refining margin provides an insight into the hypothetical profitability of a refinery operating within a specific technological setup, based on prices from NWE markets published by Refinitiv.

As a result, the model margin does not reflect the actual margin generated by the Grupa LOTOS S.A. refinery subject to seasonal variations and optimisation adjustments.

The model margin is calculated for a yield structure estimated in the averaged scenario (excluding annual seasonality) of the Grupa LOTOS refinery operation.

The Company updated its model margin calculation method (for details, see → Current Report No. 5/2021 of February 10th

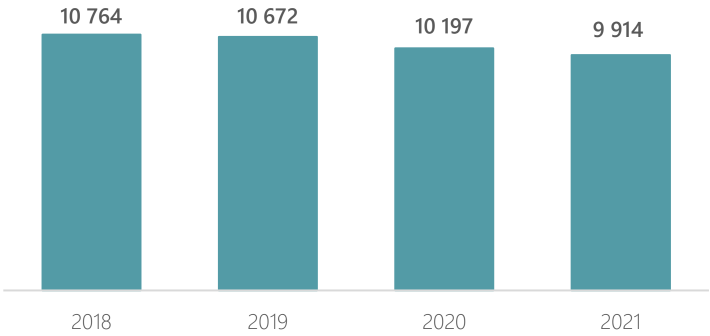
The updated mathematical formula for calculating the model margin of Grupa LOTOS S.A.'s refinery is as follows:

Model refining margin [USD/barrel] = revenue (products from 94% of crude processed = 23% gasoline + 63% diesel oil + 8% heavy fuel oil) – costs (100% of crude processed + cost of natural gas consumption)

5.3 Supply sources

As its main feedstock, Grupa LOTOS S.A. relies on Russian REBCO (Russian Export Blend Crude Oil). Compared with the global Brent oil benchmark, REBCO is a blend of heavier crude grades with higher sulfur content, and yields more middle distillates (diesel oil, aviation fuel). The Grupa LOTOS refinery also processed crude oil produced domestically (from the Lubiatów and Rozewie fields) and from Lithuanian assets. The balance of the feedstock was sourced from other directions.

Figure 24. **Crude oil throughput at Grupa LOTOS S.A. (thousand tonnes)**



Source: the Company.

In its refining production, the Company uses crude oil, intermediate products, chemicals and petroleum materials with a consolidated value shown in the table below.

Table 2. **Breakdown of LOTOS Group's purchases of feedstocks, intermediate products, chemicals and petroleum materials**

	2021		2020	
	(PLNm)	share (%)	(PLNm)	share (%)
Crude oil	18,625.1	77.1%	11,450.1	82.1%
Gasoline components: MTBE/ETBE	151.4	0.6%	120.4	0.9%
FAME	2,312.3	9.6%	1,161.9	8.3%
Gasolines	-	-	31.1	0.2%
Ethyl alcohol	334.4	1.4%	214.4	1.5%
Additives	92.8	0.4%	104.1	0.7%
Diesel oil components	1,024.2	4.3%	99.7	0.7%
Natural gas	874.3	3.6%	325.1	2.3%
Bitumens, bitumen components and additives	79.2	0.3%	44.5	0.3%
Feedstock for FAME production	637.6	2.6%	398.3	2.9%
Other	15.1	0.1%	12.2	0.1%
Total	24,146.4	100.0%	13,961.8	100.0%

Source: the Company.

5.3.1 Suppliers

In 2021, the key suppliers to the LOTOS Group whose supplies accounted for more than 10% of the Group's total procurement costs were: Glencore Energy UK Ltd of the United Kingdom, Petraco Oil Company Ltd of the United Kingdom, Tatneft Europe AG of Switzerland. Their shares in the LOTOS Group's purchases were respectively 17.0%, 15.7% and 14.6%.

5.3.2 Customers

In 2020–2021, there were no customers with a share in excess of 10% of the LOTOS Group's total revenue.

LOTOS Paliwa Sp. z o.o. (wholly owned by Grupa LOTOS S.A.) was Grupa LOTOS S.A.'s largest customer, accounting for over 50% of the Company's total revenue in 2021 and 2020.

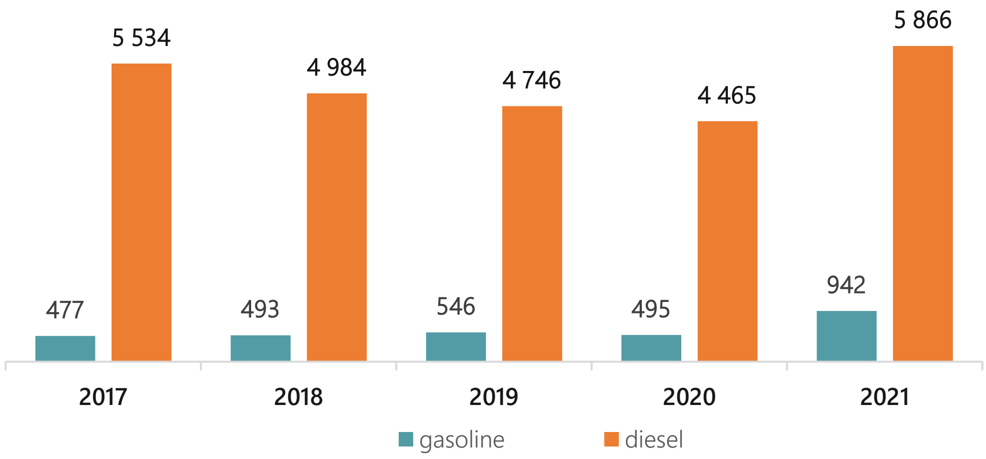
5.4 The LOTOS Group's sales of petroleum products on the domestic market

The year 2021 was a rebound year after restrictions were put in place at various stages of the COVID-19 pandemic. Fuel consumption was on the rise as early as March 2021. According to POPiHN data, increase was seen in the consumption of gasoline (9.8%), diesel oil (6.8%), light fuel oil (1%) and aviation fuel (25.1%).

After the 12 months of 2021, the balance of supply and demand on the Polish gasoline, diesel oil and light fuel oil market was negative. The largest deficit, in line with a trend continuing for several years, was recorded in diesel supply. The gap between diesel production and consumption was 4.3 million cubic metres (3.6 million tonnes). In 2021, the Polish market also saw a deficit of gasoline (886,000 cubic metres or 669 thousand tonnes). The light fuel oil market was almost balanced.

An exception to those several-year-long trends was aviation fuel, since its balance was traditionally positive, meaning an excess of production over consumption volumes on the Polish market of 154 thousand tonnes.

Figure 25. **Imports of gasoline and diesel oil into Poland (thousand tonnes)**



Source: In-house analysis based on Polish Organisation of Oil Industry and Trade (POPiHN) data.

In 2021, the LOTOS Group held a 32.2% share in the domestic fuel market, a decrease of 1 pp year on year.

Figure 26. **LOTOS Group's total share in Poland's domestic fuel market (%)**

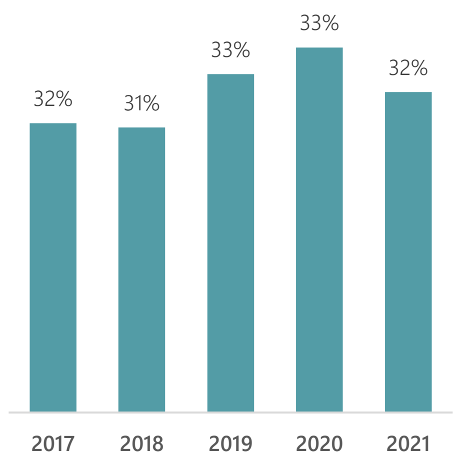
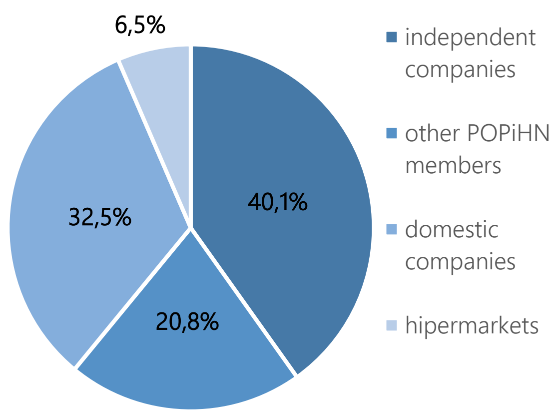


Figure 27. **Share of individual operator groups in the retail fuel market in Poland (%)**



In-house analysis based on Polish Organisation of Oil Industry and Trade (POPiHN) data.

5.4.1 Retail fuel sales

In 2021, the share of domestic oil companies in the retail market fell from 32.5% in 2020 to 31% in 2020, that is by 1.5 pp. The share of other POPiHN-affiliated stations in the retail market was 24.2%. Independent operators saw their market share decline from 40.1% to 38.4%. The market share of service stations operated by hypermarket chains remained unchanged at 6.4%.

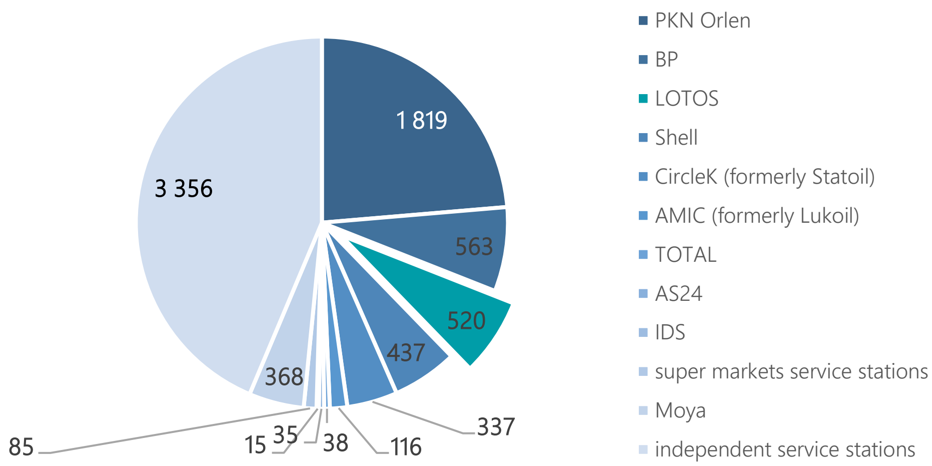
According to POPiHN, there were around 7.85 thousand service stations on the Polish fuel market at year-end 2021. As in previous years, approximately one third of the stations belonged to Polish companies, 20.1% were owned by international corporations, while 47.8% were owned by independent operators.

In 2021, Unimot (with its Avia stations) joined the organization, which had the effect of increasing the number of Organization member stations to 4323. In the chain of Group-owned service stations, work was under way to optimise the network, which ultimately increased the number of CODO service stations by 2.6% and DOFO stations by 4.5%.

The largest service station chains included:

- PKN Orlen – 1,819
- BP – 563
- LOTOS – 520,
- Shell – 437,
- Circle(K) – 377

Figure 28. **Service stations in Poland at the end of 2021**



Source: Polish Organisation of Oil Industry and Trade (POPiHN).

Operations on the Polish retail fuel market are conducted by LOTOS Paliwa through: development and management of the CODO (*Company Owned Dealer Operated)* and DOFO (*Dealer Owned Franchise Operated*) service station networks. The company sells:

- fuels through CODO stations, including Motorway Service Areas,
- fuels to DOFO stations,
- non-fuel goods, including food products, through CODO stations,
- services, including car wash services, through CODO stations.

As at the end of 2021, 520 service stations operated under the LOTOS brand, including:

- 327 CODO stations,
- 193 DOFO stations.

The LOTOS Group's objective is to maximise the utilisation of its resources by enhancing fuel sales and non-fuel revenues.

One of the elements of its strategy is to develop the service station chain at motorways and expressways (Motorway Service Areas). Sales in the Motorway Service Area format will take place at locations where LOTOS Paliwa operates or will launch service stations following successful tenders.

As part of strengthening its position in the strategic segment of highway and expressway stations, in 2021 the Company launched seven new Motorway Service Areas (MSAs).

5.4.2 Wholesale of gasoline, diesel oil and light fuel oil

In 2021, the LOTOS Group strengthened its existing and developed new trading relationships with key customers. Further development of these key customer relationships was supported by the Group's reliability as a supplier, the services offered and the quality of fuels supplied.

Within individual business units, Grupa LOTOS took steps to maximise profits, focusing on customers with the greatest growth potential and reviewing its geographical structure to exploit the logistics network in an economically viable way.

Seeking and optimising wholesale synergies between Grupa LOTOS S.A. and LOTOS Paliwa were a factor taken into account in defining the scale and scope of business relationships with customers. The aim of the measures was to maximise margins amid growing prices of refinery feedstocks, surging prices of energy carriers and utilities used in refining processes, including prices of CO_2 emission allowances, volatile product prices and the rebounding demand for fuels following gradual lifting of COVID-19-related restrictions.

In 2021, the LOTOS Group's wholesale operations focused on:

- expanding its business with customers to place the volumes of diesel oil delivered by EFRA Project units;
- flexibly managing target groups/sales channels in Poland to place fuel products in the most efficient way while ensuring transaction security;
- consolidating sales within the group of strategic customers;
- strengthening its position on existing markets,
- effective implementation of the pricing policy, including, as of December 20th, 2021, under new national regulations enacted in response to rising inflation

5.4.3 Sale of aviation fuel

The LOTOS Group sells aviation fuel domestically through LOTOS-Air BP Polska. In 2021, LOTOS-Air BP Polska recorded a significant rebound of volumes of the into-plane sales, driven by the gradual recovery of the air transport market in 2021 related to the liberalisation of restrictions on population mobility introduced by governments in 2020 as a countermeasure to the spread of the COVID-19 pandemic. As part of its optimization efforts, the Gdansk refinery produced 57% more jet fuel vs 2020, but still 24% less than in pre-pandemic 2019.

5.4.4 Production and sale of LPG

2021 saw continued marketing efforts to build the position of Grupa LOTOS on the LPG market

in Poland. Despite the persistent SARS-Cov-2 pandemic, the volume of LPG sales rebounded to pre-2020 levels.

Following full integration of the DCU and HRU, the sales force focused on building the market and Grupa LOTOS's position as an LPG supplier in the country. These efforts were carried out, among other things, in view of the expected increase in the refinery's LPG distribution capacity, related to the ongoing modernisation of logistics and production areas.

The steady growth in LPG sales year over year confirms that the measures taken have been effective and need to be intensified going forward.

5.4.5 Production and sale of motor and industrial oils

Production and distribution of lubricants: automotive, industrial and lubricating oils, base oils and automotive fluids are the business of LOTOS Oil Sp. z o.o.

In 2021, LOTOS Oil's commercial activities focused on strengthening sales in the automotive segment, with particular emphasis on increasing the share of synthetic and semi-synthetic oils for passenger vehicles in total sales. Sales of industrial products are supported by professional oil service.

The Key factors affecting the profitability of the LOTOS Group's lubricating oil business in 2021 included:

- availability and prices of raw materials (base oils and enhancing additives),
- delays in maritime transport and increases in freight rates,
- with regard to motor oils – further strengthening of relationships with indirect customers (distributors and automotive wholesalers) as well as stepping up direct sales, supported by effective marketing campaigns,
- in the industrial oils segment – a change in the sales structure from low-margin bulk products to more advanced products generating higher unit margins.

In order to build added value and economies of scale, LOTOS Oil was an active member of the Polish Automotive Industry Association, the Polish Automotive Group Association and the Association of Polish Entrepreneurs in Ukraine. Production and distribution of lubricants: automotive, industrial and lubricating oils, base oils, automotive fluids and car care products are the business of LOTOS Oil Sp. z o.o.

Significant global year-on-year increase, in the second and third quarters of 2021, in prices of base oils, traded with a premium to diesel oil, due to the limited availability of the products caused by the lower utilisation of the refinery capacity in 2020.

5.4.6 Production and sale of bitumens and marine fuels

The Group subsidiary dedicated to the bitumens business is LOTOS Asfalt Sp. z o.o., a producer and distributor of a broad range of road bitumens, soft road bitumens, modified bitumens (MODBIT, including HIMA highly-modified asphalts), WMAs (warm mix asphalts) for application in badly accessible places (e.g. tunnels) and industrial bitumens. The Company also delivers speciality bespoke products.

In 2021, LOTOS Asfalt Sp. z o.o. was making consistent efforts to retain its position as a leader in speciality bitumens (significant year-on-year increase in sales of both modified and industrial bitumens) and as a leading supplier of road bitumens in Poland. The Company's bitumen products were sold to support work under a number of road contracts, both in Poland and abroad. In 2021, as in the previous years, the key market for bitumens was Poland. According to the Company's estimates, its share in the Polish bitumen market in 2021 was close to 47%. Exports, which accounted for approximately 27% of total bitumen sales, were also important for the 2021 performance. The largest interest in the product was again seen in Romania. An important factor behind the Company's sales performance was the situation prevailing on the road infrastructure market. The year 2021 was a period of busy work in the road sector both at home and abroad. Despite the challenging market conditions faced by European economies due to the pandemic and the macroeconomic environment (including fluctuations in foreign exchange rates, rising commodity prices, disruptions in the global supply chain and growing inflation), the Company achieved its objectives. An opportunity to increase the Company's sales was provided by temporary supply constraints experienced by competitors, which had a positive impact on the final 2021 results.

In 2021, the Company was also traded in bunker fuels, with vessel operators on the Baltic Sea as its key target market. The objectives pursued in 2021 were to efficiently market marine fuel, that is to maintain sales of MGO, and to further develop alternative low-sulfur (hybrid) bunker fuels. Volatility of feedstock prices created challenging conditions for pursuing the Company's budget targets in the marine fuel area, affected its ability to serve the market, and as a result drove volumes slightly below the expectations. An opportunity to increase sales of hybrid fuels in the longer term is provided by initiated projects to enhance manufacturing efficiency in this product group.

5.5 Export markets

In 2021, Grupa LOTOS S.A. exported approximately 967 million tonnes of products, with naphtha representing 46% of the volume.

The Company's other main export products by volume were: heavy products (bitumens and heavy fuel oil), base oils, jet fuel, lubricating oils, reformate, and motor gasoline.

Grupa LOTOS S.A.'s export fuels are shipped by land and sea, with the majority of such products delivered by tankers through the handling infrastructure managed by Naftoport. Transhipment takes place through dedicated product pipelines, approximately 12 kilometres in length, for unleaded petrol, reformate, diesel oil, aviation fuel, naphtha, and fuel oil. Tankers with a capacity of 6 to 30 thousand tonnes are used to carry the products.

5.6 Logistics supporting the Refining & Marketing segment

The LOTOS Group consistently adapts its logistics operations to the requirements of its trading operations and builds an efficient distribution system meeting the expectations of its customers, while being continually optimised. The purpose of those measures is to build an optimum logistics chain that would function efficiently in the constantly changing external and internal environments.

Grupa LOTOS enjoys considerable cost advantages because of its direct access to product and feedstock pipelines linking the refinery in Gdańsk to the liquid fuel handling facilities at Port Północny. Maritime transport plays the key role in the Company's export of oil products, while accounting for a significant portion of feedstock deliveries and components used in production processes.

In 2021, the Company received approximately 7.2 million tonnes of crude oil from 87 tankers through PPPP Naftoport, including 12 cargoes of oil from the B3 and B8 fields and five cargoes of Lithuanian oil.

The Company also transshipped approximately 1.48 million tonnes of petroleum products and fuel components using 143 vessels, including 90 tankers chartered directly by LOTOS Group. A total of 230 tankers were handled, carrying approximately 8.7 million tons of crude oil and products.

Map 3.Logistics infrastructure of the LOTOS Group

Source: the Company.

In 2021, the Company optimised its inventory structure in order to achieve the minimum level of inventory holding costs while securing the commercial needs of the LOTOS Group.

As part of its efforts to optimise operating costs, the Company continued to work on its use of rolling stock, which yielded numerous benefits in terms of costs and the number of rail tank cars used. At the same time, it made further upgrades to its railway infrastructure to accommodate loading of tank cars with a payload capacity of up to 22.5 tonnes per axle, which significantly increased daily shipments of oil products and eliminated the need to load and dispatch about 3,100 rail tank cars per year while keeping the volume unchanged.

In secondary logistics of fuels, the Company adopted a model of cooperation with transport companies that guaranteed appropriate flexibility in customer service with fixed costs curbed to the minimum.

In 2021, the Company continued to develop small marine cargo handling. Its transhipment terminal on the Martwa Wisła river is planned to be launched in 2024.

Seeking to expand its capacity to dispatch refinery products and to adapt its infrastructure to conditions prevailing on the domestic fuel market, the Group completed a project to construct the fourth rail loading facility, placed in service in May 2021.

In 2021, the Company deployed B2B interfaces for electronic data exchange with PKN Orlen. Interfaces for data exchange with Anwim were also designed and developed, while the production launch is expected to take place in 2022. The Shell data exchange upgrade project is also underway; it was commenced in 2021 and is scheduled to end in 2022. However, the largest effort was given to prepare IT systems at LOTOS Asfalt to spin off the processing refinery from Grupa LOTOS. The first stage of the project was completed in November 2021, and the second stage, including the switchover of all dispatch systems, is currently under way.

In response to market demand, contracts to expand and upgrade the fuel terminal in Piotrków Trybunalski were signed by the Company on January 14th 2020. After nearly two years of arrangements, design work and preparations, a building permit for the terminal was obtained on November 15th 2021, and construction work began. The project will quadruple the terminal's storage capacity, to about 11,000 cubic metres, while doubling the amount of fuels it can handle. The terminal will allow the distribution of additive-enhanced gasoline, diesel and liquefied petroleum gas (LPG) at maximum filling speeds permitted by law. Owing to the technical solutions applied, the terminal will be put into operation at the "highest" market standard, also in terms of process automation. Once the occupancy permit is obtained, dispatch of all products from the terminal will begin later this year to enable the terminal to be included in the contracting of handling capacities as of the beginning of 2023.

5.6.1 Storage and distribution of fuels

LOTOS Terminale S.A. is the business centre responsible for professional fuel storage and distribution operations throughout Poland.

The Company operates four fuel depots in Czechowice-Dziedzice, Poznań, Rypin and Piotrków Trybunalski (currently being upgraded), where it handles almost 2 mcm of fuels annually.

LOTOS Terminale has a subsidiary LOTOS Biopaliwa, which produces 100 thousand tonnes of biofuel components per year.

5.6.2 Railway transport

An important element of LOTOS Group's production security is the ability to dispatch products by rail from the refinery in Gdańsk. LOTOS Kolej, a specialised rail operator, is responsible for the provision of comprehensive rail logistics services throughout the Group.

In 2021, LOTOS Kolej provided the following railway services:

- rail freight transport in Poland,
- independent freight transport services in Germany and the Czech Republic,
- traction services,
- trainload and non-trainload services,
- maintenance of rolling stock,
- eco-friendly cleaning of rail tank cars,
- international rail freight,
- provision of railway siding and freight forwarding services to the LOTOS Group,
- lease of rail cars,
- training services for train drivers, shunters and rolling stock inspectors.

The year 2021 was a year of growth for the freight market in Poland. As at the end of December 2021, 112 carriers provided freight transport services under licences issued by the President of the Office of Rail Transport. Between January and December 2021, they transported 243.6 million tonnes of cargo, 9.1% more than the year before. At the same time, the average haul distance fell, which resulted in a slightly lower (7.2%) increase in freight work (measured in tonne-kilometres) between January and December 2021.

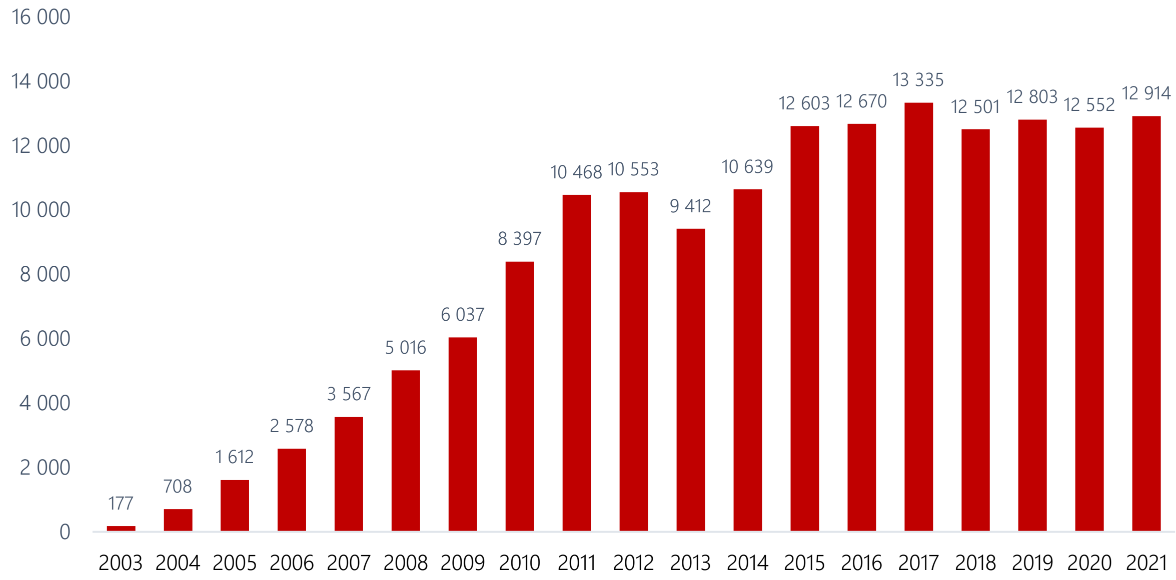
Table 3. **Changes in the Polish rail freight market**

	2021	2020	Change 2021/2020
mass of cargo carried (million tonnes)	243.63	223.24	9.10%
tonne-kilometres (million)	55,984.35	52,217.93	7.20%
train-kilometres (million)	81.62	77.5	5.30%

Source: LOTOS Kolej's in-house analysis based on the Office of Rail Transport data.

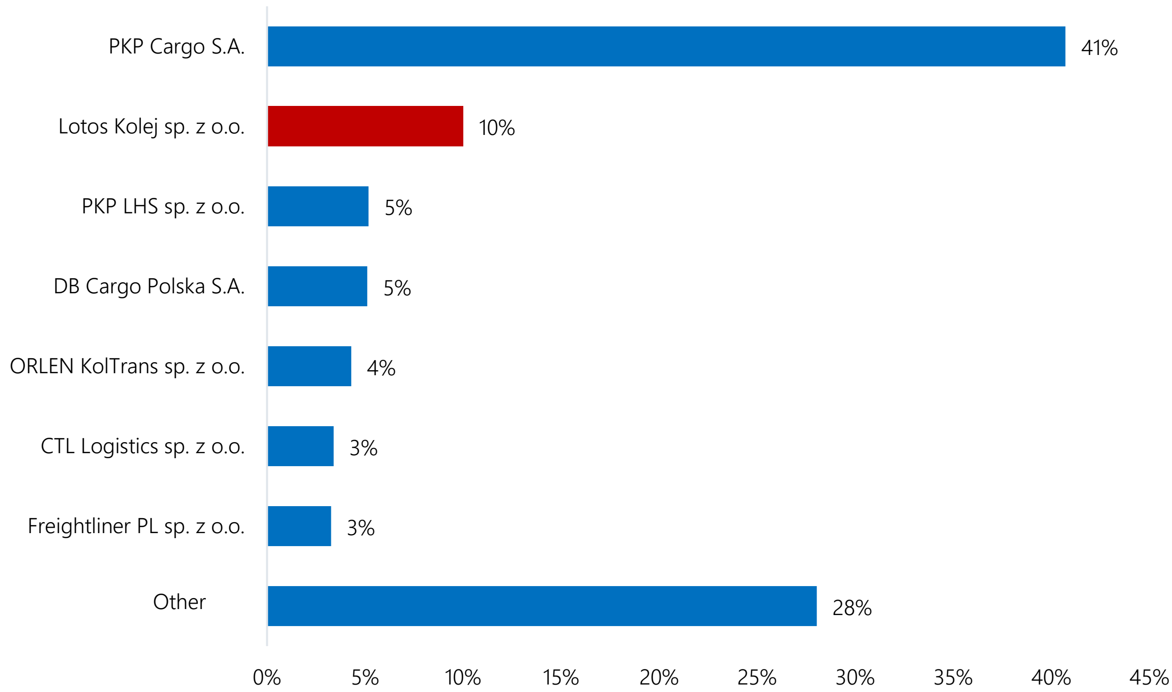
In 2021, LOTOS Kolej maintained its runner-up position in the market in terms of freight workload, despite a decrease in its share in the Polish rail freight market (calculated by freight workload) from 10.36% in 2020 to 10.00% in 2021. This share decreased despite a rise in freight workload, from 5,407 million ntkm (net tonne-kilometres) in 2020 to 5,600 million ntkm in 2021 (an increase of 3.6%) and a 2.9% increase in the total tonnage carried (from 12,552 thousand tonnes in 2020 to 12,914 thousand tonnes in 2021), of which 8.85 million tonnes were hazardous materials – the segment of the rail freight market in which the company has been the market leader for years.

Figure 29. **Rail freight handled by LOTOS Kolej in 2021 (thousand tonnes)**



Source: in-house analysis of LOTOS Kolej

Figure 30. **Share in domestic rail freight transport in January–December 2021 (tonne-kilometres)**



Source: in-house analysis based on the Office of Rail Transport data.

Under contracts concluded in 2021, LOTOS Kolej purchased two and leased twelve modern electric locomotives. In the reporting period, LOTOS Kolej continued its purchases of modern intermodal rolling stock, co-financed with a PLN 74 million subsidy obtained under the Infrastructure and Environment Operational Programme for 2014–2020. The project was designed to increase LOTOS Kolej's share in the intermodal transport market starting from 2020.

The company continued to expand its transport business in Germany. In 2021, using its own and German train drivers, the company transported more than 565 thousand tonnes of freight. By expanding the operations in that region, LOTOS Kolej broadened its offering, while providing its customers with fast and reliable transport services between Poland and Western Europe. LOTOS Kolej continued its operations in the Czech Republic. In 2021, using its own train drivers as well as services provided by Czech operators, the company transported over 33 thousand tonnes of freight. In May 2021, the company carried out the first rail transport across the Polish-Lithuanian border, thus implementing the agreement with Lithuanian Railways on the organization of international freight transport.

As a result of the PKP PLK S.A. railroad infrastructure modernization programme, the average commercial speed year-on-year decreased by almost 16% (in 2018: 22.22 km/h, in 2019: 24.24 km/h, in 2020: 25.84 km/h, in 2021: 21.77 km/h). The average train delay time was 535 minutes in 2021 (2020: 382 minutes, a 40% increase)

5.7 Refining & Marketing sales structure

In 2021, the LOTOS Group's Refining & Marketing segment sold 10,736 thousand tonnes of products (down 2.0% year on year), the bulk of which (9,439 thousand tonnes, or 87.9%) was placed on the domestic market. Domestic sales grew 3.3%, while exports fell 29.9% year on year.
At 6,183 thousand tonnes (an increase of 2.26%), diesel oil accounted for a major part of overall sales. Its entire volume was sold domestically. Another product category with a significant share in total sales were gasolines (which sold 1,432 thousand tonnes (down 12.9%)). Sales of heavy products also fell off (to 882 thousand tonnes, down 10.3%), due mainly to lower exports, which accounted for the majority of sales within this product category.

Table 4. **Refining & Marketing sales structure (tonnes)**

	2021			2020		
	domestic sales	exports	total	domestic sales	exports	total
Gasolines	1 379 946	51 773	1 431 719	1 447 539	195 528	1 643 066
Pyrolysis gasoline		450 106	450 106		567 401	567 401
Reformate		52 217	52 217		43 867	43 867
Diesel oil	6 182 935	0	6 182 935	5 912 456	133 837	6 046 294
Bunker fuel	106 213		106 213	109 331		109 331
Light fuel oil	262 671		262 671	235 141		235 141
Heavy products	554 654	327 132	881 786	528 047	454 395	982 443
Jet	187 901	149 748	337 649	75 086	153 538	228 624
Lubricants	35 032	57 895	92 927	34 570	42 673	77 243
Base oils	9 252	158 109	167 361	13 166	166 987	180 153
LPG	268 050	0	268 050	246 785	975	247 760
Other petroleum products	452 670	49 897	502 567	534 643	63 582	598 225
TOTAL	**9 439 324**	**1 296 877**	**10 736 201**	**9 136 763**	**1 822 784**	**10 959 547**
Crude oil (commodity/feedstock)	1058	0	1 058	80583		80 583
TOTAL	**9 440 382**	**1 296 877**	**10 737 259**	**9 217 346**	**1 822 784**	**11 040 130**

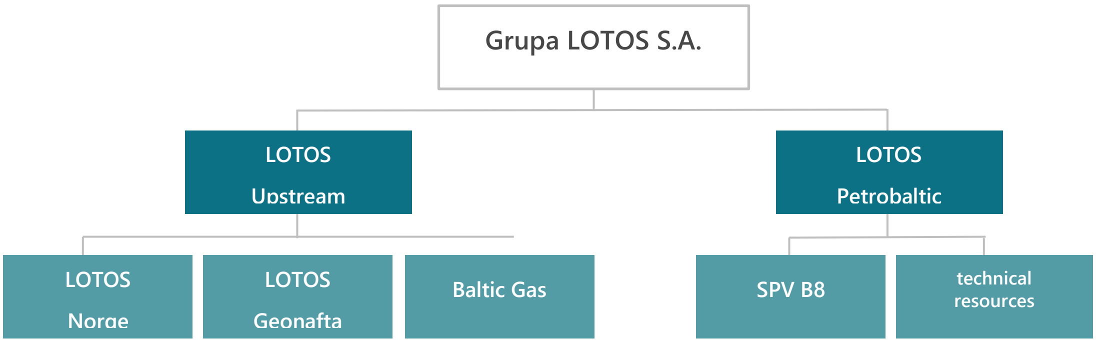
Source: the Company.

6. LOTOS Group's exploration & production activities

6.1 Organisation of the Exploration & Production segment

As at December 31st 2021, the LOTOS Group's Exploration & Production segment was organised in accordance with the business structure chart shown below.

Chart 1. **Business structure of the Exploration & Production segment**
As at December 31st 2021



Source: the Company.

The LOTOS Group's exploration and production activities are carried out by two dedicated entities: LOTOS Petrobaltic S.A. and LOTOS Upstream Sp. z o.o.

LOTOS Upstream (LUPS) pursues its business development plans with the support of the following subsidiaries: LOTOS E&P Norge AS (operations on the Norwegian Continental Shelf), AB LOTOS Geonafta and its subsidiaries (onshore operations in Lithuania), Baltic Gas Sp. z o.o., Baltic Gas i wspólnicy sp. z o.o. sp.k. (special purpose vehicles established to carry out the B4/B6 gas field development project in the Baltic).

LOTOS Petrobaltic and its subsidiaries focus on the exploration and production as well as oilfield operation and services in the Baltic Sea, including production of crude oil and associated natural gas from the B3 field, development of the B8 field (crude oil and associated natural gas) to start full-scale production, and execution of exploration projects in the Baltic Sea. Simultaneously, LOTOS Petrobaltic is launching business development initiatives to leverage its engineering, project execution and design capabilities and to provide services for the offshore sector. Their objective is to diversify the company's business and revenue sources.

6.2 Upstream assets and production volume

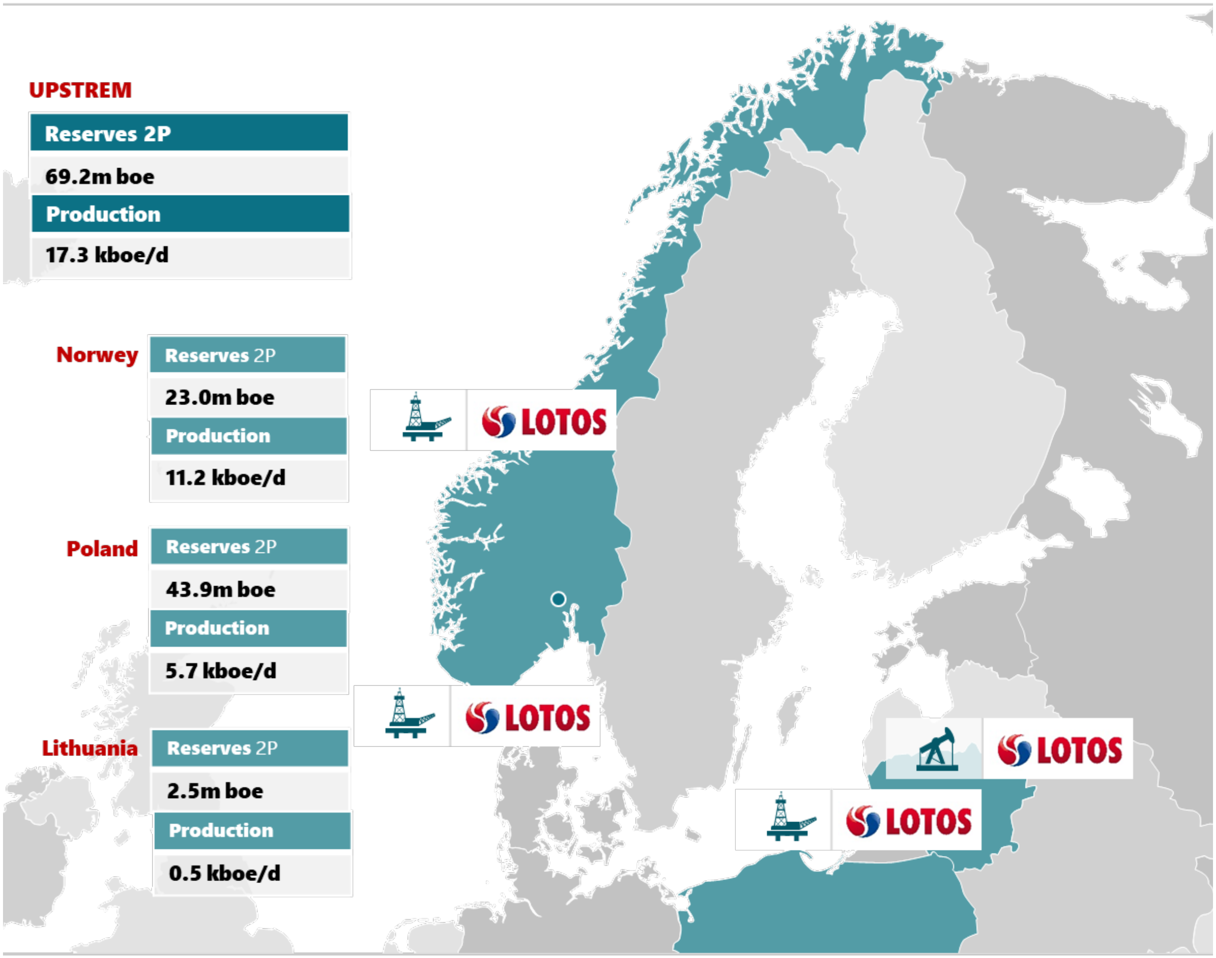
The LOTOS Group is engaged in exploration and production activities in Poland, Norway and Lithuania. In 2021, hydrocarbons were produced from fields located in:

- the Baltic Sea – mainly crude oil with a small amount of associated natural gas,
- Norwegian Continental Shelf – natural gas and condensate (i.e. light crude oil) with a higher share of gas from the Heimdal and Sleipner fields, as well as crude oil from the Yme field (as of October 2021).
- onshore Lithuania – crude oil.

In 2021, the LOTOS Group's average daily production of crude oil and natural gas was 17.3 thousand boe/d (a decrease of 14.6% year on year). Approximately 64% of that total output, i.e. 11.2 thousand boe/d, came from the Norwegian fields. The Baltic fields, with the average output of 5.7 thousand boe/d, accounted for 33% of the total volume. The remaining 3% of production (0.5 thousand boe/d) came from fields in Lithuania. The share of crude oil in total production volumes was 53%, with natural gas accounting for the balance (47%).

At the end of 2021, the LOTOS Group's total 2P (proved and probable) reserves were estimated at 69.2 mboe, including 57.5 mboe of crude oil (83% of the total 2P reserves) and 11.7 mboe of natural gas (17% of the total 2P reserves).

Map 4. **LOTOS Group's hydrocarbon reserves and output** 2P oil and gas reserves as at December 31st 2021
Average daily oil and gas output in 2021



Source: the Company.

Table 5. **Product structure of oil and gas sales**

	2021		2020	
	(by volume)	(%)	(by volume)	(%)
Natural gas (million boe)	2.82	45.6%	3.55	44.1%
Oil (mbbl)	3.35	54.4%	4.50	55.9%
Total oil and gas (million boe)	6.17		8.06	

Source: the Company.

6.3 Exploration and production activities in Poland

The LOTOS Group's exploration and production activities in Poland are carried out through two companies, LOTOS Petrobaltic S.A. and LOTOS Upstream Sp. z o.o., as well as their subsidiaries and jointly-controlled entities. The activities are concentrated within the Polish zone of the Baltic Sea.

The LOTOS Group's exploration and production activities in Poland are conducted through its subsidiaries and jointly-controlled entities under a total of nine licences, including: three offshore oil and gas exploration, appraisal and production licences covering the Łeba, Rozewie and Gotland areas, and four offshore licences for the production of hydrocarbons from the B3, B8, B4 and B6 fields. Until 2021, LOTOS Petrobaltic also held interests in onshore licences in Poland: 49% interest in the joint licence with PGNiG S.A. in the Górowo Iławeckie area and 100% interest in the Młynary licence area. In 2021, a decision was made to relinquish interests in onshore licences.

In 2021, LOTOS's average daily hydrocarbon production in Poland was 5.7 thousand boe/d (+7.4% year on year), which accounted for 33% of the LOTOS Group's total production volume. Oil was produced from the B3 and B8 fields in the Baltic Sea.

As at the end of 2021, the LOTOS Group's P2 hydrocarbon reserves in Poland totalled 43.9 mboe (including 40.1 million boe of crude oil and 3.8 million boe of natural gas), which accounted for 63% of the Group's total 2P reserves.

In parallel to its exploration and production operations in Poland, in 2021 LOTOS Petrobaltic launched development initiatives to diversify its business and revenue sources, including work to enable its entry into the newly emerging offshore wind farm market. In addition, in November 2021, LOTOS Petrobaltic, together with Grupa LOTOS S.A. and Grupa AZOTY S.A., published 'Green Paper for the Development of CCS in Poland'. The paper was drawn up as part of LOTOS Petrobaltic's feasibility analysis for projects involving geosequestration of carbon dioxide (underground storage of CO_2). The document widely analysed the legislative environment as well as the technical and infrastructure challenges.

6.3.1 Competition for the upstream business

Operators exploring for hydrocarbon deposits, appraising them and producing hydrocarbons from fields in Poland are mainly companies majority-owned by the Polish state. The leader is PGNiG, which:

- conducts exploration and appraisal work in 47 licences (43 on its own and four in partnership with other entities). At the end of 2021, this represented 66% of all oil and gas exploration and prospecting licenses issued in Poland.
- has 188 licenses for oil and gas production from fields (185 on its own, three in partnership with other entities). At the end of 2021, this represented over 96% of all licenses issued.

The LOTOS Group is the leader in exploration and production within the Polish zone of the Baltic Sea. All the three combined offshore hydrocarbon exploration, appraisal and production licences and all the four licences for production of hydrocarbons from oil and gas fields within the Polish Economic Zone of the Baltic Sea have been issued to the LOTOS Group's subsidiaries and their joint ventures. Under the production licences covering the B4/B6 gas fields, work is being carried out in partnership with CalEnergy Resources Poland Sp. z o.o. The project is to be delivered through special purpose vehicles Baltic Gas Sp. z o.o. and Baltic Gas Sp. z o.o. i wspólnicy Sp.k. LOTOS holds a 51% interest in the project.

Table 6. **Companies holding licences for exploration and production of hydrocarbons from Polish fields** As at December 31st 2021

	Licences for exploration and appraisal of hydrocarbon deposits	Licences for production of hydrocarbons from sources in Poland
PGNiG S.A.	47 (including 4 with Orlen Upstream)	188 (including 3 with Orlen Upstream)
Orlen Upstream Sp. z o. o.	12 (including 4 with PGNiG)	3 (with PGNiG)
LOTOS Group	3 (including 1 with PGNiG)	4
Northam Sp. z o.o.	2	
Gemini Resources Ltd.	2	
Palomar Capital - San Leon Energy BV	2	
San Leon Energy PLC	2	
UOS Energy Sp. z o.o.	2	
Central European Petroleum Ltd	1	
KGHM Polska Miedź SA	1	
Trias Sp. z o.o.	1	1
ZOK Sp. z o.o.		2
Total number of licences awarded	**71**	**195**

Source: Public Information Bulletin of the Climate Ministry, Reports and statements on licence awards – December 2021. https://bip.mos.gov.pl/pl/koncesje-geologiczne/raporty-i-zestawienia-dotyczace-udzielonych-koncesji-w-tym-zestawienia-otworow-wiertniczych/raporty-i-zestawienia-rok-2021/raporty-i-zestawienia-grudzien-2021-r/

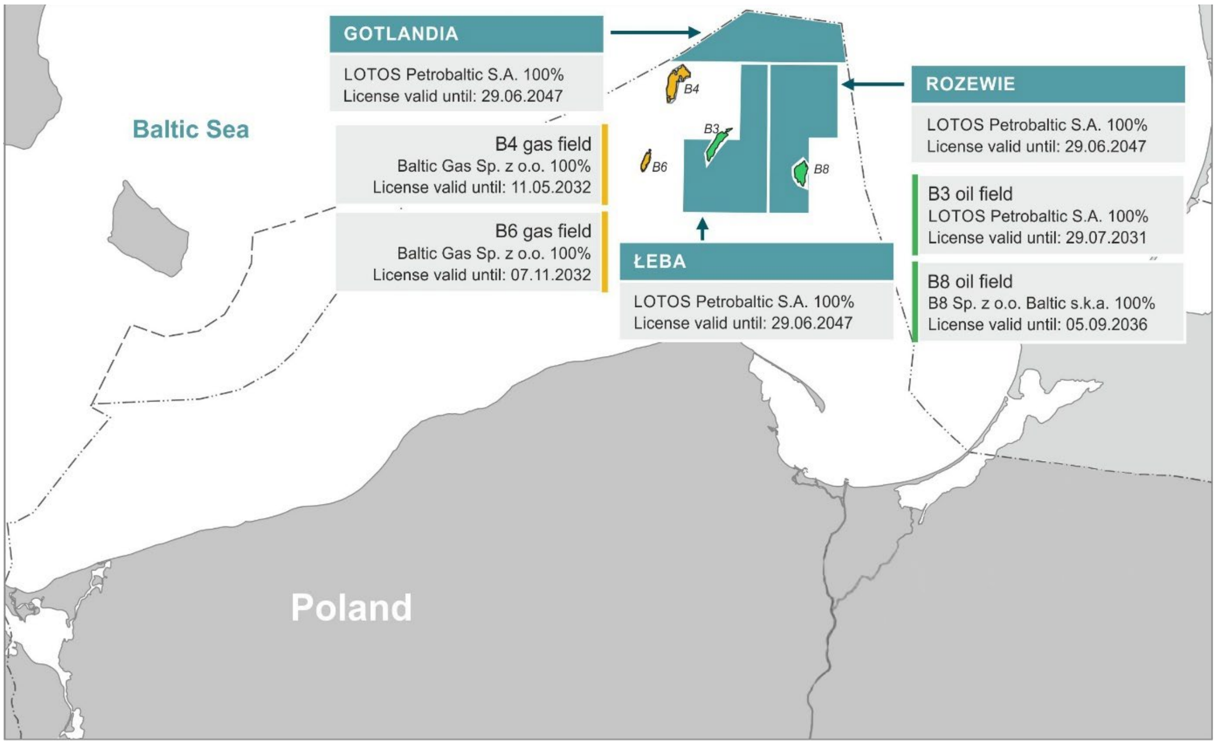
6.3.2 Key assets of the LOTOS Group (production levels and licences)

The LOTOS Group's key licence assets in Poland include:

- B3 production field: In 2021, the average daily output of crude oil and associated natural gas was 2.3 thousand boe/d (up +41.4% year on year). The year-on-year increase in production rates was a result of a successful workover programme, with a total of eight wells (including two injectors) worked over in 2020, In addition, the increase in production was attributable to the drilling of the B3-13C well (spud of the B3-13B well), brought online in May 2021, and the workover of the subsea B3-5 well, where the production was resumed in August 2021. As at the end of 2021, the B3 field's remaining recoverable reserves were estimated at 11.8 million boe. Based on the current licence validity date, production from the field is expected to continue until 2031;
- B8 production field: In 2021, the average daily output of crude oil and associated natural gas was 3.4 thousand boe/d (up -7.7% year on year). As at the end of 2021, the B8 field's remaining recoverable reserves were estimated at 32.1 million boe. Based on the current licence validity date, production from the field is expected to continue until 2036;
- B4/B6 gas fields under preparation for development. The project is to be delivered through special purpose vehicles Baltic Gas Sp. z o.o. and Baltic Gas Sp. z o.o. i wspólnicy Sp.k. in partnership with CalEnergy Resources Poland Sp. z o.o. LOTOS holds a 51% interest in the project. The 2C (contingent) recoverable resources of the B4/B6 fields are estimated at 4.8 billion cubic metres (for the 100% interest). A final investment decision (FID) for the project is under way.

In addition, the Company is engaged in exploration and appraisal work within the areas covered by its licences to discover additional oil and gas resources. In 2021, work was ongoing in the Gotland, Łeba and Rozewie offshore licence areas (LOTOS Petrobaltic's interest: 100%) to develop a regional structure and tectonic model, which was expanded with additional geological analyses. In onshore licences, cameral work was under way, but following analyses, it was decided to relinquish both the Młynary licence area (with a 100% LOTOS Petrobaltic's interest) and the Górowo Iławeckie onshore licence area (where PGNiG, the operator, held a 51% interest and LOTOS Petrobaltic held a 49% interest).

Map 5. Licences held by the LOTOS Group companies in Poland
As at December 31st 2021



Source: the Company.

6.3.3 Logistics

Crude oil and associated natural gas are produced from the B3 field using the Baltic Beta rig and the PG-1 unmanned drilling rig. All produced crude oil is transported by tankers and sold to Grupa LOTOS S.A. Natural gas is transported via a subsea 80 km pipeline to the CHP plant in Władysławowo, owned by Energobaltic Sp. z o.o. (wholly-owned subsidiary of LOTOS Petrobaltic).

Oil production from the B8 field is carried out by the Central Production Facility. All produced crude oil is transported by tankers and sold to Grupa LOTOS S.A. Natural gas is transported via a subsea pipeline to Energobaltic's CHP plant in Władysławowo.

In September 2021, the CALM buoy and the transmission infrastructure components were replaced, and its anchoring system on the B8 field was strengthened. Another tanker providing oil storage and transport services was also contracted through Miliana Group companies; the B8 field tanker was replaced in November 2021.

In 2021, the Petro Giant drilling rig continued workover activities on the B3 field (production wells in the PG-1 unmanned platform area, B3-5 subsea production well and B3-13C well (sidetrack of the B3-13B well)). The ongoing well workover programme is designed to maximise recovery rates and enhance production.

Sea logistics services in the Baltic Sea region are provided by the Miliana Shipholding Group. These services include, but are not limited to: collection and storage of crude oil in the production area, transport of crude oil from the fields to the port, rescue assistance for the platforms, transport of personnel, equipment and materials as part of handling the current processes and work on the platforms, as well as specialized work related to the replacement of infrastructure on the operated fields.

6.4 Exploration and production activities in Norway

Exploration and production activities in Norway are carried out through subsidiary LOTOS Exploration & Production Norge AS (LOTOS Norge) of Stavanger.

At year-end 2021, LOTOS Norge held interests in 30 licences for exploration, appraisal and production of hydrocarbon reserves in the Norwegian Continental Shelf, compared with 28 licences at the end of 2020. On March 26th 2021, the company was formally awarded three new licences in the Awards in Predefined Areas (APA) 2020 licensing round: PL 1098 (50% interest), PL 1099 (30% interest) and PL 1091 (20% interest). The PL 1098 and PL 1099 licences are located within the new development project NOAKA, and the PL 1091 licence lies in the Sleipner area. In February 2021, under the company shareholders' resolution, the company relinquished its interest in licence PL 871 in the Heimdal area.

LOTOS takes steps to develop its portfolio of concessions in Norway on a regular basis. On September 8th 2021, LOTOS Norge submitted applications in the APA licensing 2021 round. On January 18th 2022, following the conclusion of the licensing round, LOTOS Norge received an offer to participate in four of the licences applied for: PL 1135 (30% interest, Operator: PGNiG with a 70% interest), PL 1142 and PL 1143 (17.94% interest, Operator: AkerBP with a 73.01% interest) and PL 1144 (30% interest, Operator: AkerBP with a 40% interest). Three licences are located in the NOAKA project area, where LOTOS will cooperate with AkerBP. One of the areas, applied for jointly with PGNiG, is located in a part of the North Sea where the company has not yet explored for or produced hydrocarbons.

In 2021, LOTOS Norge, operating as part of a consortium, produced natural gas and condensate from fields located in the Heimdal and Sleipner areas. In October 2021, first oil was produced from the Yme field. In 2021, the LOTOS Group's average hydrocarbon production in Norwegian fields was 11.2 thousand boe/d for the LOTOS interest (22.8% less year on year), which accounted for 64% of its total production volume. As at the end of 2021, the LOTOS Norge's 2P hydrocarbon reserves in Norway totalled 23.0 million boe (including 15.1 million boe of crude oil and 7.9 million boe of natural gas), which accounted for 33% of the Group's total 2P reserves.

Besides hydrocarbon production, in 2021 in Norway LOTOS Norge carried out field development work, including on the Yme, NOAKA, Trell/Trine fields, as well as exploration work.

6.4.1 Competition for the upstream business

Exploration and production activities on the Norwegian Continental Shelf remained very strong in 2021, despite the continuing COVID-19 pandemic. The year saw a year-on-year increase in hydrocarbon production and a stable level of investments in new field development, additionally supported by the tax relief package introduced in Norway. High production volumes, coupled with high commodity prices, particularly record high prices of natural gas, pushed hydrocarbon revenues on the Norwegian Continental Shelf to an all-time high in 2021.

The following key statistics for 2021 provide a picture of the market environment in Norway[8]:

- 3.97 million boe/day of average hydrocarbon production (an increase of 2.0% year on year),

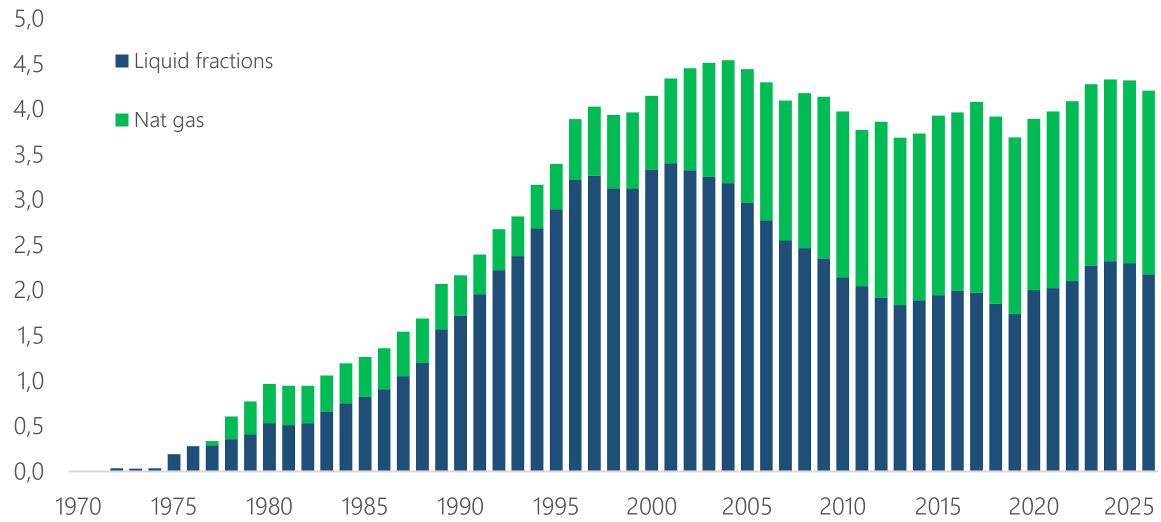
[8] *Source: Norwegian Shelf statistics based on publications and data from the Norwegian Petroleum Directorate.* *https://www.npd.no/en/facts/publications/reports2/the-shelf/the-shelf-in-2021/*

- NOK 174 billion of realised investments, including exploration costs (-1.4% year on year),
- five new fields brought online (Duva, Yme, Solveig, Martin Linge and Ærfugl),
- eight Plans for Development and Operation (PDO) submitted for approval,
- 40 exploration wells drilled,
- 18 new discoveries.

As at the end of 2021, hydrocarbons were produced from a record-high number of fields (94).

In 2021, the daily hydrocarbon production in Norway averaged 3.97 million boe/d (an increase of 2% year on year). Slightly more than half of the production volume, i.e. 51%, was made up of liquid fractions, including: crude oil, condensate and NGL (natural gas liquids). The share of natural gas in the production volume was 49%. The Norwegian Petroleum Directorate, a governmental administrative body, assumes a stable, high level of hydrocarbon production from the Norwegian Shelf over the next five years. The average production volume is projected at approximately 4.2 thousand boe/d until 2026.

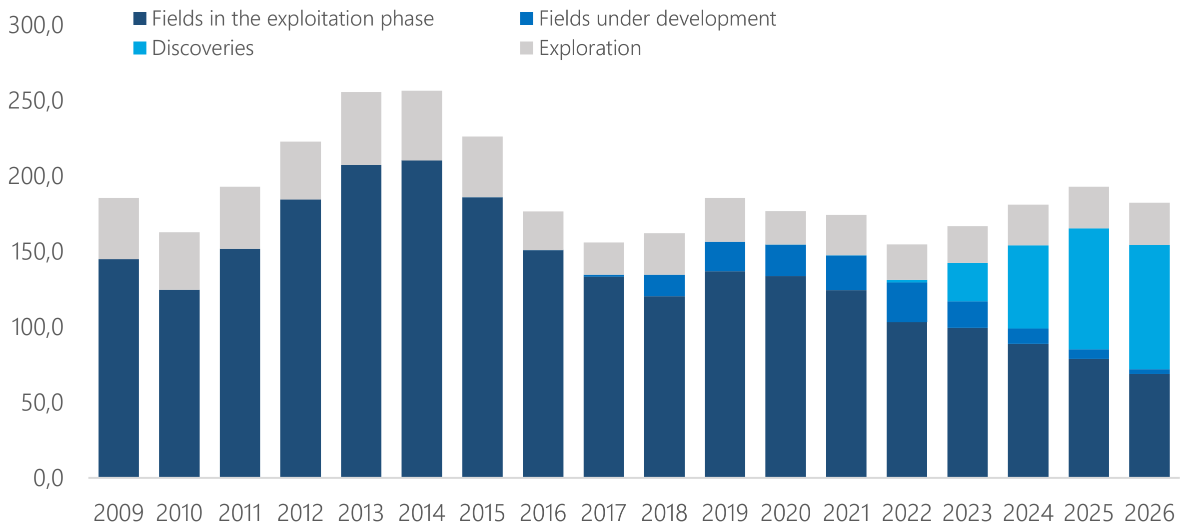
Figure 31. **Historical and planned hydrocarbon production levels on the Norwegian Continental Shelf (million boe/day)**



Source: In-house analysis based on publications and data from the Norwegian Petroleum Directorate.
https://www.npd.no/en/facts/publications/reports2/the-shelf/the-shelf-in-2021/

The year 2021 was characterized by high investment activity of exploration and production companies on the Norwegian Shelf. Total investments, including exploration costs, were NOK 174.1 billion (-1.4% year on year). As part of the activities five new fields were brought online, eight PDO plans were submitted for approval, 40 exploration wells were drilled, and 18 new oil and gas fields were discovered. The Norwegian Petroleum Directorate assumes a stable level of investment activity on the Norwegian Continental Shelf over next five years. The average annual level of investments, including exploration costs, is projected at approximately NOK 175.5 billion until 2026.

Figure 32. **Historical and planned investment levels on the Norwegian Continental Shelf (million boe/day)**

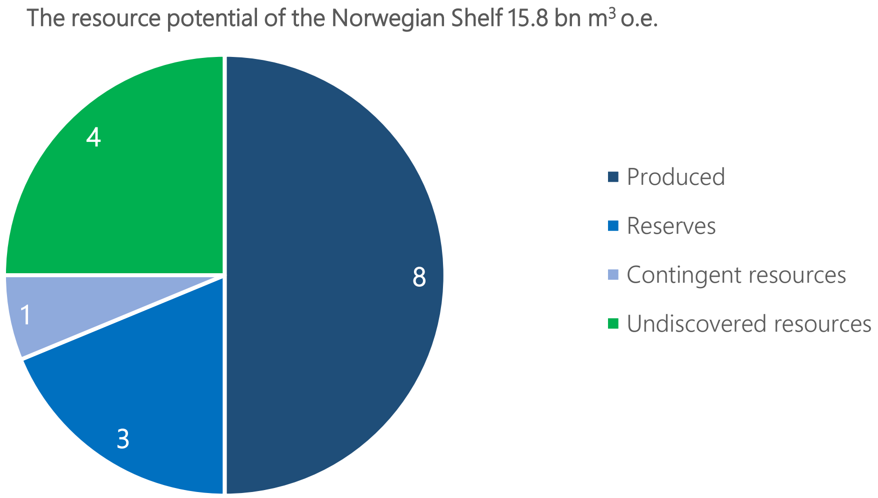


Source: In-house analysis based on publications and data from the Norwegian Petroleum Directorate.
https://www.npd.no/en/facts/publications/reports2/the-shelf/the-shelf-in-2021/

Despite the high production volumes and high investment activity in the development of new fields, greenhouse gas emissions associated with production activities on the Norwegian Continental Shelf are lower. The target is to reduce CO_2 emissions by half by 2030, compared with 2005.

The Norwegian Continental Shelf continues to offer attractive potential resources. According to the estimates of the Norwegian Petroleum Directorate, the total potential resources of the Norwegian Continental Shelf are approximately 15.8 bcm of oil equivalent, of which nearly half has been produced from the fields. A half of the resources, i.e. approximately 8 bcm of oil equivalent, may still be produced. This includes both proved reserves in production fields and fields under development (ca. 2.7 bcm in aggregate), contingent resources in new discoveries (ca. 1.4 bcm), as well as prospective resources identified in exploration licence areas (ca. 3.8 bcm, or 24% of total potential resources).

Figure 33. **Potential resources of the Norwegian Continental Shelf (bcm of oil equivalent)**



Source: In-house analysis based on publications and data from the Norwegian Petroleum Directorate.
https://www.npd.no/en/facts/publications/reports2/the-shelf/the-shelf-in-2021/

As at the end of 2021, 36 exploration and production companies were active on the Norwegian Continental Shelf, including: 23 companies as a licence operator, and 13 companies as a non-operator partner. In recent years, the number of active market players has declined due to the ongoing asset consolidation processes (from the record-high number of 56 companies active in 2013). The leading position on the Norwegian Continental Shelf is maintained by Equinor, which is a shareholder in 283 licences and accounts for approximately 33% of the total volume of production from the Norwegian Continental Shelf. LOTOS E&P Norge, with a current daily production volume of 11.2 thousand boe/d and 2P reserves of 23 million boe, holds a 0.3% share in the market.

In summary, the Norwegian Continental Shelf remains an attractive area for E&P companies due to, among other things the high resource prospectivity, still high potential for new oil and gas discoveries, positive trends in cost reduction, improved efficiency and development of new technologies, active market, as well as stable fiscal and regulatory environment.

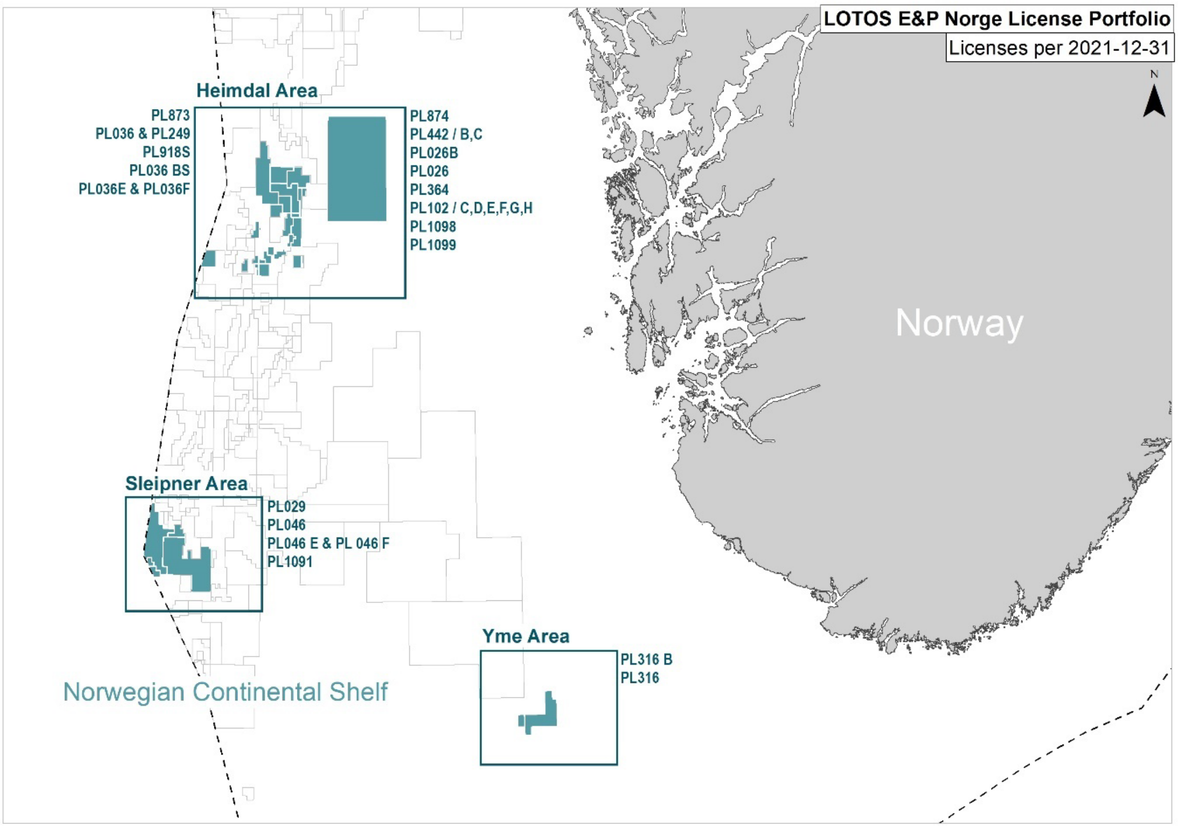
6.4.2 Key assets of the LOTOS Group (production levels and licences)

The LOTOS Group's key licence assets in Norway include:

- production fields in the Heimdal area: Atla (20% interest held by LOTOS Norge), Skirne (30% interest), Vale (25.8% interest) and Heimdal (5% interest). The field's 2P recoverable reserves are estimated at 0.4 million boe as at December 31st 2021 (LOTOS Norge's interest); In 2021, the company's average production from Heimdal fields was 2.0 thousand boe per day (a decrease of 1.8% year on year);
- Sleipner producing fields, namely Sleipner Vest and Sleipner East, with Gungne and Loke satellite fields (15% interest held by LOTOS Norge). The field's 2P recoverable reserves are estimated at 9.2 million boe as at December 31st 2021 (LOTOS Norge's interest); In 2021, the company's average production from Sleipner fields was 7.0 thousand boe per day (a decrease of 19.8% year on year);
- Utgard producing field (17.36% interest held by LOTOS Norge). Production supported by the Sleipner area infrastructure. The field's 2P recoverable reserves are estimated at 1.0 million boe as at December 31st 2021 (LOTOS Norge's interest); The company's average output in 2021 was 2.1 thousand boe per day (-43.4% year on year). The Utgard field's reserves and recovery rates are lower than expected due to problems caused by considerable break-through of water into the production wells.
- Yme field at a final stage of development and offshore commissioning (20% interest held by LOTOS Norge). In October 2021, first oil from the Yme field – production started from one well. Currently, the cleaning and testing of three more production wells is underway and rig commissioning continues. The field's 2P other recoverable reserves are estimated at 12.5 million boe as at December 31st 2021 (LOTOS Norge's interest); The average production from the Yme field over the next five years is expected to reach approximately 5,000 bbl/day for LOTOS Norge's interest.
- new NOAKA development project: development of deposits discovered north of the Heimdal hub: Frigg Gamma Delta, Rind, Langfjellet, Liatårnet, Fulla, Frøy (with LOTOS Norge's average effective interest of 12.3%), as well as Krafla and Askja fields, in which LOTOS holds no interests. The project is at the stage of preparing the field development plan. The total potential of the NOAKA project is more than 500 million boe of recoverable reserves (for the 100% interest), with first oil possible in 2027.
- new Trell/Trine development project: development of discovered fields in the Heimdal area (average effective share of LOTOS Norge: 11.9%). The project is at the stage of preparing the field development plan. Potential resources of the Trell/Trine fields are approximately 2.6 mboe per LOTOS's interest, with first oil possible in 2025.

In addition to its interests in the fields, LOTOS Norge also holds interests in the Heimdal and Sleipner area gas hubs (5% and 15%, respectively), i.e. the gas and condensate processing and transporting centres. It is worth noting that the Sleipner area is of strategic importance to gas exports from Norway to Central Europe and the United Kingdom.

Map 6. Licences held by LOTOS Exploration & Production Norge AS
As at December 31st 2021



Source: the Company.

6.4.3 Logistics

LOTOS Norge holds interests in licences covering the production infrastructure in the Heimdal and Sleipner fields, including: the Heimdal gas and condensate processing and transport hub (operated by Equinor, LOTOS Norge holds a 5% interest), and the Sleipner gas and condensate processing and transport hub (operated by Equinor, LOTOS Norge holds a 15% interest).

Gas produced from the Heimdal and the Sleipner fields is injected into the Gassled pipeline system, and then delivered to off-take points in the UK and continental Europe (the Netherlands, Germany).

Condensate from the Heimdal field is injected into the Forties Pipeline System (FPS), and then delivered to an off-take point at the Kinneil Terminal/Hound Point in Scotland, where it is processed into final products, i.e. Forties Blend crude oil and gas fractions. Condensate from the Sleipner field is transported via a pipeline to an off-take point in Karsto (Norway), where it is processed into final products, i.e. Gudrun Blend light crude and liquid fractions (NGL).

Production from the Yme field, which is in the final stages of development, will be carried out using the leased Maersk Inspirer platform. The produced crude oil will be loaded onto a tanker and transported to various off-take points, depending on crude oil parameters and market conditions.

6.5 Exploration and production activities in Lithuania

Exploration and production operations in Lithuania are carried out through a subsidiary, AB LOTOS Geonafta of Gargždai. The company is the parent of another group of companies, comprising:

- UAB Genciu Nafta (100% owned by AB LOTOS Geonafta),
- UAB Manifoldas (100% owned by AB LOTOS Geonafta),
- UAB Minijos Nafta (50% owned by AB LOTOS Geonafta).

6.5.1 Competition for the upstream business

There is no active E&P market in Lithuania. The AB LOTOS Geonafta Group companies are the only entities engaged in production of oil from Lithuanian fields. The LOTOS Group owns 100% of the Lithuanian assets, except for UAB Minijos Nafta, where it owns 50% and the remaining investors are: Tethys Oil AB, Odin Energy A/S and private investors.

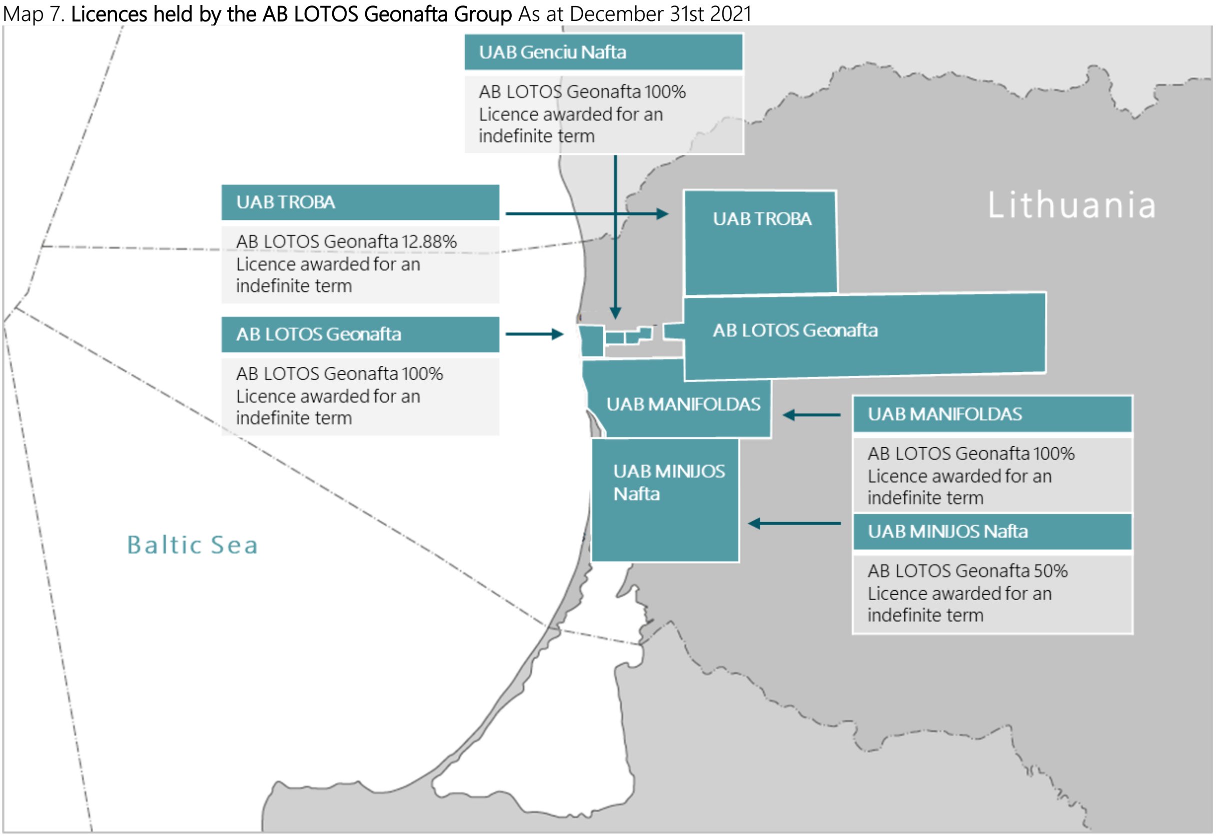
6.5.2 Key assets of the LOTOS Group (production volumes and licences)

The LOTOS Group's average daily output in Lithuania in 2021 was 0.5 thousand boe/d (a decrease of 9.7% year on year), which accounted for 3% of the Group's total production volumes.

Production operations were being conducted within the following onshore blocks: Girkaliai, Genciai, Kretinga, Nausodis, Klaipėda, and Gargždai.

As at the end of 2021, the LOTOS Group's 2P hydrocarbon reserves in Lithuania totalled 2.3 million boe (100% of crude oil), representing 3% of the Group's total 2P reserves.

Map 7. **Licences held by the AB LOTOS Geonafta Group** As at December 31st 2021



Source: the Company.

6.5.3 Logistics

Crude oil from the Lithuanian fields is produced using onshore production infrastructure. Produced crude oil is transported by road to a marine terminal in Liepāja (Latvia), and then is taken to Gdańsk by a tanker ship, where it is fully processed by the LOTOS refinery. All associated natural gas is flared.

6.6 Key development projects of the Exploration & Production segment

POLAND

B8 project: Development of a crude oil field in the Baltic Sea

The project is being carried out by the SPV B8 Sp. z o.o. Baltic S.K.A. In 2021, crude oil and associated natural gas were being produced from the B8 field at an average rate of 3.4 thousand boe per day (up -7.7% year on year). At the same time, work was carried out in 2021 to launch and test a gas compression system. In October 2021, gas transmission commenced from the B8 field to the Energobaltic CHP plant in Władysławowo. In addition, work was carried out to change the configuration of the seawater injection system in order to increase the amount of water injected. The work was successfully completed in October 2021, making it possible to increase the amount of water injected into the reservoir, which helps increase of the reservoir pressure and thus increase of hydrocarbon production. In December 2021, a 30-day test of the platform's all process units including the water injection system was successfully conducted after its reconfiguration. The project is in transition to the billing and closeout phase.

Key parameters of the B8 project (for the LOTOS Group interest):

- LOTOS Group interest 100%
- 2P reserves 32.1 million boe as at December 31st 2021 (91% crude oil, 9% natural gas)
- Current output 3.4 thousand boe/d (average in 2021)

The Central Production Facility achieved full capacity in the fourth quarter of 2020. However, whether oil production volumes will be increased to an average level of 5.0 thousand boe/d within five years will depend on satisfaction of all assumed technical conditions and on prevailing macroeconomic conditions, in particular the global oil prices.

B4/B6 project: Development of natural gas fields in the Baltic Sea

The B4/B6 project consists in the development of natural gas deposits in the Baltic Sea, in partnership with CalEnergy Resources Poland Sp. z o.o. It is being implemented by special purpose vehicles Baltic Gas Sp. z o.o. and Baltic Gas Sp. z o.o. i wspólnicy Sp. k. LOTOS's interest in the project is 51%. The 2C recoverable resources of the B4/B6 fields are estimated at 4.8 billion cubic metres (for the 100% interest).

The project is currently at the stage of preparation for the final investment decision (FID). The technical aspects of the project were defined and the project was prepared for FID in early 2020. However, the original timing of the FID decision coincided with the onset of the Covid-19 pandemic and the crisis in the market for commodities, particularly natural gas, that saw the lowest price levels in history. These factors were not conducive to undertaking FID as originally planned. Over the course of 2021, there was a reversal of trends in the natural gas market, with the commodity now trading at record high levels. However, the market is strongly volatile, with high uncertainty as to the level of prices in the medium to long term. In addition, concerns about yet more coronavirus mutations and their negative impact on the global economy are resurfacing. The current market volatility and uncertainty are not conducive to making business decisions about new projects, and the final investment decision concerning the B4/B6 project cannot be expected until the market situation is considered stable.

As part of the project, work continues in the so-called preparatory phase (prior to the FID decision). In particular, in 2021 the following key tasks were carried out: (i) the process to obtain the required administrative, environmental and corporate approvals was under way; (ii) the environmental permit for the onshore facility was obtained; (iii) archaeological tests were carried out along the route of the planned pipeline; (iv) dialogue was conducted with administrative agencies to approve updates to the administrative decisions issued.

Key parameters of the B4/B6 project (LOTOS interest):

- LOTOS interest: 51%
- 2C reserves: 17.9 million boe as at December 31st 2021
- and the final investment decision cannot be expected until the market situation is considered stable.
- expected average output: 4.2 thousand boe/d (for 5-year period from production launch)

NORWAY:

Yme project: Development of an oil field in Norway

The YME project is at final stage of development and offshore start-ups. The field operator is Repsol, and LOTOS Norge's interest in the project is 20%. In October 2021, first oil was confirmed – production from one well began. Currently, the cleaning and testing of three more production wells is underway and rig commissioning and upgrades continue, including laying out wiring and pipeline insulation. The first commercial loading of 100,000 barrels of oil produced from the Yme field onto a tanker was completed on December 22nd 2021, and the first sale of oil from the Yme field was confirmed on December 25th 2021. The second shipment of oil from the Yme field took place on January 13th 2022.

The Yme project is being implemented under a new plan for development and operations, approved in March 2018. At the end of 2020, a milestone for timely completion of the work was reached. The Maersk Inspirer platform, which will be used to support production from the field, was towed from the Egrsund shipyard, where conversion work on the platform had been carried out, and was successfully placed on the field. Over the course of 2021, the offshore start-up phase, involving the tie-in and commissioning of production systems, was under way. Another significant milestone was reached in August 2021 when the operator received regulatory approval to start production from the Yme field, using the Maersk Inspirer platform. Concurrently, in May 2021, the operator entered into a number of conditional agreements with Maersk Drilling, Havila Sirius and other entities. Their performance will lead to Repsol taking over responsibility for the permanent operation of the Maersk Inspirer platform and to a change in its ownership.

Development of the Yme field is one of the key strategic projects implemented within the LOTOS Group's exploration and production segment. The field's 2P recoverable reserves are estimated at 12.5 million boe as at December 31st 2021 (LOTOS's interest); The average production from the Yme field over the next five years is expected to reach approximately 5,000 bbl/day for LOTOS Norge's interest.

Key parameters of the Yme project (for the LOTOS interest)

o LOTOS Group interest	20%
o 2P reserves	12.5 million boe/d as at December 31st 2021 (100% crude oil)
o launch of production	October 2021
o expected average output	5.0 thousand boe/d (for 5-year period from production launch)
o operator	Repsol Norge AS.

New development project: NOAKA

The NOAKA project involves the development of discoveries north of Heimdal: Frigg Gamma Delta, Langfjellet, Liatårnet, Rind, Fulla and Froy, where AkerBP is the operator, as well as Krafla and Askja, where LOTOS has no interests and Equinor is the operator. The project is currently in pre-development phase. In September 2021, a major milestone of the project was achieved. In September, LOTOS Norge signed an agreement with AkerBP to harmonise their respective licence interests in the NOA (North of Alvheim) and Fulla areas. The document has defined rules for LOTOS Norge and AkerBP to swap their interests in eight licences: PL873, PL026B, PL364, PL442, PL442B, PL442C, PL874, PL026. As a result of the agreement, LOTOS's effective and uniform interest in licences will be 12.3%. A development concept was selected for the NOA and Fulla licence areas: the DG2 decision gate was reached. The field development plan (DG3) is scheduled to be prepared by the end of 2022, with first oil expected in 2027.

NOAKA is one of the key development projects on the Norwegian Continental Shelf, with total potential of more than 500 million boe of recoverable reserves (for the 100% interest). For the LOTOS Group, the project will be a foundation for long-term development in Norway, in cooperation with key operators on the NCS: AkerBP and Equinor.

New development project: Trell/Trine

The project involves the development of the Trell and Trine fields located in the Heimdal area, with AkerBP as the operator. LOTOS' effective interest in the project will be 11.9%. The project is currently in pre-development phase. In December 2021, a major milestone of the project was achieved. A development concept was selected for the Trell and Trine fields: the DG2 decision gate was reached. The selected concept assumes the development of the FPSO (floating production, storage and offloading) infrastructure in the Alvheim licence area. The field development plan (DG3) is scheduled to be prepared by the end of 2022, with first oil expected in 2025. The Trell/Trine resources attributable to the LOTOS interest are estimated at approximately 2.6 mboe.

6.7 Key new growth initiatives

LOTOS Petrobaltic, as an operator of assets in the Baltic Sea area, has been implementing a number of development initiatives aimed at diversifying its activities and sources of revenue.

CCS/EOR

As part of the initiatives, a report entitled 'CCS - Conceptual Design of CO2 Storage in Water-Contaminated Structures (B-101, Aquifer B3) in the Baltic Sea Area' was commissioned. In the course of further discussions with state authorities, a number of barriers were identified, which were collected in the Green Paper prepared together with Grupa AZOTY S.A. The Paper also identifies opportunities and ways to address certain legal and technical issues. The applied global and, above all, European solutions are also presented in the Paper.

Green H_2

Consortium LPB-NET - AGH was established in order to implement the project submitted to the NCBR NTE competition for the production of green hydrogen from electrolysis on board the LOTOS Petrobaltic Platform. Hydrogen will be produced by electrolysis from seawater, which is in itself an innovative technological solution. It will be burned in the Petrobaltic platform's turbine-generator, mixed with natural gas sent to Energobaltic in Władysławowo and, as the third option, the gas will be compressed and transported onshore. The application will be submitted to NCBR by January 12, where it will be adjudicated by NCBR within 2-3 months.

Floating Wind Turbine (RES) to power the Central Production Facility

Another submission to the NCBR contest. The project is to be submitted to NCBR by January 12th. It involves the construction of a floating wind turbine in the vicinity of the platforms in the B8 field to provide power to these facilities. This would be the first installation of its kind in the Baltic Sea, and the first deployment of the technology in Poland. The project is to be carried out by a consortium of three partners: LOTOS Petrobaltic, Gdansk University of Technology and the Baltic Industrial Group.

In principle, the floating turbine is to power the platform, but also provides LOTOS Petrobaltic with an opportunity to further engage the platform in the development of hydrogen production systems and other energy-intensive systems, e.g. preparation of CO_2 for injection into the deposit using the EOR-CCS technology.

Offshore wind power generation

LOTOS Petrobaltic S.A.'s participation in the research into, construction and operation of offshore wind farms helps build a Polish operator of an offshore fleet and an installer of offshore wind farms (stimulating the heavy industry in Poland) and ultimately an installer of offshore wind farms also in Europe and globally.

The areas of the offshore wind power generation industry in which LOTOS Petrobaltic S.A. develops or intends to develop its competences are:

- Hydrography: As part of the diversification of its activities, LPB provides geotechnical and geophysical survey services in the Baltic Sea to third parties. As a result, LPB is already an active participant in the offshore wind energy market.
- Vessels for construction of offshore wind warms: The rapid growth of offshore wind energy means that there will be a shortage of large installation vessels in the second half of this decade. LPB has taken steps to launch the construction of the following vessels: (i) wind turbine foundation installation vessel (WTFIV); (ii) wind turbine installation vessel (WTIV); (iii) Cable laying vessel (CLV).
- O&M Services: Operation and maintenance of offshore wind power generation units is a key element of the value chain in the long term. Successful market positioning in this area requires the presence of a ship owner and operator of versatile offshore service operation vessels (SOVs) and crew transport vessels (CTVs). LOTOS Petrobaltic S.A., with its experience in conducting maritime operations and in efficient management of a fleet of specialized vessels, having SOVs and CTVs in its resources, may in the future become such an operator, which will enable the company to participate in the offshore wind energy service chain and ensure adequate presence of Polish companies in it. LPB has signed an agreement with GL, PKN, ARP and GPB for the construction and contracting of service vessels.

6.8 Scheduled shutdowns in 2022

Norway:

- Heimdal area: planned shutdown in the second quarter to carry out upgrading works (approximately 10–20 days – shutdown duration to depend on the scope of work being currently discussed with the Operator),
- Sleipner area: no longer shutdowns planned.

Poland:

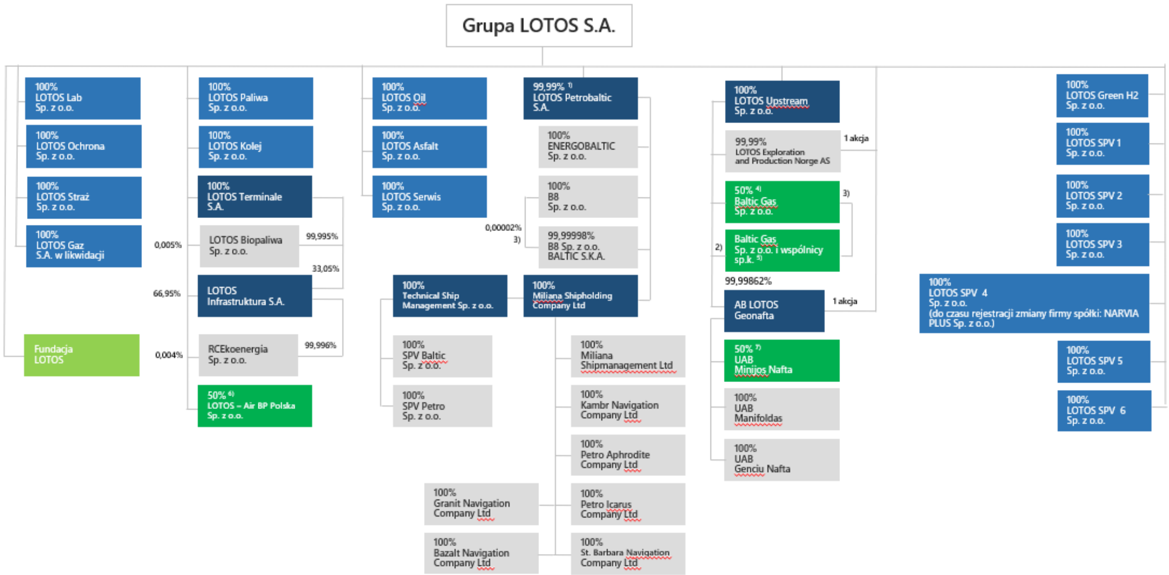
- short, several-day production stoppages are planned in the Baltic Sea, related to logistics operations (approximately 9–12 days in total).

7 Organisation and infrastructure

7.1 Structure of the LOTOS Group

As at December 31st 2021, Grupa LOTOS S.A. was the parent of the following group:

Chart 2.**Structure of the LOTOS Group**
As at December 31st 2021



1) State Treasury – 0.01% 2) Limited partner 3) General partner
4) CalEnergy Resources Poland Sp. z o.o. – 50%
5) CalEnergy Resources Poland Sp. z o.o. – Limited partner
6) BP Europa SE – 50%
7) Odin Energi A/S – 50%

Companies classified as joint ventures; they are not part of the LOTOS Group

Grupa LOTOS S.A. also holds:
an 8.97% equity interest in P.P.P.P. Naftoport Sp. z o. o. (a company of the PERN Group of Płock)
– 17.3% of shares in Grupa Azoty Polyolefins S.A.

Source: the Company.

The LOTOS Group comprises a number of production, trading and service companies, as well as a foundation.

Apart from companies classified as joint ventures and the LOTOS Foundation, all entities shown in the chart above are consolidated using the full method.

As the parent, Grupa LOTOS S.A. defines the Group's business growth strategy and – through participation in their governing bodies – has the power to influence key decisions concerning the scope of business and finances of the Group companies. Equity links between Grupa LOTOS S.A. and its subsidiaries strengthen their trading ties. Grupa LOTOS S.A's transactions with its subsidiaries are executed on arm's length terms.

Changes in the LOTOS Group's structure in 2021:

- Infrastruktura Kolejowa Sp. z o.o. in liquidation – On January 22nd 2021, information was disclosed in the Business Register of the National Court Register that on October 20th 2020 an entry on deletion of Infrastruktura Kolejowa Sp. z o.o. in liquidation from the register became legally valid.
- Acquisition of shares in seven SPVs – On September 29th 2021 Grupa LOTOS S.A. acquired from Kancelaria Gospodarcza EFFEKTI Sp. z o.o. of Poznań shares in the following seven special purpose vehicles currently not engaged in any operating activities, i.e.:
  - → 100% of shares, i.e. 50 shares with a par value PLN 100.00 PLN and a total par value of PLN 5,000.00 PLN in APOLLO PLUS Sp. z o.o. with the registered office in Szczecin,
  - → 100% of shares, i.e. 50 shares with a par value PLN 100.00 PLN and a total par value of PLN 5,000.00 PLN in ARGENT INVEST Sp. z o.o. with the registered office in Gdańsk,
  - → 100% of shares, i.e. 50 shares with a par value PLN 100.00 PLN and a total par value of PLN 5,000.00 PLN in FRIZZ STUDIO Sp. z o.o. with the registered office in Gdańsk,

- → 100% of shares, i.e. 50 shares with a par value PLN 100.00 PLN and a total par value of PLN 5,000.00 PLN in HELIA PLUS Sp. z o.o. with the registered office in Gdańsk,
- → 100% of shares, i.e. 50 shares with a par value PLN 100.00 PLN and a total par value of PLN 5,000.00 PLN in MIDAS CENTER Sp. z o.o. with the registered office in Szczecin,
- → 100% of shares, i.e. 50 shares with a par value PLN 100.00 PLN and a total par value of PLN 5,000.00 PLN in NARVIA PLUS Sp. z o.o. with the registered office in Gdańsk,
- → 100% of shares, i.e. 50 shares with a par value PLN 100.00 PLN and a total par value of PLN 5,000.00 PLN in PUBL SERVICE Sp. z o.o. with the registered office in Gdańsk.

- o Registration of changes in names of the seven SPVs:
  - → ARGENT INVEST Sp. z o.o./LOTOS SPV 2 Sp. z o.o. – On October 15th 2021, the change of name of ARGENT INVEST Sp. z o.o. to LOTOS SPV 2 Sp. z o.o. was entered in the Business Register of the National Court Register.
  - → FRIZZ STUDIO Sp. z o.o./LOTOS SPV 1 Sp. z o.o. – On October 18th 2021, the change of name of FRIZZ STUDIO Sp. z o.o. to LOTOS SPV 1 Sp. z o.o. and the change of name of PUBLIC SERVICE Sp. z o.o. to LOTOS Green H2 Sp. z o.o. were entered in the Business Register of the National Court Register.
  - → HELIA PLUS Sp. z o.o./LOTOS SPV 3 Sp. z o.o. – On October 28th 2021, the change of name of HELIA PLUS Sp. z o.o. to LOTOS SPV 3 Sp. z o.o. was entered in the Business Register of the National Court Register.
  - → APOLLO PLUS Sp. z o.o./LOTOS SPV 5 Sp. z o.o. – On November 9th 2021, the change of name of APOLLO PLUS Sp. z o.o. to LOTOS SPV 5 Sp. z o.o. was entered in the Business Register of the National Court Register.
  - → MIDAS CENTER Sp. z o.o./LOTOS SPV 6 Sp. z o.o. – On November 30th 2021, the change of name of MIDAS CENTER Sp. z o.o. to LOTOS SPV 6 Sp. z o.o. was entered in the Business Register of the National Court Register.
- o LOTOS Vera Sp. z o.o. w likwidacji (in liquidation) – On October 26th 2021, The District Court for the Capital City of Warsaw in Warsaw, 12th Commercial Division of the National Court Register, resolved to delete LOTOS Vera Sp. z o.o. w likwidacji (in liquidation) from the Business Register of the National Court Register. On November 3rd 2021, the entry of October 26th 2021 on deletion of the company from the National Court Register became final.
- o LOTOS Upstream UK Ltd – On November 10th 2021, LOTOS Upstream UK Ltd was deleted from the Companies House in the United Kingdom.
- o Recapitalization in 2021: Baltic Gas Sp. z o.o. – On April 26th 2021, the Annual General Meeting of Baltic Gas Sp. z o.o. resolved to increase the company's share capital by PLN 64,000, from PLN 464,500 to PLN 528,500, through the issue of 1,280 new shares with a par value of PLN 50 per share and a total par value of PLN 64,000. The new shares were acquired at par value by the company's existing shareholders and paid for in cash. The company's ownership structure did not change as a result of the share capital increase. On June 30th 2021, the share capital increase was registered in the Business Register of the National Court Register.
- o Baltic Gas Spółka z ograniczoną odpowiedzialnością i wspólnicy sp.k. – On September 20th 2021, the shareholders of Baltic Gas Spółka z ograniczoną odpowiedzialnością i wspólnicy sp.k. passed resolutions to increase the contribution amounts agreed on by the company's limited partners, i.e.:
  - → the contribution amount of LOTOS Upstream Sp. z o.o. from PLN 117,883,736.00 to PLN 120,680,976.51, i.e. by PLN 2,797,240.51, by way of a cash contribution, and
  - → the contribution amount of CalEnergy Resources Poland sp. z o.o. of Warsaw, a limited partner in the company, from PLN 138,430,464.00 to PLN 141,371,561.62, i.e., by PLN 2,941,097.62, by way of a cash contribution.

  On November 24th 2021, the capital increase was registered in the Business Register of the National Court Register.

- o LOTOS Asfalt Sp. z o.o. – On November 2nd 2021, the Extraordinary General Meeting of LOTOS Asfalt Sp. z o.o. resolved to increase the share capital by PLN 122,985,000.00, from PLN 31,515,000.00 to PLN 154,500,000.00, by increasing the number of shares by 24,597 new shares, with a value of PLN 5,000.00 per share, i.e. from 6,303 shares to 30,900 shares, with the new shares covered by a contribution in kind of PLN 122,985,000.00. On December 14th 2021, the share capital increase was registered in the Business Register of the National Court Register.
- o Additional contributions to equity of the seven special purpose vehicles:
  - → LOTOS SPV 1 sp. z o.o. – On December 2nd 2021, The Extraordinary General Meeting of LOTOS SPV 1 Sp. z o.o. passed a resolution to impose on the shareholders the obligation to make non-refundable contributions to equity of PLN 10,000.00 per share, i.e. PLN 500,000.00 in aggregate, to finance the company's day-to-day operations, with the payment deadline set for December 24th 2021.
  - → LOTOS SPV 2 sp. z o.o. – On December 2nd 2021, The Extraordinary General Meeting of LOTOS SPV 2 Sp. z o.o. passed a resolution to impose on the shareholders the obligation to make non-refundable contributions to equity of PLN 10,000.00 per share, i.e. PLN 500,000.00 in aggregate, to finance the company's day-to-day operations, with the payment deadline set for December 24th 2021.

→ **LOTOS SPV 3 sp. z o.o.** – On December 2nd 2021, The Extraordinary General Meeting of LOTOS SPV 3 Sp. z o.o. passed a resolution to impose on the shareholders the obligation to make non-refundable contributions to equity of PLN 10,000.00 per share, i.e. PLN 500,000.00 in aggregate, to finance the company's day-to-day operations, with the payment deadline set for December 24th 2021.

→ **LOTOS SPV 5 sp. z o.o.** – On December 2nd 2021, The Extraordinary General Meeting of LOTOS SPV 5 Sp. z o.o. passed a resolution to impose on the shareholders the obligation to make non-refundable contributions to equity of PLN 10,000.00 per share, i.e. PLN 500,000.00 in aggregate, to finance the company's day-to-day operations, with the payment deadline set for December 24th 2021.

→ **LOTOS SPV 6 sp. z o.o.** – On December 2nd 2021, The Extraordinary General Meeting of LOTOS SPV 6 Sp. z o.o. passed a resolution to impose on the shareholders the obligation to make non-refundable contributions to equity of PLN 10,000.00 per share, i.e. PLN 500,000.00 in aggregate, to finance the company's day-to-day operations, with the payment deadline set for December 24th 2021.

→ **LOTOS Green H2 sp. z o.o.** – On December 15th 2021, The Extraordinary General Meeting of LOTOS Green H2 Sp. z o.o. passed a resolution to impose on the shareholders the obligation to make non-refundable contributions to equity of PLN 10,000.00 per share, i.e. PLN 500,000.00 in aggregate, to finance the company's day-to-day operations, with the payment deadline set for December 24th 2021.

Share capital reductions in 2020:

- LOTOS Lab Sp. z o.o. – On February 15th 2021, The Extraordinary General Meeting of LOTOS Lab Sp. z o.o. passed a resolution to approve the acquisition from the sole shareholder Grupa LOTOS S.A. of 196,000 shares in LOTOS Lab Sp. z o.o. (and their subsequent cancellation), for consideration of PLN 500.00 per share, i.e. for a total remuneration of PLN 98,000,000.00 for 196,000 shares. On February 25th 2021, the Extraordinary General Meeting of LOTOS Lab Sp. z o.o. passed resolutions to cancel shares for remuneration, reduce the company's share capital (from PLN 99 million to PLN 1 million) and amend the company's articles of association accordingly. On February 25th 2021 Grupa LOTOS S.A. and LOTOS Lab Sp. z o.o. signed an agreement to transfer shares for cancellation. Under the agreement, Grupa LOTOS S.A. transferred, to LOTOS Lab Sp. z o.o., 196,000 shares in the share capital of LOTOS Lab Sp. z o.o. with a par value of PLN 500 per share and total par value of PLN 98 million. The shares were disposed of for subsequent cancellation in connection with the reduction of the share capital at LOTOS Lab Sp. z o.o. On July 13th 2021, the share capital reduction was registered in the Business Register of the National Court Register.

Changes in the LOTOS Group's structure after the end of the reporting period:

- **NARVIA PLUS Sp. z o.o./LOTOS SPV 4 Sp. z o.o.** – On January 11th 2022, the change of name of NARVIA PLUS Sp. z o.o. to LOTOS SPV 4 Sp. z o.o. was entered in the Business Register of the National Court Register.
- **UAB Manifoldas** of Gargždai, Lithuania – On February 14th 2022, the share capital was reduced from EUR 303,000 (10,100 shares at EUR 30.00 per share) to EUR 3,000 (100 shares at EUR 30.00 per share) (registered in the Lithuanian business register on September 30th 2021).

7.2 Employment and remuneration policy

7.2.1 Employment

As of December 31st 2021, the LOTOS Group had 5,472 employees, compared with 5,473 employees at the end of 2020. As at the end of 2021, Grupa LOTOS S.A. had 708 employees, i.e. 977 fewer employees year on year, with the decrease attributable to the spin-off of an organised part of business to LOTOS Asfalt.

Table 7. Employment at the LOTOS Group (persons)

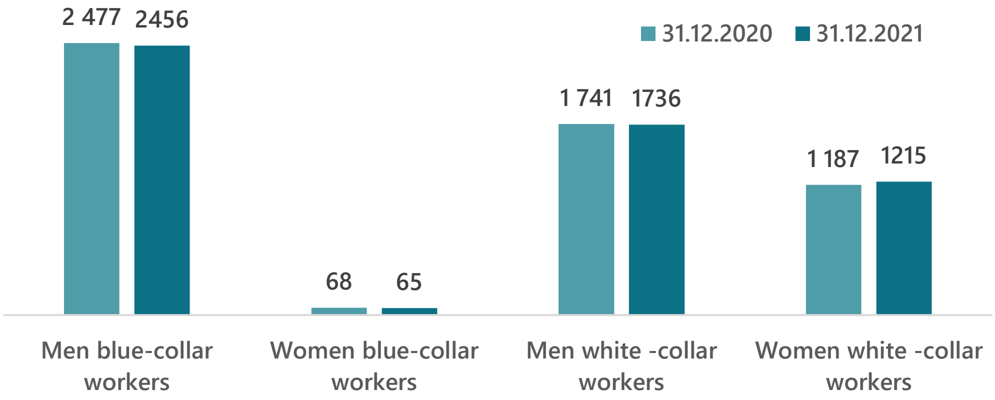
	Dec 31 2021			Dec 31 2020		
	Blue-collar jobs	White-collar jobs	Total	Blue-collar jobs	White-collar jobs	Total
Grupa LOTOS S.A.	1	707	708	537	1,148	1,685
LOTOS Paliwa Sp. z o.o.	0	316	316	0	313	313
LOTOS Kolej Sp. z o.o.	728	375	1,103	726	365	1,091
LOTOS Oil S.A.	74	197	271	74	186	260
LOTOS Lab Sp. z o.o.	6	126	132	7	125	132
LOTOS Serwis Sp. z o.o.	386	147	533	387	147	534
LOTOS Straż Sp. z o.o.	81	15	96	81	16	97
LOTOS Asfalt Sp. z o.o.	668	596	1,264	141	141	282
LOTOS Upstream Sp. z o.o.	0	13	13	0	13	13
LOTOS Ochrona Sp. z o.o.	166	24	190	168	24	192
LOTOS Infrastruktura S.A.	43	33	76	42	33	75
LOTOS Terminale S.A.	62	51	113	62	50	112
RC Ekoenergia Sp. z o.o.	38	23	61	40	24	64
LOTOS Biopaliwa Sp. z o.o.	24	18	42	24	19	43
LOTOS Petrobaltic S.A.	202	219	421	218	233	451
ENERGOBALTIC Sp. z o.o.	3	27	30	3	27	30
LOTOS E&P Norge AS	0	32	32	0	31	31
AB LOTOS Geonafta	24	14	38	24	14	38
Other LOTOS Group companies	12	21	33	11	19	30
LOTOS Group	**2,518**	**2,954**	**5,472**	**2,545**	**2,928**	**5,473**

Source: the Company.

Because of the specific nature of the work, men are a predominant group of the LOTOS Group's employees. As at the end of 2021, they accounted for 76.7% of the total workforce. At Grupa LOTOS S.A., the share of men in total workforce was 42.4%. As an oil sector operator, the LOTOS Group needs men to fill a major part of job positions, including the operation of refinery units, rolling stock, as well as exploration and production platforms.

As at December 31st 2021, 46.0% of the LOTOS Group's workforce were employed in blue-collar jobs (down 0.5% year on year). Blue-collar jobs were held mainly by men: 97.4% of the total blue-collar workforce.

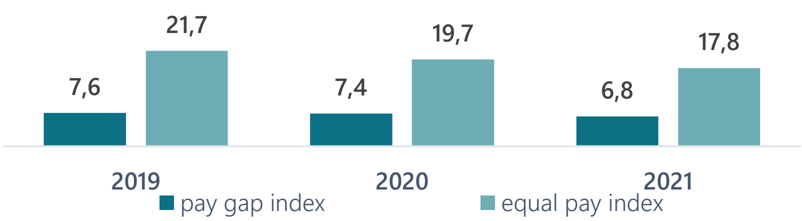
Figure 34. Structure of the LOTOS Group workforce, by sex and job category (persons)



Source: the Company.

The annual total compensation ratio of the LOTOS Group's highest-paid individual to the median annual total remuneration of all other employees in 2020 was 7.4, a decrease of 3% year on year, while in 2021 it was 6.8, a decrease of 8% year on year. The annual total compensation ratio is the ratio of the annual total compensation for the organisation's highest-paid individual to the median annual total compensation for all other employees. The pay equality ratio is the percentage difference between average monthly pay (including bonuses, awards and other additional pay components) of women and men for a given period.

Figure 35. Pay equality ratios at the LOTOS Group



Source: the Company.

7.2.2 Remuneration of members of the governing bodies

In 2021, the remuneration of members of the Company's Management Board and Supervisory Board was determined in accordance with the Act on Remuneration Rules and resolutions adopted pursuant to that Act, as well as the Remuneration Policy for members of the Management Board

and the Supervisory Board adopted by Resolution No. 22 of the Company's General Meeting of June 30th 2020 (the "Remuneration Policy").In accordance with the Remuneration Policy, Members of the Company's Supervisory Board are entitled to monthly remuneration, calculated as the product of the reference salary amount referred to in Art. 1.3.11 of the Act on Remuneration Rules and a multiplier of:

- 1.7 – for the Chair of the Supervisory Board,
- 1.5 – for other members of the Supervisory Board.

Members of the Supervisory Board are also entitled to reimbursement of costs related to their participation

in the work of the Supervisory Board, in accordance with the Remuneration Policy and Art. 392 of the Commercial Companies Code.

Differences in remuneration resulted from the different positions held and the fact that the remuneration was due for a given month if the member of the Supervisory Board was present at the meeting or justified his or her absence, which was reflected in the resolutions passed by the Supervisory Board.

The remuneration of members of the Company's Management Board was determined based on Grupa LOTOS Supervisory Board's Resolution No.168/IX/2017 of March 8th 2017, as amended, with the Supervisory Board acting in compliance with Extraordinary General Meeting's Resolution No. 2 on determination of rules of remuneration for members of the Management Board, dated December 22nd 2016, taking into account subsequent changes resulting from:

- Resolution No. 5 of the Extraordinary General Meeting of March 17th 2017,
- Resolution No. 24 of the Annual General Meeting of June 28th 2019.

The remuneration was determined in accordance with the Act on Remuneration Rules. Since the adoption of the Remuneration Policy by the General Meeting, the rules of remuneration for members of the Management Board have also incorporated the rules set forth in that Policy.

In 2021, the total remuneration of members of the Company's Management Board consisted of Fixed Remuneration and Variable Remuneration, which represented additional remuneration for a given financial year and was granted based on individual members' delivery of management objectives.

These rules were directly reflected in the Remuneration Policy, which also specified that in addition to Fixed Remuneration and Variable Remuneration the Management Board members could receive additional benefits, including in particular medical benefits, rental of premises, training, and severance pay on Contract termination.

The Supervisory Board determined Fixed Remuneration taking into account the position held and the market practice of energy and fuel sector companies. The Supervisory Board also considered professional experience and responsibilities assigned as part of the management function. These rules were directly reflected in the Management Services Contracts signed with each member of the Management Board of Grupa LOTOS S.A.

Below is presented the remuneration of each member of the Management Board and Supervisory Board in 2021, broken down into the components referred to in Art. 90d.3.1 of the Public Offering Act, and the relative proportions of those remuneration components.

In 2021, the total amount of benefits paid to Members of the Management Board was PLN 6.49 million, relative to PLN 5.39 million in 2020.

Table 8. **Remuneration paid and payable to Members of the Management Board of Grupa LOTOS S.A. in 2021 (PLNm)**[9]

				Fixed and variable remuneration[1]		(III) Other			(IV) Total remuneration	(V) Proportion of components (%)	
No.	Surname	First name	Position on the Management Board	(I) Fixed	(II) Variable	Severance pay	Non-compete compensation	Other additional benefits[9]	**Total**	(II) / (IV)	(III) / (IV)
1	Cieślik[2]	Artur	Vice President of the Management Board	200,372	149,180	0	0	8,710	**358,262**	42%	2%
2	Demski[3]	Patryk	Vice President of the Management Board	0	0	0	0	13,359	**13,359**	0%	100%
3	Kawula[4]	Jarosław	Vice President of the Management Board	0	243,279	0	0	7,428	**250,706**	97%	3%
4	Krzemiński[5]	Marian	Vice President of the Management Board	173,656	420,000	0	171,747	7,821	**773,224**	54%	23%
5	Majewski[6]	Paweł	President of the Management Board	0	355,683	0	0	0	**355,683**	100%	0%
6	Nowicki	Krzysztof	Vice President of the Management Board	583,941	0	0	0	27,891	**611,832**	0%	5%

7	Paryła	Zofia	President of the Management Board	738,983	422,732	0	0	37,227	**1,198,942**	35%	3%
8	Sobków[7]	Robert	Vice President of the Management Board	0	145,461	0	0	4,460	**149,921**	97%	3%
9	Walczak	Piotr	Vice President of the Management Board	686,990	136,557	0	0	31,200	**854,747**	16%	4%
10	Wittstock[8]	Jarosław	Vice President of the Management Board	686,990	696,528	0	0	1,370	**1,384,888**	50%	0%
11	Wróbel	Jarosław	Vice President of the Management Board	515,242	0	0	0	22,419	**537,662**	0%	4%
			Total	**3,586,173**	**2,569,421**	**0**	**171,747**	**161,885**	**6,489,226**		

[1] For delivery of the management objectives for 2020 (Sobków: 2019, Wittstock: 2019 and 2020).

[2] Served as Vice President of the Management Board from August 24th 2020 to March 15th 2021.

[3] Served as Vice President of the Management Board from May 22nd 2018 to July 11th 2019.

[4] Served as Vice President of the Management Board from January 12th 2017 to July 30th 2020.

[5] Served as Vice President of the Management Board from July 25th 2019 to March 1st 2021.

[6] Served as President of the Management Board from February 3rd 2020 to November 11th 2020.

[7] Served as Vice President of the Management Board from June 11th 2018 to July 11th 2019, remuneration for delivery of the management objectives for 2019.

[8] Remuneration for delivery of the management objectives for 2020.

[9] Including reimbursement of old age and disability pension contributions and partial coverage of the cost of rented accommodation.

Source: the Company.

Table 9. **Remuneration paid and payable to members of the Management Board of Grupa LOTOS S.A. in 2020 [9]**

				Fixed and variable remuneration [1]		(III) Other			(IV) Total remuneration	(V) Proportion of components (%)	
No.	Surname	First name	Position on the Management Board	(I) Fixed	(II) Variable	Severance pay	Non-compete compensation	Other additional benefits[5]	Total	(II) / (IV)	(III) / (IV)
1	Bonca	Mateusz	President of the Management Board	0	282,120	0	184,959	483	**467,562**	60%	40%
2	Demski	Patryk	Vice President of the Management Board	0	145,461	0	38,166	0	**183,627**	79%	21%
3	Jastrzębski[2]	Marcin	President of the	0	0	0	0	2,575	**2,575**	0%	100%

[9] Sum of subtotals may not exactly match totals due to rounding

4	Kawula	Jarosław	Vice President of the Management Board	457,993	276,528	171,747	31,487	0	**937,756**	29%	22%
5	Krzemiński	Marian	Vice President of the Management Board	686,990	121,218	0	0	30,000	**838,207**	14%	4%
6	Machajewski[3]	Mariusz	Vice President of the Management Board	0	172,142	0	0	0	**172,142**	100%	0%
7	Majewski	Paweł	President of the Management Board	571,317	0	0	0	32,633	**603,950**	0%	5%
8	Paryła	Zofia	Vice President, Acting President of the Management Board	686,990	121,218	0	0	42,904	**851,111**	14%	5%
9	Sobków4	Robert	Vice President of the Management Board	0	216,688	0	38,166	5,492	**260,346**	83%	17%
10	Walczak	Piotr	Vice President of the Management Board	166,023	0	0	0	6,417	**172,439**	0%	4%
11	Wittstock	Jarosław	Vice President, Acting President of the Management Board	695,391	0	0	0	12,935	**708,325**	0%	2%
12	Cieślik	Artur	Vice President of the Management Board	187,014	0	0	0	8,553	**195,566**	0%	4%
			Total	**3,451,717**	**1,335,375**	**171,747**	**292,778**	**141,991**	**5,393,608**		

[1] *For delivery of the management objectives for 2019.*

[2] *Served on the Management Board from May 13th 2016 to March 19th 2018.*

[3] *Served on the Management Board from June 19th 2006 to September 5th 2017; remuneration for achievement of the management objectives for 2017.*

[4] *Served on the Management Board from June 8th 2018 to July 11th 2019; remuneration for delivery of the management objectives for 2018.*

[5] *Including reimbursement of old age and disability pension contributions and partial coverage of the cost of rented accommodation.*

Source: the Company.

In 2021, Members of the Management Board of Grupa LOTOS S.A. did not receive any remuneration for serving on the supervisory boards of the LOTOS Group subsidiaries.

For compliance with the non-competition clause after termination, a member of the Management Board is entitled to compensation calculated as 0.5 times the monthly Fixed Remuneration x6. The compensation is paid in six equal monthly instalments.

A management service contract ("Contract") is concluded for the term of office of a member of the Management Board. If the mandate of a member of the Management Board expires, including in particular as a result of the Member's death, removal or resignation, the contract is terminated on the last day of the Member's holding the position, without notice and with no further action required.

Either party may terminate the contract on:

- 1 (one) month notice if the member of the Management Board held the position for less than 12 (twelve) months,
- 3 (three) months' notice if the member of the Management Board held the position for 12 (twelve) months or longer.
- with immediate effect in the event of a material breach of the Contract.

If the Company terminates the Contract for reasons other than a breach of basic obligations under the Contract, the Management Board Member may receive a severance payment of up to three times the Fixed Remuneration, provided that the Member has held the position for at least twelve months prior to the termination.

Remuneration of members of the Supervisory Board is shown in Table 10. Members of its Supervisory Board did not receive any remuneration or awards for serving on the governing bodies of LOTOS Group companies.

Table 10. **Remuneration of members of the Supervisory Board in 2021 (PLN)**

No.	Surname	First name	Position	Remuneration*	Other additional benefits[1]	**Total remuneration**
1	Ciach	Piotr	Deputy Chair	79,268	1,556	**80,824**
2	Figura	Dariusz	Member	79,268	1,756	**81,024**
3	Kozłowska-Chyła	Beata	Chair	89,837	6,488	**96,325**
4	Lewandowska	Katarzyna	Secretary	79,268	2,057	**81,325**
5	Lewandowski	Adam	Member	46,020	1,885	**47,905**
6	Maćkowska	Katarzyna	Member	33,249	2,153	**35,401**
7	Rybicki	Grzegorz	Member	79,268	1,110	**80,378**
8	Włodarski	Rafał	Member	33,249	1,551	**34,799**
			Total	**519,426**	**18,554**	**537,980**

[1] Including: reimbursement of pension contributions and reimbursement of travel costs.

Source: the Company.

Table 11. **Remuneration of members of the Supervisory Board in 2020 (PLN)**

No.	Surname	First name	Position	Remuneration*	Other additional benefits[1]	**Total remuneration**
1	Ciach	Piotr	Deputy Chair	79,268	1,175	**80,443**
2	Figura	Dariusz	Member	79,268	2,373	**81,641**
3	Kozłowska-Chyła	Beata	Chair	89,837	7,171	**97,008**
4	Lewandowska	Katarzyna	Secretary	79,268	2,460	**81,728**
5	Lewandowski	Adam	Member	79,268	2,503	**81,771**
6	Rybicki	Grzegorz	Member	79,268	1,355	**80,623**
7	Szklarczyk-Mierzwa	Agnieszka	Member	46,240	810	**47,050**
			Total	**532,417**	**17,846**	**550,263**

[1] Including: reimbursement of pension contributions and reimbursement of travel costs.

Source: the Company.

7.2.3 Non-financial remuneration components for Members of the Management Board and key managers

Members of the Management Board and key managers were entitled to the following additional benefits:

- the use of a company car, depending on the scope of duties, in line with the procedure on the allocation, acquisition and use of company cars in place at the Company, or based on Supervisory Board resolutions in the case of company cars used by Management Board Members,
- employer-funded medical care, available to the employees and members of their immediate family, on preferential terms and with preferential rates negotiated by Grupa LOTOS. The costs of such benefits are borne by Members of the Management Board (as relevant amounts are deducted from their remuneration),
- life insurance agreement for the duration of the employment contract on preferential terms negotiated by the Company, with the proviso that its costs are borne by Members of the Management Board as relevant amounts are deducted from their remuneration,
- unit-linked group life insurance with the monthly premium paid by Grupa LOTOS (PLN 250). Members of the Management Board bear its costs as relevant amounts are deducted from their remuneration,
- financial support towards training costs, of PLN 15 thousand per year.

On January 22nd 2020, the Grupa LOTOS Management Board repealed the existing employment and remuneration rules applicable to key managerial positions. Pursuant to that decision, all employees of Grupa LOTOS S.A. receive the same additional benefits described in the Collective Bargaining Agreement. However, the existing provisions concerning additional benefits set out in the managers' contracts of employment remain in force, as more favourable than the provisions of the Collective Bargaining Agreement.

7.2.4 Liabilities arising from pensions or similar benefits to former members of its management or supervisory bodies

The Company has no liabilities arising from pensions or similar benefits to former members of its management or supervisory bodies.

7.2.5 Remuneration policy and its assessment

As an employer, Grupa LOTOS S.A. optimises remuneration, especially base pay and bonuses, so that its employees receive a competitive performance-linked compensation package, while the Company and its shareholders receive a return on capital invested.

Aware of the incentive role of remuneration, Grupa LOTOS S.A. promotes especially those employees who, through their attitudes, behaviour, competence and performance, contribute to its development. The terms of remuneration offered by the Company take into account:

- the job type as well as the qualifications and competencies required to perform it,
- the level of output, according to which individual remuneration is differentiated,
- satisfactory performance against objectives and targets,
- outstanding professional achievements, generating considerable, unexpected added value for the Company.

In addition to the base pay, consistent with the assigned pay grade, a staff member is entitled to additional remuneration calculated and paid in accordance with the generally applicable labour law, i.e. for overtime and night work. The Company has had Employee Capital Plans in place since 2019.

Employees may receive individual annual bonuses in accordance with the rules laid down in the Collective Bargaining Agreement and special bonuses for outstanding professional achievements. Once a year, a periodic payroll review is undertaken.

Employees in managerial and executive roles as well as advisers to directors and Management Board Members may have their annual bonus criteria linked to performance against individual annual targets. Objectives are cascaded and set in line with the SMART principles (they must be Specific, Measurable, Ambitious, Realistic and Time-bound). Individual targets are linked to the Company's objectives, so that activities undertaken across the organisation are coherent and employees are focused on delivering the corporate strategy.

At the same time, Grupa LOTOS S.A. takes care of the professional development of its employees, offering individual training plans and providing talent with promotion and career paths.

Under the present arrangements, a significant portion of the remuneration of Grupa LOTOS S.A.s' management personnel depends on the Company's overall performance. In the Company's opinion, the current remuneration system is sufficient to ensure achievement of the Company's objectives, in particular those related to long-term growth in shareholder value and stability of the Company's business.

8 The LOTOS Group's finance in 2021

8.1 Policies followed in the preparation of full-year financial statements

The LOTOS Group's consolidated financial statements and Grupa LOTOS S.A.'s separate financial statements have been prepared in accordance with the International Financial Reporting Standards ("IFRSs") endorsed by the European Union, issued and effective as at December 31st 2021.

The list of amendments to the applicable standards is presented in Note 6 to the consolidated financial statements (page 16).

8.2 Key factors affecting the financial performance

In 2021, the LOTOS Group's operating profit before depreciation and amortisation and adjusted for one-off items (adjusted LIFO-based EBITDA) was PLN 4,229.1 million, compared with PLN 1,356.6 million in 2020 (an increase of 211.7%).

Key drivers of the LOTOS Group's performance:

- Revenue was PLN 33,123.6 million, having increased up by PLN 12,215.0 million (58.4%) on 2020, mainly as a result of rising prices of crude oil and petroleum products on global markets. The average net revenue per tonne of the volume sold in 2021 was PLN 2,943, an increase of PLN 1,173 (66.3%) relative to 2020. For detailed revenue breakdown, see item 8.2.1 of the present section;
- Gross profit was reported at PLN 6,348.5 million (an increase of PLN 4,881.6 million on 2020), driven by rising crude oil prices and high petroleum product crack spreads. As the Group applies the weighted average cost method to measure inventories, the impact of price changes on cost of sales is deferred in time. Therefore, Grupa LOTOS S.A. presents its earnings net of inventory valuation ('LIFO-based EBIT' and 'LIFO-based EBITDA'), which more accurately approximates the Refining & Marketing segment's actual profitability (for more information on the calculation of LIFO-based EBITDA, see section 8.2.4);
- Distribution costs increased by 3%, mainly as a result of the increase in the number of service stations in the LOTOS chain and higher volumes of fuels sold at the service stations;
- A 6.3% increase was recorded in administrative expenses, attributable mainly to higher employee benefits;
- Net other income of PLN 138.4 million was attributable mainly to reversal of impairment losses in the Exploration & Production segment;
- Net finance costs of PLN -26.0 million.

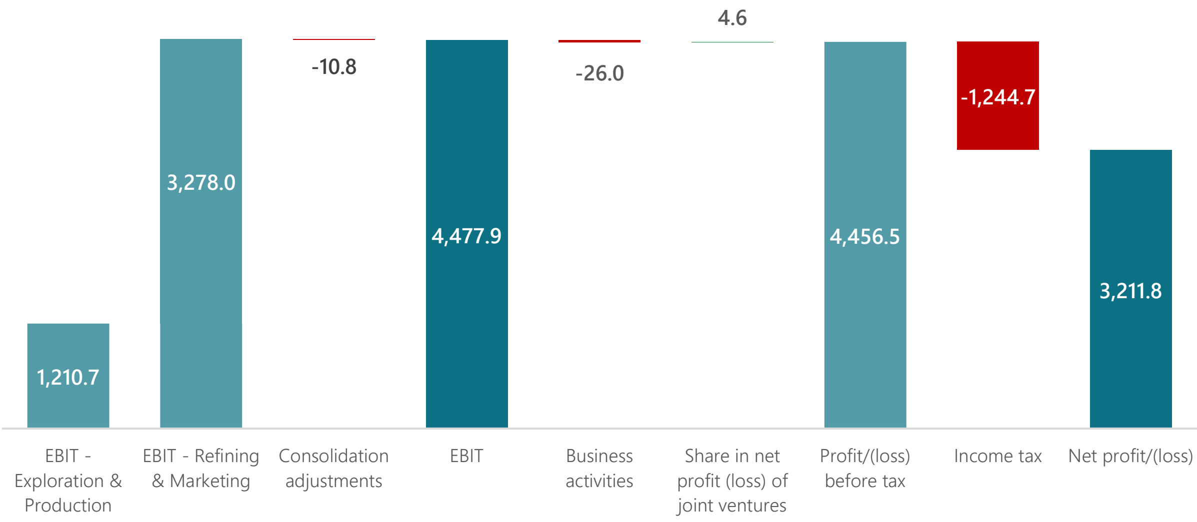
As a result of the application of cash flow hedge accounting with respect to foreign-currency loans contracted to finance the 10+ Programme, intended as hedges of future USD-denominated petroleum product sales transactions, in 2021 foreign exchange losses on cash flow hedges of PLN -35.7 million were taken to reserve capital.

Table 12. **Key items of the LOTOS Group's statement of profit or loss (PLNm)**

	2021	2020	2021/2020	
			(PLNm)	(%)
Revenue	33,123.6	20,908.6	12,215.0	58.4%
Cost of sales	-26,775.1	-19,441.7	-7,333.4	37.7%
Selling expenses	-1,455.3	-1,412.9	-42.4	3.0%
Administrative expenses	-553.7	-521.0	-32.7	6.3%
Net other income/(expenses)	138.4	-929.8	1,068.2	-
Operating profit/(loss)	4,477.9	-1,396.8	5,874.7	-
Net finance income/(costs)	-26.0	-254.1	228.1	-89.8%
Share in net profit/(loss) of equity-accounted joint ventures	4.6	-1.9	6.5	-
Profit/(loss) before tax	4,456.5	-1,652.8	6,109.3	-
Income tax	-1,244.7	506.6	-1,751.3	-345.7%
Net profit/(loss), of which:	3,211.8	-1,146.2	4,358.0	-
– attributable to owners of the parent	3,211.8	-1,146.2	4,358.0	-

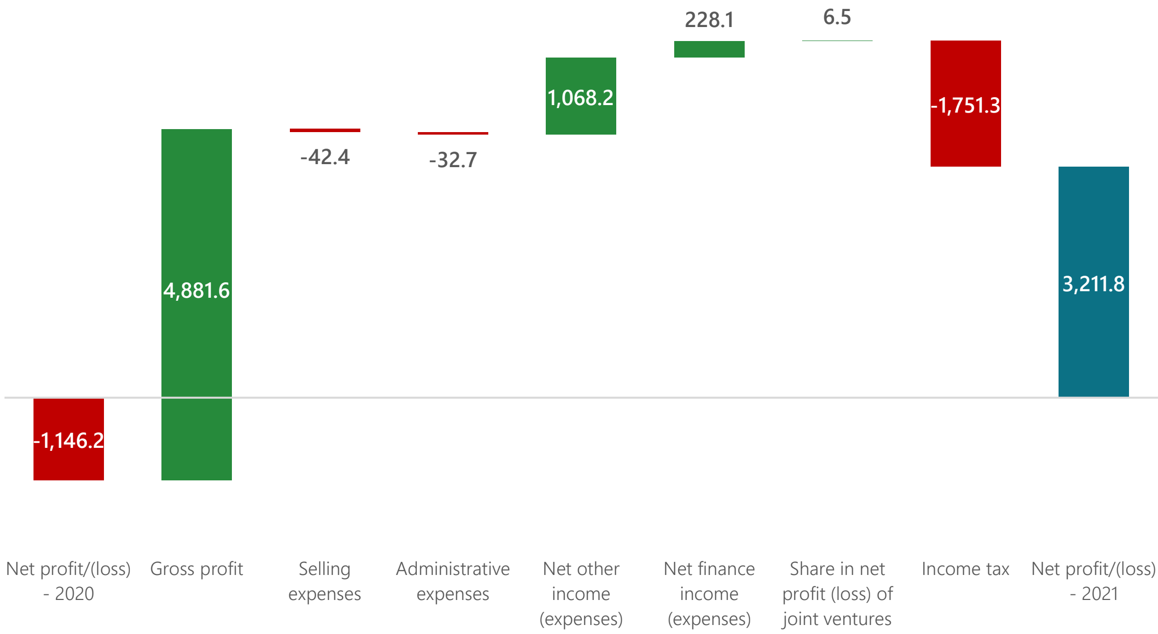
Source: the Company.

Figure 36. **Breakdown of factors affecting the LOTOS Group's net profit/(loss) in 2021 (PLNm)**



Source: the Company.

Figure 37. **Sources of the LOTOS Group's net profit/(loss) in 2021 (PLNm)**



Source: the Company.

8.2.1 Revenue

In 2021, the LOTOS Group's revenue was PLN 33,123.6 million (an increase of 58.4% year on year). Sales of diesel oil accounted for the major share of revenue, having totalled PLN 18,890.6 million (57% of the Group's total revenue). In 2021, they increased 59.9% year on year. Sales of gasolines were also an important contributor to revenue, amounting to PLN 4,603.7 million (13.9% of total revenue), i.e. 51.8% more year on year. In 2021, heavy products accounted for 4.5% of the LOTOS Group's revenue, or PLN 1,504.7 million (an increase of 24.5% on 2020).

In 2021, the share of domestic sales in the LOTOS Group's revenue went up. Revenue from domestic sales was PLN 28,293.0 million (85.4% of total revenue), having increased by 59.5% year on year.

Table 13. **LOTOS Group's revenue by products, merchandise and services (PLNm)**

	Exploration & Production		Refining & Marketing		Total	
	2021	2020	2021	2020	2021	2020
Gasolines			4,603.7	3,032.7	4,603.7	3,032.7
Naphtha			1,092.9	752.7	1,092.9	752.7
Diesel oils			18,890.6	11,814.0	18,890.6	11,814.0
Bunker fuel			245.6	156.3	245.6	156.3
Light fuel oil			785.9	492.1	785.9	492.1
Heavy products			1,504.7	1,209.0	1,504.7	1,209.0
Aviation fuel			824.6	418.1	824.6	418.1
Lubricants			518.6	345.4	518.6	345.4
Base oils			795.0	320.7	795.0	320.7
LPG			755.7	470.5	755.7	470.5
Crude oil commodity			2.4	37.6	2.4	37.6
Crude oil product	303.3	332.7			303.3	332.7
Natural gas	956.1	248.1	1.0	1.1	957.1	249.2
Xylene fraction			143.3	140.1	143.3	140.1
Other refining products, merchandise and materials	0.4	0.2	634.2	410.7	634.6	410.9
Other products, merchandise and materials	9.4	5.7	643.1	546.0	652.5	551.7
Services	56.7	60.7	390.4	354.4	447.1	415.1
Effect of cash flow hedge accounting			-34.0	-240.2	-34.0	-240.2
Total	**1,325.9**	**647.4**	**31,797.7**	**20,261.2**	**33,123.6**	**20,908.6**
Domestic sales	12.9	15.6	28,280.1	17,720.0	28,293.0	17,735.6
Export sales	1,313.0	631.8	3,517.6	2,541.2	4,830.6	3,173.0

Source: the Company.

8.2.2 Operating expenses

Operating expenses of the LOTOS Group in 2021 were PLN 28,784.1 million, or 34.7% more than in the previous year.

The main items of operating expenses were:

- Raw materials and consumables used – an increase of 54.9%, or PLN 8,490.3 million, year on year mainly due to the higher value of crude oil processed;
- Services – PLN 1,496.5 million (an increase of 4.4% on 2020). The increase was a result of, among other things, higher costs of financial services related to the increase in market prices and higher costs of service stations;
- employee benefits expense – amounting to PLN 981.3 million (up by 4.5%);
- Depreciation and amortisation of PLN 1,049.0 million, 3.8% less than in 2020. This decrease was mainly attributable to the effect of the units-of-method estimates of production assets in Norway;
- Taxes and charges – of PLN 762.1 million, similar to the amount reported in 2020.

Table 14. **LOTOS Group's operating expenses by nature (PLNm)**

	2021	2020	Change in %
Depreciation and amortisation	1,049.0	1,089.9	-3.8%
Raw materials and consumables used	23,953.0	15,462.7	54.9%
Services	1,496.5	1,433.1	4.4%
Taxes and charges	762.1	764.1	-0.3%
Employee benefits expense	981.3	938.7	4.5%
Other costs by nature of expense	358.8	273.8	31.0%
Merchandise and materials sold	1,243.4	977.7	27.2%
Total costs by nature of expense	**29,844.1**	**20,940.0**	**42.5%**
Change in products and adjustments to cost of sales	-1,060.0	435.6	-343.3%
Total operating expenses, including:	**28,784.1**	**21,375.6**	**34.7%**
Cost of sales	26,775.1	19,441.7	37.7%
Selling expenses	1,455.3	1,412.9	3.0%
Administrative expenses	553.7	521.0	6.3%

Source: the Company.

8.2.3 Net other income/(expenses)

In 2021, the LOTOS Group reported net other income of PLN 138.4 million, compared with net other expenses of PLN -929.8 million the year before. It was mainly an outcome of non-recurring events:

- impairment losses on assets related to the Utgard field of PLN -39.2 million,
- reversal of impairment losses on Heimdal assets in the Vale field of PLN +35.1 million,
- Impairment losses on assets in the Kamień Pomorski and Górowo Iłowieckie areas of PLN -0.6 million,
- Reversal of impairment losses on the B3 field assets of PLN +116.2 million,
- Reversal of impairment losses on the B8 field assets of PLN +135.0 million,
- Reversal of impairment losses on the Lithuanian assets of PLN +6.6 million,
- Reversal of impairment loss on ships at the Miliana Group of PLN +1.5 million,
- Impairment losses on assets subject to the remedies of PLN -127.0 million,
- Impairment losses of PLN -3.6 million on service stations.

8.2.4 LIFO-based EBITDA

In line with its inventory measurement policy, the LOTOS Group applies the weighted average cost method to measure any changes in inventories. This method defers the impact of changes in crude oil prices on the prices of finished goods. Thus, an increase in crude oil prices has a positive effect on financial performance, while the effect of a decrease is negative.

To account for such distortions, a management standard in the refining sector is the use of LIFO-based EBITDA, which eliminates most of the time-lag effect.

Table 15. **LIFO-based EBITDA (PLNm)**

	2021	2020	Change 2021/2020	
			(PLNm)	(%)
EBIT (1)	**4,477.9**	**-1,396.8**	**5,874.7**	**-**
Depreciation and amortisation (2)	1,049.0	1,089.9	-40.9	-3.8%
Effect of one-off[10] items (3)	-45.3	923.6	-968.9	-104.9%
LIFO effect (4)	**-1,252.5**	**739.9**	**-1,992.4**	**-**
LIFO-based EBITDA * (1+2 +3 +4)	**4,229.1**	**1,356.6**	**2,872.5**	**211.7%**

** LIFO-based EBITDA adjusted for one-offs.*

Source: the Company.

The LOTOS Group's adjusted LIFO-based EBITDA for 2021 was PLN 4,229.1 million. The Company believes that the increase of PLN 2,872.5 million, or 211.7% over 2020, in the financial measure kye to the assessment of the business is due to a significant increase in gas and oil prices in the Exploration & Production segment and higher margins on the main product groups in the Refining & Marketing segment.

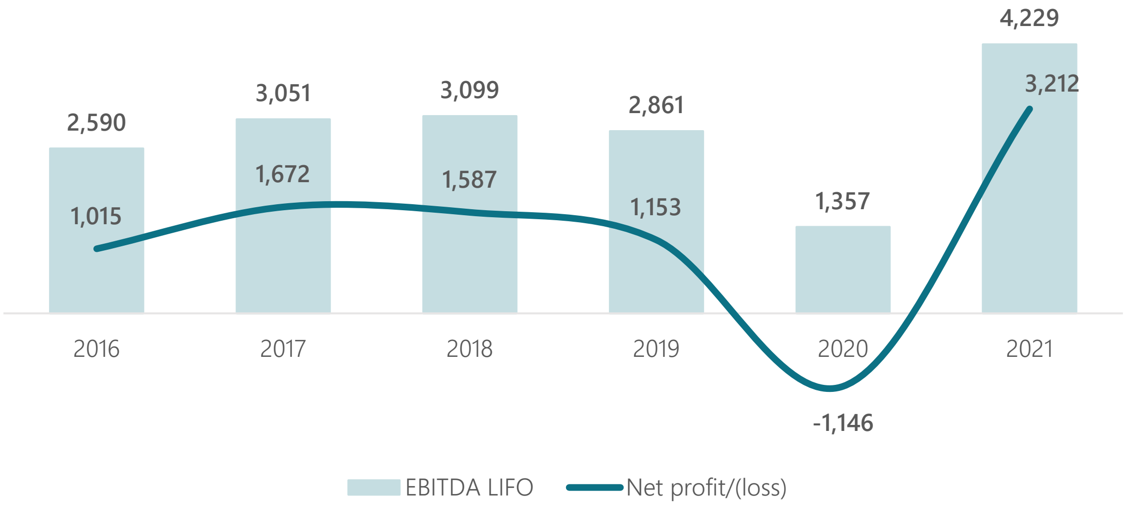
The adjusted LIFO-based EBITDA was calculated based on:

- the result of the Refining & Marketing segment of 3,018.9 million,
- the result of the Exploration & Production segment of PLN 1,221.0 million;
- consolidation adjustments of PLN -10.8 million.

[10] In 2021: impairment losses on assets related to the Utgard field of PLN -39.2 million, reversal of impairment losses on assets in the Vale field (Heimdal licence) of PLN +35.1 million, reversal of impairment losses on assets in the B3 field of PLN +116.2 million, reversal of impairment losses on assets in the B8 fields of PLN +135.0 million, reversal of impairment losses on assets related to the Lithuanian fields of PLN +6.6 million, reversal of impairment losses on vessels at the Miliana Group of PLN +1.5 million, impairment losses on assets in the Kamień Pomorski Górowo Iławeckie area of PLN -0.6 million, impairment losses on assets covered by the remedies of PLN -127.0 million, impairment losses on service stations of PLN -3.6 million, foreign exchange losses on operating activities of PLN -78.7 million.

In 2020: impairment losses on Yme assets of PLN -460.6 million, impairment losses on assets related to the Utgard field of PLN -155.0 million, impairment losses on B3 assets of PLN -118.3 million, impairment losses on B8 assets of PLN -135.0 million, impairment losses on assets related to Lithuanian fields of PLN -29.1 million, impairment losses on assets in Młynary and Górowo Iławieckie of PLN -15.8 million, impairment losses on service stations of PLN -8.8 million, reversal of impairment losses on Heimdal assets in the Vale field of PLN +16.6 million, provision for unfavourable court rulings at LOTOS Petrobaltic related to AGR's claims of PLN -32.1 million, reversal and remeasurement of the provision for costs of decommissioning of oil and gas extraction facilities in the Heimdal area of PLN +13.8 million, reversal and remeasurement of the provision for contingent liabilities related to the acquisition of Sleipner assets of PLN +4.5 million, and foreign exchange losses on operating activities of PLN -3.8 million.

Figure 38. **LOTOS Group's adjusted LIFO-based EBITDA and net profit in 2016–2021 (PLNm)**



Source: the Company.

8.2.5 Net finance income/(costs)

Key factors behind the net finance costs in 2021, totalling PLN -26 million (vs PLN -254.1 million in the previous year):

- net balance of interest on debt, interest income, and commission fees of PLN -193.3 million (2020: PLN -223.8 million),
- impairment losses on investment in the B4/B6 project of PLN -2.8 million (2020: PLN -114.5 million),
- net foreign exchange losses gain of PLN -70.5 million (2020: net foreign exchange gains of PLN +42.1 million),
- net gain on measurement and settlement of market risk hedging derivative instruments of PLN +242.7 million (2020: PLN +65.7 million).

8.3 Financial position

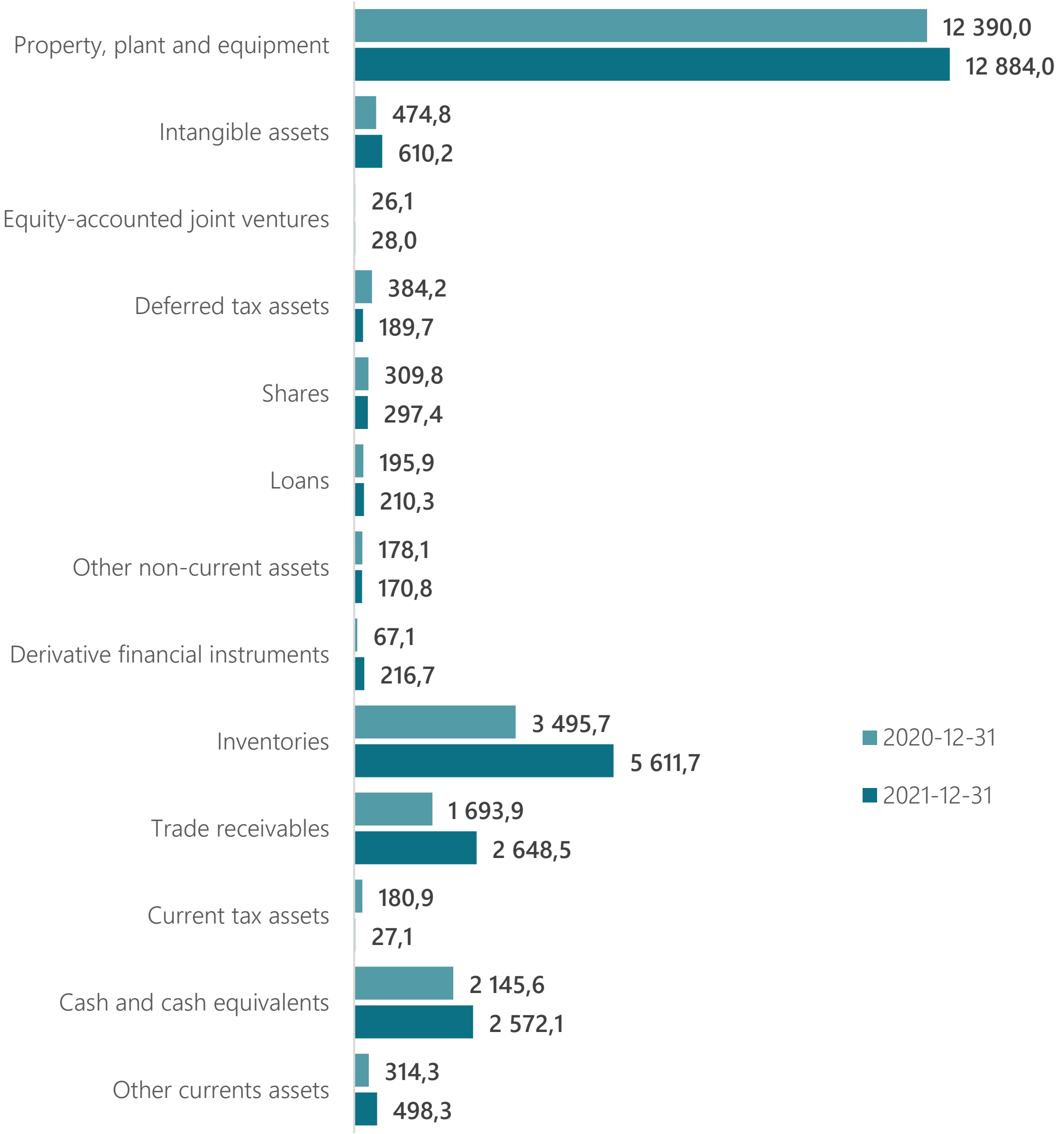
8.3.1 Assets

As at December 31st 2021, the LOTOS Group's total assets were PLN 25,964.8 million, compared with PLN 21,856.4 million a year earlier (an increase of 18.8%).

The main asset categories were:

- property, plant and equipment worth PLN 12,884.0 million (49.6% of the Group's total assets). Their amount increased by 4.0% on year-end 2020. The main components of these assets were property, plant and equipment of the Refining & Marketing segment. They amounted to PLN 9,343.5 million and decreased by PLN 123.4 million during the year, mainly due to impairment losses on assets covered by the remedies. Property, plant and equipment of the Exploration & Production segment increased by 21.1%, to PLN 3,540.5 million (mainly as a result of reversal of impairment losses on non-current assets in the segment and reclassification of Yme assets from development to production following the launch of hydrocarbon production from these fields in Norway);
- inventories measured at PLN 5,611.7 million (21.6% of the Group's assets). The amount increased by 60.5% year on year, driven by higher prices;
- trade receivables of PLN 2,648.5 million, representing 10.2% of total assets. Their amount increased by PLN 954.6 million year on year as a result of higher prices of crude oil, natural gas and petroleum products on global markets;
- deferred tax assets, which decreased by PLN 194.5 million year on year, mainly related to reversal of impairment losses in the Exploration & Production segment;
- other current and non-current assets of PLN 669.1 million, which increased by 35.9% year on year mainly as a result of settlements of joint operations in the Norwegian fields;
- cash and cash equivalents of PLN 2,572.1 million (9.9% of total assets), which increased by PLN 426.5 million on year-end 2020.

Figure 39. **Assets of the LOTOS Group (PLNm)**



Source: the Company.

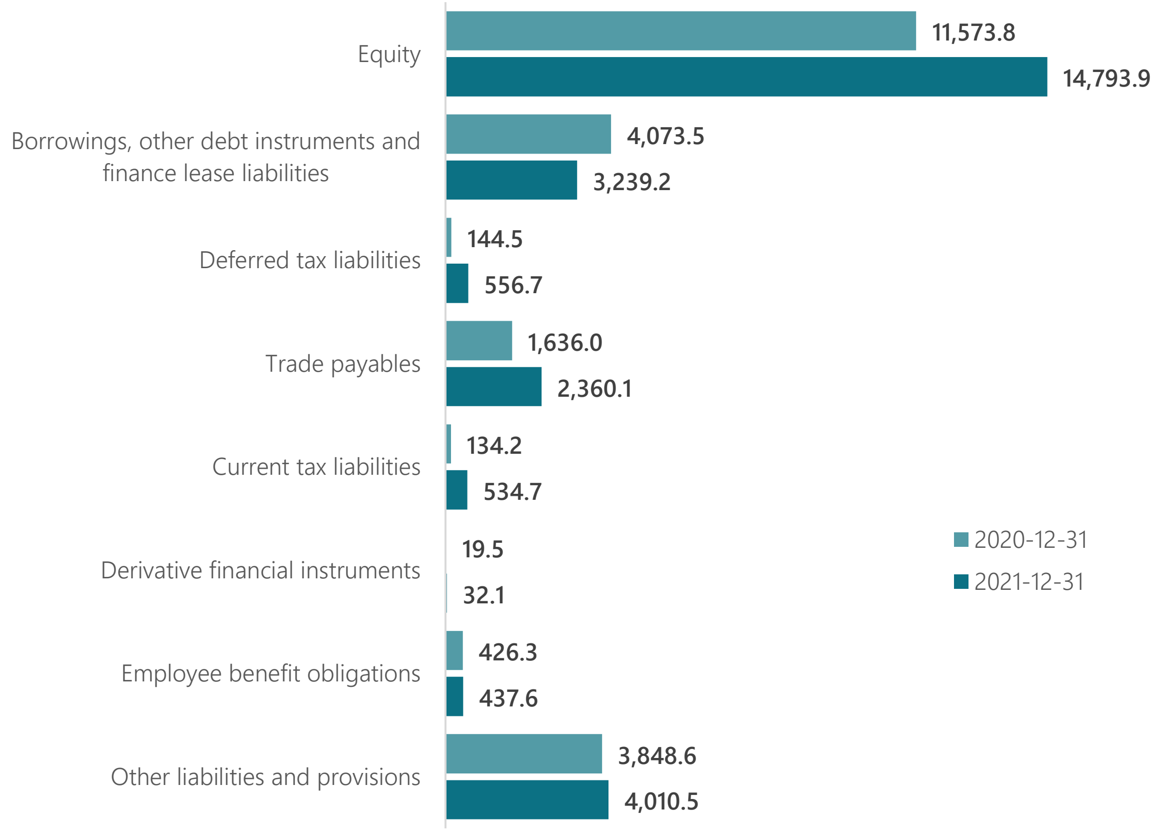
8.3.2 Equity and liabilities

As at December 31st 2021, equity was PLN 14,793.9 million (57.0% of total equity and liabilities). The amount was 27.8% higher than at year-end 2020, mainly as a result of retained earnings having increased by PLN 3,217.2 million, revaluation reserve of PLN -10.0 million as well as a PLN 41.8 million increase in foreign exchange gains on translation and foreign exchange losses on measurement of cash flow hedges adjusted for tax effect in the amount of PLN -28.9 million charged to reserve capital.

The main items of liabilities were:

- PLN 834.3 million decrease in borrowings, other debt instruments and finance lease liabilities, mainly due to partial repayment of debt in 2021;
- PLN 724.1 million increase in trade payables. The trade payables were 44.3% higher year on year as a result of significant year-on-year increase in prices of crude oil procured outside the LOTOS Group towards the end of 2021;
- PLN 161.9 million increase in other liabilities and provisions was mainly a result of a deposit being established in connection with ICE Futures settlements, liabilities of LOTOS Exploration and Production Norge AS under settlements between the operator and the consortium members in Norway, as well as VAT liabilities;
- PLN 412.2 million increase in deferred tax liabilities;
- PLN 400.5 million increase in income tax liabilities (mainly at LOTOS Exploration and Production Norge AS).

Figure 40. **Equity and liabilities of the LOTOS Group (PLNm)**



Source: the Company.

As at December 31st 2021, the LOTOS Group's debt was PLN 3,239.2 million, having decreased by PLN 834.3 million on year-end 2020, mainly as a result of repayment of investment credit facilities. Net debt was PLN 667.1 million, compared with PLN 1,927.9 million as at the end of 2020. The ratio of net debt to adjusted LIFO-based EBITDA as at December 31st 2021 was 0.16x, having decreased by 1.26 relative to December 31st 2020.

8.4 Cash flows

As at December 31st 2021, the cash balance (including current account overdrafts) at the LOTOS Group was PLN 2,572.1 million.

In 2021, net cash flows increased the amount of cash and cash equivalents by PLN 648.7 million, where:

- cash flows from operating activities generated by the LOTOS Group were positive at PLN 2,897.3 million, which confirms the effective use of assets and healthy business despite the continued pandemic-induced headwinds. The high level of operating cash flows was mainly attributable to net profit and higher trade payables, offset by higher trade receivables and higher inventories due to higher prices of petroleum products on the global markets;
- net cash flows from investing activities were negative at PLN -856.8 million and included mainly expenditure on purchase of property, plant and equipment and other intangible assets by both segments;
- negative cash flows from financing activities, of PLN -1,394.5 million, were mainly attributable to the negative balance of proceeds from borrowings and repayment of borrowings (facilities taken out by Grupa LOTOS S.A. to finance inventories and the 10+ Programme; an investment credit facility contracted by LOTOS Asfalt), interest paid, and lease payments.

Table 16. Cash flows (PLNm)

	2021	2020
Cash and cash equivalents at beginning of period	1,923.4	1,516.6
Cash flows from operating activities	2,897.3	2,869.9
Cash flows from investing activities	-856.8	-1,388.5
Cash flows from financing activities	-1,394.5	-1,089.8
Change in cash due to exchange differences	2.7	15.2
Net change in cash	648.7	406.8
Cash and cash equivalents at end of period	2,572.1	1,923.4

Source: the Company.

8.5 Financial ratios

In 2021, the key profitability measures of the LOTOS Group were higher than in the previous year. The positive ROE and ROA ratios are directly attributable to the LOTOS Group's net profit for 2021. The profitability ratios linked to EBIT/LIFO-based EBITDA adjusted for one-off items were also significantly higher year on year. This was due to the overall economic recovery, especially the related increase in crude oil and natural gas prices as well as higher crack margins for fuels on the global markets.

Table 17. LOTOS Group's profitability ratios

	2021	2020
LIFO-based EBIT margin (Adjusted LIFO-based EBIT/revenue) (%)	9.6	1.3
LIFO-based EBITDA margin ((Adjusted LIFO-based EBIT + amortisation/depreciation)/revenue) (%)	12.8	6.5
Net margin (Net profit (loss)/revenue) (%)	9.7	-5.5
Return on equity – ROE (Net profit (loss)/equity at end of period) (%)	21.7	-9.9
Return on assets – ROA (Net profit (loss)/total assets at end of period) (%)	12.4	-5.2
Return on average capital employed – ROACE (Operating profit/(loss) after tax/equity + Net debt at end of period) (%)	23.5	-8.4

Source: the Company.

Figure 41. **LOTOS Group's profitability ratios (%)***

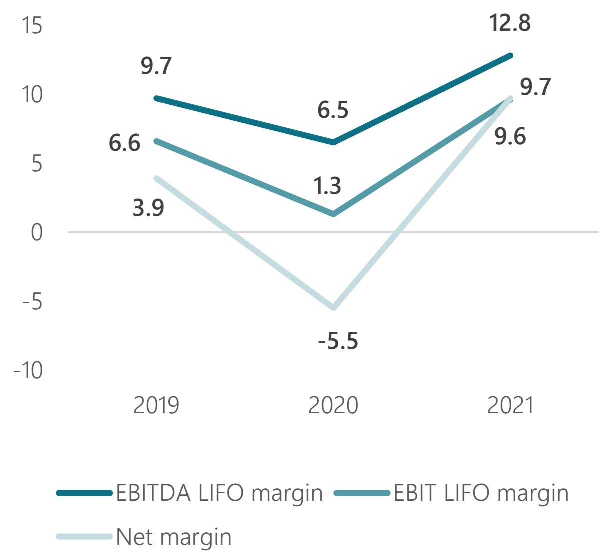
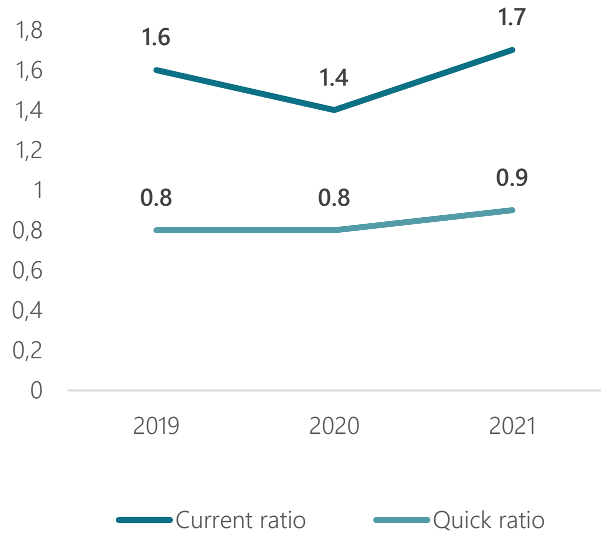


Figure 42. **LOTOS Group's liquidity ratios**



**LIFO-based EBITDA and LIFO-based EBIT margins adjusted for one-off items.*

Source: the Company.

As at the end of 2021, the LOTOS Group's liquidity ratios were more favourable than in 2020:

- the current ratio was 1.7, compared with 1.4 at year-end 2020. This was an effect of a PLN 44.9% increase in current assets, with a lower increase in current liabilities (16.8%);
- the quick ratio was close to the previous year's level of 0.9.

The total debt ratio was also at a safe level. The share of working capital in assets was 18.1%, compared with 9.7% in 2020, as a result of a PLN 2,574.2 million increase in working capital (an increase of PLN 3,542.9 million in current assets and a PLN 968.7 million increase in current liabilities).

Table 18. **Liquidity and debt ratios of the LOTOS Group**

	Dec 31 2021	Dec 31 2020
Current ratio (Current assets/current liabilities)	1.7	1.4
Quick ratio ((Current assets - inventories)/current liabilities)	0.9	0.8
Working capital to assets ((Current assets - current liabilities)/total assets) (%)	18.1	9.7
Total debt ratio (Total liabilities/total assets) (%)	43.0	47.0

Source: the Company.

Turnover ratios in 2021 were as follows:

- the inventory cycle was 50.2 days, i.e. 22.9 days shorter than in the previous year;
- the average collection period was 23.9 days, having shortened by 13.8 days on 2020 due to a 0.9% decrease in average trade receivables, with revenue higher by 58.4%;
- the average payment period was 27.2 days, having shortened by 6.5 days year on year due to the higher average amount of trade payables (+11.7%) and higher cost of sales (+37.7%).

As a result of these changes, the cash conversion cycle shortened by 30.2 days on the year before.

Table 19. **LOTOS Group's turnover ratios**

	Dec 31 2021	Dec 31 2020
Inventory cycle ((Average inventories/revenue) x 365 or 366) (days)	50.2	73.1
Average collection period ((Average trade receivables/net sales) x 365 or 366) (days)	23.9	37.7
Average payment period ((Average trade payables/cost of sales) x 365 or 366) (days)	27.2	33.7
Cash conversion cycle (Inventory turnover period+ average collection period - average payment period) (days)	46.9	77.1

Source: the Company.

8.6 The LOTOS Group's financial performance by business segment

8.6.1 Refining & Marketing

In 2021, the Refining & Marketing segment's revenue was PLN 31,850.5 million, having increased by 56.7% year on year. The increase was mainly a result of a 61.1% increase in the segment's average selling price, which in 2021 was PLN 2,966/tonne.

Sales of diesel oil accounted for the major share of revenue, And amounted to PLN 18,890.6 million, representing 59.4% of the segment's total revenue. Sales of gasolines were also an important contributor to the segment's revenue, and added PLN 4,603.7 million, or 14.5% of the segment's total.

The LOTOS Group's 2021 operating profit in the Refining & Marketing segment was PLN 3,278.0 million (compared with a loss of PLN -615.1 million in 2020).

In order to eliminate the effect of inventory measurement with the weighted average cost method on operating profit, and the deferred effect of changes in crude oil prices on the prices of finished products, the LIFO-based EBITDA is used in the refining sector as management standard. Additionally, for management purposes, operating profit/(loss) is adjusted to account for any non-recurring/one-off items (e.g. foreign exchange gains or losses on operating activities, impairment losses on assets).

In the Refining & Marketing segment LIFO-based EBITDA adjusted for one-off items increased 233.5% year on year, to PLN 3,018.9 million. The rise was mainly a result of higher crack spreads on key petroleum products.

Table 20. **Financial results of the Refining & Marketing segment (PLNm)**

	2021	2020	2021/2020	
			(PLNm)	(%)
Revenue	31,850.5	20,319.5	11,531.0	56.7%
EBIT	**3,278.0**	**-615.1**	**3,893.1**	**-**
Depreciation and amortisation	784.1	767.9	16.2	2.1%
EBITDA	**4,062.1**	**152.8**	**3,909.3**	**2,558.4%**
LIFO effect	-1,252.5	739.9	-1,992.4	-
Effect of one-off items[11]	209.3	12.6	196.7	1,561.1%
Adjusted LIFO-based EBITDA	**3,018.9**	**905.3**	**2,113.6**	**233.5%**

Source: the Company.

8.6.2 Exploration & Production

In 2021, revenue in the Exploration & Production segment was PLN 1,858.9 million, an increase of PLN 747.4 million compared with 2020, driven chiefly by a rise in natural gas prices (+389.8%) and Brent crude prices (+68.9%) on global markets. However, the significant price increases were partially offset by a 23.4% decrease in the volume of hydrocarbons sold.

The decrease in depreciation and amortisation expense was mainly attributable to depreciation of a significant portion of the Norwegian fields in 2020, as well as lower production from these fields in 2021 compared with 2020.

The increase in hydrocarbon prices resulted in a PLN 752.2 million year-on-year increase in adjusted EBITDA.

Table 21. **Financial results of the Exploration & Production segment (PLNm)**

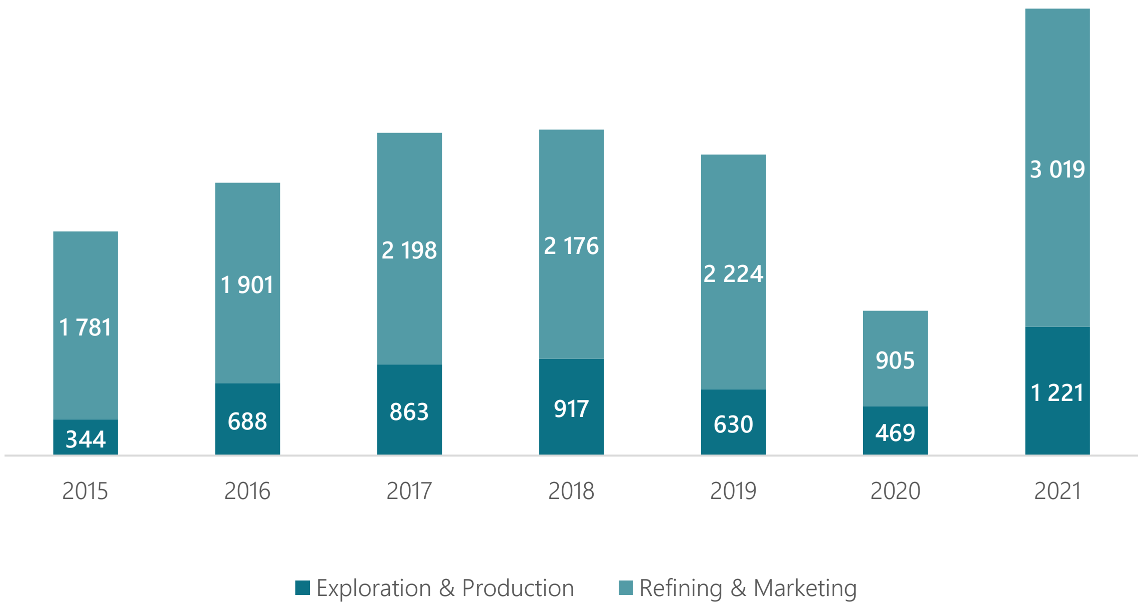
	2021	2020	2021/2020	
			(PLNm)	(%)
Revenue	1,858.9	1,111.5	747.4	67.2%
EBIT	**1,210.7**	**-764.2**	**1,974.9**	**-**
Depreciation and amortisation	264.9	322.0	-57.1	-17.7%
EBITDA	**1,475.6**	**-442.2**	**1,917.8**	**-**
Effect of one-off items[12]	-254.6	911.0	-1,165.6	-127.9%
Adjusted EBITDA	**1,221.0**	**468.8**	**752.2**	**160.5%**

Source: the Company.

[11] 2021: impairment losses on assets covered by the remedies of PLN -127 million, impairment losses on service stations of PLN -3.6 million and foreign exchange losses on operating activities of PLN -78.7 million. 2020: impairment losses on service stations of PLN -8.8 million and foreign exchange losses on operating activities of PLN -3.8 million.

[12] In 2021, impairment losses of PLN 254.6 million. In 2020, impairment losses of PLN -911.0 million. For details, see footnote 10 on p. 78.

Figure 43. **Adjusted LIFO-based EBITDA of the LOTOS Group by segment (PLNm)**



Source: the Company.

8.7 Bank and non-bank borrowings

8.7.1 Bank borrowings of Grupa LOTOS S.A.

Inventory financing and refinancing facility

On October 28th 2021, the conditions set out in the consent letter confirming the financing banks' consent for Grupa LOTOS S.A. to contribute an organised part of business to LOTOS Asfalt Sp. z o.o. were satisfied. As a result, technical changes were automatically introduced in the credit facility agreement as a result of the transfer of a tank farm (a part of the Gdańsk refinery) to LOTOS Asfalt Sp. z o.o.

On December 7th 2021, an amendment was signed to the agreement for the financing and refinancing of inventories of October 10th 2012 to extend the term of the agreement until December 16th 2022.

As at December 31st 2021, the nominal amount drawn under the facility was PLN 406 million (USD 100 million). PLN 187.9 million (USD 50 million) as at December 31st 2020.

In connection with the credit facility incurred to finance and refinance inventories, Grupa LOTOS S.A. is required to maintain the Tangible Consolidated Net Worth (TCNW) as specified in the facility agreement. The Company is also required to comply with the covenant requiring it to maintain the Loan to Pledged Inventory Value Ratio at or below the level specified in the facility agreement. As at December 31st 2021 and December 31st 2020, the Company complied with these requirements.

Refinancing of the 10+ Programme credit facilities

On July 2nd 2019, Grupa LOTOS S.A. and a bank syndicate signed credit facility agreements for a total amount of USD 500 million to refinance credit facilities contracted in 2008 to finance the 10+ Programme.

Under the agreements, the bank syndicate extended to the Company:

- a USD 400 million term facility,
- a USD 100 million working capital facility, disbursable in USD, EUR or PLN.

On October 28th 2021, the conditions set out in the consent letter confirming the financing banks' consent for Grupa LOTOS S.A. to contribute an organised part of business to LOTOS Asfalt Sp. z o.o. were satisfied. As a result, the credit facility agreement was automatically amended, with new provisions added whereby additional security was created in the form of a guarantee provided by LOTOS Asfalt Sp. z o.o. The surety agreement of October 15th 2021 whereby LOTOS Asfalt Sp. z o.o. guarantees repayment of liabilities by the Company entered into force on the date of transfer of an organised part of business to LOTOS Asfalt Sp. z o.o., i.e., on November 2nd 2021.

As at December 31st 2021, the nominal amount drawn under the term facility was PLN 974.4 million (USD 240 million). As at December 31st 2020, the nominal amount drawn under the term facility was PLN 1,202.7 million (USD 320 million). The Company also had liabilities of PLN 222.2 million under the working capital facility.

Under the facility agreements discussed above, Grupa LOTOS S.A. is required to maintain its net debt/ EBITDA ratio at a specified level. As at December 31st 2021, the Company complied with these requirements. As at December 31st 2020, one of the ratios specified in the credit facility agreements was not complied with. Given the anticipated breach of covenants, the Company requested a waiver from the financing banks. On December 29th 2020, the Company received a letter from the banks confirming their consent to waive a breach of covenants as at December 31st 2020.

Other credit agreements

On December 5th 2019, Grupa LOTOS S.A. signed a EUR 2 million credit facility agreement with PKO BP S.A. The purpose of the agreement is to finance the Pure H2 project, which is to build and launch infrastructure for the production and distribution of high purity hydrogen. The facility repayment date falls on December 23rd 2023. The facility bears interest at a floating rate based on 3M EURIBOR. Repayment is secured by a declaration of voluntary submission to enforcement. As at December 31st 2021 and December 31st 2020, the Company carried no liabilities under the facility.

The parent has access to working-capital facility financing totalling PLN 150 million. As at December 31st 2021 and December 31st 2020, the Company had no liabilities under these facilities.

Financing of LOTOS Exploration and Production Norge AS production projects

On March 21st 2019, LOTOS Exploration and Production Norge AS entered into an RBL credit facility agreement (financing of upstream projects collateralised by oil and gas reserves) with a bank syndicate, with a limit of up to USD 220 million. The syndicate comprises BNP Paribas, Skandinaviska Enskilda Banken AB, PKO BP S.A., PEKAO S.A. and Bank Gospodarstwa Krajowego. The facility is secured by pledges over Company shares, licences, inventories, bank accounts, assignment of receivables, and assignment of any amounts due under insurance contracts.

The RBL facility agreement provides for two guarantees issued by banks:

- a NOK 1070 million guarantee in respect of Sleipner DSA decommissioning liabilities, issued by Bank BNP Paribas in favour of Exxon Exploration and Production Norge AS,
- a NOK 167 million guarantee in respect of Heimdal decommissioning liabilities, issued by PKO Bank Polski in favour of Spirit Energy Norway AS.

In July 2020, the agreement was amended, with the amendment introducing certain changes favourable to the company, including the following:

- decommissioning liabilities (the company had already secured cash to cover those liabilities) were excluded from the calculation of the borrowing capacity, which helped to increase it,
- currency risk was mitigated by increasing the frequency of translation of the facility drawdown amount from NOK to USD,
- a guarantee from Grupa LOTOS S.A. was added as security for payment of the decommissioning liabilities in case the Company has insufficient borrowing power.

Under the agreement, the company may use a line of credit with BNP Paribas, whose amount is recalculated on a regular basis.

8.7.2 Bank borrowings of other Group companies

As at December 31st 2021, the aggregate amount of liabilities outstanding under credit facility agreements of other Group companies were PLN 46.5 million (December 31st 2020: PLN 942.8 million). The outstanding amount comprised mainly liabilities incurred by LOTOS Terminale S.A. as well as by the Exploration & Production segment companies (SPV Baltic Sp. z o.o.).

Agreement for the financing of the EFRA Project

On June 30th 2015, LOTOS Asfalt Sp. z o.o. and a consortium of financial institutions signed a credit facility agreement (and auxiliary agreements) under which the company obtained additional funds necessary to finance the EFRA Project.

On June 21st 2021, LOTOS Asfalt Sp. z o.o. made voluntary and full repayment of the credit facility contracted under an agreement of June 30th 2015 to finance the EFRA Project. At the same time, a working capital facility under the agreement was cancelled and settled, and interest rate hedging transactions related to the facility were settled. Also, repayment of the credit facility resulted in the release of related security interests, including a ceiling mortgage over LOTOS Asfalt Sp. z o.o.'s rights to property, registered pledges over a set of LOTOS Asfalt Sp. z o.o.'s all movables and rights, inventories, receivables from bank accounts, and shares in LOTOS Asfalt Sp. z o.o. held by the Parent. The facility was repaid from the company's own funds and a PLN 400 million loan provided to the company by the Parent.

Bank borrowings of LOTOS Paliwa Sp. z o.o.

Liabilities of LOTOS Paliwa Sp. z o.o. under bank borrowings included primarily amounts outstanding under investment facilities granted by PKO BP S.A., Pekao S.A and mBank S.A. to refinance and finance purchase of service stations.

On September 30th 2021, LOTOS Paliwa Sp. z o.o. made voluntary and full repayment of the credit facilities contracted under agreements of March 6th 2013 with a syndicate of PKO BP S.A. and Pekao S.A. and agreements with Pekao S.A. and mBank S.A. of January 26th 2015 to finance expansion of the service station network.

Bank borrowing of SPV Baltic Sp. z o.o.

On January 31st 2014, SPV Baltic Sp. z o.o. signed an investment facility agreement with Nordea Bank Polska S.A. (currently PKO BP S.A.) to finance the purchase of a drilling rig (agreement of December 20th 2013). As at December 31st 2021, the outstanding amount of liabilities under the facility was PLN 25.1 million (December 31st 2020: PLN 32.6 million).

Bank borrowing of LOTOS Terminale S.A.

LOTOS Terminale S.A. uses credit facilities contracted with Bank Millennium S.A. to finance the purchase, modernisation and expansion of fuel depots. As at December 31st 2021, the outstanding amount of liabilities under the facility was PLN 21.4 million (December 31st 2020: PLN 22.0 million).

8.7.3 Non-bank borrowings

The Group's non-bank borrowings include mainly liabilities of SPV Baltic Sp. z o.o. (an upstream company) under a loan agreement executed with Agencja Rozwoju Przemysłu S.A. on January 31st 2014 to finance the purchase of a drilling rig (contract of December 20th 2013). As at December 31st 2021, the outstanding amount of liabilities under the loan was PLN 25.1 million (December 31st 2020: PLN 32.6 million).

As at December 31st 2021, non-bank borrowings of other Group companies include a PLN 2.4 million loan of LOTOS Kolej Sp. z o.o. (December 31st 2020: PLN 3 million) contracted to partly finance upgrades of locomotives.

In 2021, no borrowing agreements with LOTOS Group companies were terminated.

Table 22. **LOTOS Group's bank and non-bank borrowings as at December 31st 2021**

Company	Lender	Principal amount as per agreement		Outstanding amount (current portion)		Outstanding amount (non-current portion)		Maturity date of		Financial terms (interest rate, interest payment schedule, etc.)	Security
		PLN (million)	Foreign currency (million)	PLN (million)	Foreign currency (million)	PLN (million)	Foreign currency (million)	Current portion	Non-current portion		
Grupa LOTOS S.A.	Bank syndicate (1)	-	400.0 USD	406.3	100.1 USD	-	-	Dec 16 2022	-	3M or 6M LIBOR USD, depending on the interest period selected at a given time + bank margin	registered pledge over inventories, registered pledge over bank accounts, assignment of rights under inventory insurance agreements, assignment of rights under inventory storage agreements, voluntary submission to enforcement
Grupa LOTOS S.A.	Bank syndicate (2)		400.0 USD	321.7	79.2 USD	649.6	160.0 USD	Jul 15 2022	Jul 15 2024	1M, 3M or 6M LIBOR USD, depending on the interest period selected at a given time + bank margin	voluntary submission to enforcement
			100.0 USD	-	-	-	-	overdraft facility	-		
Grupa LOTOS S.A.	PKO BP S.A.		2.0 EUR	-	-	-	-	-	Dec 29 2023	3M EURIBOR + bank margin	voluntary submission to enforcement
Grupa LOTOS S.A.	Pekao S.A.	150.0	-	-	-	-	-	-	-	1M WIBOR + margin	voluntary submission to enforcement
LOTOS Terminale S.A.	Bank Millennium S.A.	50.9	-	5.0	-	11.9	-	Dec 31 2022	Apr 30 2025	3M WIBOR + bank margin	mortgage, registered pledge, assignment of receivables, voluntary submission to enforcement, assignment of rights under contract and guarantees
		90.4	-	-	-	4.5	-	-	Dec 31 2032		

Company	Lender	Principal amount as per agreement		Outstanding amount (current portion)		Outstanding amount (non-current portion)		Maturity date of		Financial terms (interest rate, interest payment schedule, etc.)	Security
		PLN (million)	Foreign currency (million)	PLN (million)	Foreign currency (million)	PLN (million)	Foreign currency (million)	Current portion	Non-current portion		
SPV Baltic Sp. z o.o.	PKO BP S.A.	100.0	-	8.0	-	17.1	-	Dec 31 2022	Dec 31 2024	1M WIBOR + bank margin	registered and financial pledges over shares and assignment of rights under insurance policies
SPV Baltic Sp. z o.o.	Agencja Rozwoju Przemysłu S.A.	100.0	-	8.0	-	17.1	-	Dec 31 2022	Dec 31 2024	1M WIBOR + bank margin	registered and financial pledges over shares, assignment of rights under insurance policies and blank promissory note
LOTOS Kolej Sp. z o.o.	Fund for Environmental Protection and Water Management in Gdańsk	6.9	-	0.7	-	1.7	-	Nov 30 2022	Jul 31 2024	0.8 of rediscount rate on promissory notes, not less than 3%	blank promissory note, assignment of claims
TOTAL				21.7	-	52.3	-				
				728.0	179.3 USD	649.6	160.0 USD				
				749.7		701.9					

Bank syndicate (1): Pekao S.A., Société Générale S.A., Bank Handlowy w Warszawie S.A., Industrial and Commercial Bank of China (Europe) S.A. (Spółka Akcyjna) Polish Branch, Banco Santander S.A., CaixaBank S.A. Polish Branch, Sumitomo Mitsui Banking Corporation Bank EU AG, Erste Group Bank AG, ING Bank Śląski S.A., PKO BP S.A.,
Bank syndicate (2): ING Bank Śląski S.A., PEKAO S.A., PKO BP S.A., Sumitomo Mitsui Banking Corporation Bank EU AG, Intesa Sanpaolo S.p. A, Caixabank S.A., (Spółka Akcyjna) Industrial and Commercial Bank of China (Europe) S.A., (Spółka Akcyjna), Erste Group Bank AG,

Table 23. **LOTOS Group's intercompany loans as at December 31st 2021**

Lender	Borrower	Principal as per loan agreement	Amount outstanding as at Dec 31 2021 (current portion)		Amount outstanding as at Dec 31 2021 (non-current portion)		Maturity date of		Financial terms (interest rate, interest payment schedule, etc.)	Security	Agreement date
		Foreign currency (million)	PLN (million)	Foreign currency (million)	PLN (million)	Foreign currency (million)	current portion	non-current portion			
LOTOS Petrobaltic S.A.	Energobaltic Sp. z o.o.	9.9 PLN	0.0	-	-	-	Jan 11 2022		1M WIBOR + margin	Blank promissory note with a 'protest waived' clause and promissory note declaration	Oct 30 2013
LOTOS Petrobaltic S.A.	Energobaltic Sp. z o.o.	5.8 PLN	1.6	-	-	-	Mar 31 2022		1M WIBOR + margin	Blank promissory note with a 'protest waived' clause and promissory note declaration	Jul 16 2019
LOTOS Petrobaltic S.A.	Energobaltic Sp. z o.o.	10.0 PLN	10.4	-	-	-	Jun 30 2022	-	1Y WIBOR + margin	Mortgage, blank promissory note	Apr 23 2020
LOTOS Petrobaltic S.A.	SPV Petro Sp. z o.o.	22.3 PLN	7.5	-	0.6	-	Dec 31 2022	Jan 15 2023	1M WIBOR + margin	Blank promissory note	Jun 6 2019
LOTOS Petrobaltic S.A.	SPV Petro Sp. z o.o.	14.8 PLN	5.0	-	0.4	-	Dec 31 2022	Jan 15 2023	1M WIBOR + margin	Blank promissory note	Aug 2 2019
LOTOS Petrobaltic S.A.	SPV Petro Sp. z o.o.	16.0 PLN	-	-	16.0	-	-	Jan 15 2023	3M WIBOR + margin	Blank promissory note	Apr 30 2020
LOTOS Petrobaltic S.A.	B8 Sp. z o.o. SKA	8.5 PLN	-	-	11.1	-	-	Apr 30 2025	3M WIBOR + margin	Blank promissory note	Oct 20 2025
LOTOS Petrobaltic S.A.	B8 Sp. z o.o. SKA	80.0 PLN	-	-	88.1	-	-	Apr 30 2025	1Y WIBOR + margin	Blank promissory note	Oct 30 2018
LOTOS Petrobaltic S.A.	B8 Sp. z o.o. SKA	52.0 PLN	-	-	-	-	-	Apr 30 2025	1Y WIBOR + margin	Blank promissory note	Oct 29 2019
LOTOS Petrobaltic S.A.	SPV Baltic Sp. z o.o.	14.0 USD	-	-	79.9	19.7 USD	-	Jan 31 2025	6M LIBOR + margin	Blank promissory note	Dec 23 2013
LOTOS Petrobaltic S.A.	SPV Baltic Sp. z o.o.	46.3 PLN	-	-	27.7	-	-	Jan 31 2025	6M WIBOR + margin	Blank promissory note	Jan 27 2014
Kambr Navigation Company Limited	Miliana Shipmanagement Limited	0.2 USD	0.4	0.1 USD			Jun 30 2022		1M LIBOR + margin	None	May 29 2013

Petro Icarus Company Limited	Miliana Shipmanagement Limited	1.1 USD	2.2	0.5 USD			Jun 30 2022		1M LIBOR + margin	None	May 29 2013
Granit Navigation Company Limited	Miliana Shipmanagement Limited	0.2 USD	0.4	0.1 USD			Jun 30 2022		1M LIBOR + margin	None	May 29 2013
Bazalt Navigation Company Limited	Miliana Shipmanagement Limited	0.2 USD	0.3	0.1 USD			Jun 30 2022		1M LIBOR + margin	None	May 29 2013
Granit Navigation Company Limited	Miliana Shipmanagement Limited	0.6 USD	1.8	0.5 USD	1.8	0.4 USD	Dec 31 2022	Dec 31 2024	1M LIBOR + margin	None	Dec 10 2014
Petro Icarus Company Limited	Miliana Shipmanagement Limited	3.6 USD	4.1	1.0 USD	11.4	2.8 USD	Dec 31 2022	Mar 31 2027	1M LIBOR + margin	None	Dec 10 2014
Kambr Navigation Company Limited	Miliana Shipmanagement Limited	0.7 USD	1.0	0.2 USD	2.8	0.7 USD	Dec 31 2022	Nov 30 2030	1M LIBOR + margin	None	Dec 10 2014
Bazalt Navigation Company Limited	Miliana Shipmanagement Limited	0.6 USD	1.9	0.5 USD	1.5	0.4 USD	Dec 31 2022	Feb 29 2024	1M LIBOR + margin	None	Dec 10 2014
Miliana Shipping Group	Miliana Shipmanagement Limited	0.2 USD	0.8	0.2 USD	-	-	Dec 31 2021	-	1M LIBOR + margin	None	Aug 25 2016
Miliana Shipmanagement Limited	St. Barbara Navigation Company Limited	1.1 USD	1.7	0.4 USD	0.1	0.0 USD	Dec 31 2022	Apr 30 2023	1M LIBOR + margin	None	Nov 10 2016
Petro Aphrodite Company Limited	Miliana Shipmanagement Limited	0.2 USD	0.4	0.1 USD	0.5	0.1 USD	Dec 31 2022	Nov 30 2024	1M LIBOR + margin	None	Aug 19 2016
Grupa LOTOS S.A.	LOTOS Straż Sp. z o.o.	6.0 PLN	1.1	-	3.7	-	Dec 31 2022	Apr 30 2026	1M WIBOR + margin	Blank promissory note	Jan 9 2020
Grupa LOTOS S.A.	LOTOS Asfalt Sp. z o.o.	400.0 PLN	112.7		288.5		Dec 31 2022	Jun 8 2025	3M WIBOR + margin	Blank promissory note	Jun 8 2021
Grupa LOTOS S.A.	LOTOS Oil Sp. z o.o.	335.0 PLN	0.2		40.7		Dec 31 2022	Jun 30 2026	3M WIBOR + margin	Blank promissory note	Sep 23 2021
			138.5	PLN	476.8	PLN					
			15.0	3.7 USD	98.0	24.1 USD					
			153.5		574.8						

Source: the Company.

Table 24. LOTOS Group's intercompany loans in 2021

Lender	Borrower	Principal as per loan agreement	Amount outstanding as at Dec 31 2021				Maturity date of		Financial terms (interest rate, interest payment schedule, etc.)	Security	Agreement date
			(current portion)		(non-current portion)						
		Foreign currency (million)	PLN (million)	Foreign currency (million)	PLN (million)	Foreign currency (million)	current portion	non-current portion			
Grupa LOTOS S.A.	LOTOS Asfalt Sp. z o.o.	400.0 PLN	112.7		288.5		Dec 31 2022	Jun 8 2025	3M WIBOR + margin	Blank promissory note	Jun 8 2021
Grupa LOTOS S.A.	LOTOS Oil Sp. z o.o.	335.0 PLN	0.2		40.7		Dec 31 2022	Jun 30 2026	3M WIBOR + margin	Blank promissory note	Sep 23 2021
LOTOS Petrobaltic S.A.	ENERGOBALTIC Sp. z o.o.	10.0 PLN	10.0				Loan repaid		3M WIBOR + margin	Blank promissory note	May 27 2021

Source: the Company.

8.8 Financing of the B8 project under a notes issue

In 2016, the SPV B8 Spółka z ograniczoną odpowiedzialnością Baltic S.K.A. concluded agreements with Bank Gospodarstwa Krajowego S.A. (BGK) and Polski Fundusz Rozwoju S.A. (the Polish Development Fund, PFR) (Fundusz Inwestycji Infrastrukturalnych – Dłużny Fundusz Inwestycyjny Zamknięty Aktywów Niepublicznych) for the financing of the development of the B8 oil field in the Baltic Sea, including senior notes and subordinated notes programme agreements. On July 25th 2018, B8 spółka z ograniczoną odpowiedzialnością Baltic S.K.A. and Bank Gospodarstwa Krajowego executed an amendment to the senior note programme agreement and amendments to the terms and conditions of the notes issued by the company and acquired by BGK. On July 27th 2018, B8 Spółka z ograniczoną odpowiedzialnością Baltic S.K.A. issued notes with a total nominal value of USD 30 million. The issue proceeds were used to redeem all notes acquired by Polski Fundusz Rozwoju S.A. All notes currently outstanding are due on dates falling in the period from March 31st 2021 to June 30th 2022.

As of December 31st 2020, with respect to the issued and outstanding bonds of B8 Spółka z ograniczoną odpowiedzialnością Baltic S.K.A., there was an overrun of the project schedule and budget and a breach of one of the covenants, therefore the non-current portion of the liabilities under the agreement was presented in current liabilities. On December 14th 2020, an amendment to the senior note programme agreement and amendments to the terms and conditions of the notes were signed, whereby the liabilities were not accelerated by BGK as at December 31st 2020, and the stand still was extended until January 31st 2021.

On January 29th 2021, an amendment to the senior note programme agreement, amendments to the terms and conditions of the notes and an amendment to the commission letter were signed, extending the funding availability period until June 30th 2021 and setting the repayment dates for the end of each quarter from September 30th 2021 to December 31st 2024. On September 30th 2021, notes for a total amount of USD 5.6 million (PLN 21.9 million) were redeemed in accordance with the schedule. On December 28th 2021, an amendment to the senior notes programme agreement and addenda to the terms and conditions of the notes reduced the total amount of the notes issued from USD89.7 million to USD84.1 million, extended the availability period of the financing until January 31st 2022, and changed the maturity dates of the various tranches of the notes issued, including moving the redemption of the notes from December 31st 2021 to June 30th 2024 without changing the ultimate maturity date (December 31st 2024). Accordingly, as of December 31st 2021, the outstanding bonds of B8 Spółka z ograniczoną odpowiedzialnością Baltic S.K.A. are presented as non-current and current liabilities, depending on their maturity dates.

Security under the above agreements includes:

- pledges over shares,
- pledge over bank accounts,
- pledge over receivables,
- pledge over assets,
- sea mortgage on the Petrobaltic rig,
- voluntary submissions to enforcement,
- power of attorney over bank accounts.

As at December 31st 2021, the liability under the outstanding notes issued by B8 Spółka z ograniczoną odpowiedzialnością BALTIC S.K.A., net of issue costs, was PLN 228.1m (December 31st 2020: PLN 231.7 million).

On January 31st 2022, the Company issued notes with a nominal amount of USD 9.3 million (PLN 38 million). The issue proceeds were used between February 1st and February 3rdnd 2022 to finance and refinance capital expenditure.

8.9 Capital expenditure

In 2021, the LOTOS Group incurred capital expenditure of PLN 1,047.9 million, including PLN 645.3 million in the Refining & Marketing segment, and PLN 402.6 million in the Exploration & Production segment.

Table 25. LOTOS Group's capital expenditure on key projects in 2021

Refining & Marketing		Exploration & Production	
Project	(PLNm)	Project	(PLNm)
Expansion of service station network	194.7	B8 field	49.2
Catalysts	70.7	B3 field, including the Giant platform	23.1
Spare parts	33.2	Sleipner, Norway	41.4
Rolling stock	80.3	Norway – Heimdal	101.6
Railway loading station	12.9	YME, Norway	143.3
Hydrocracking Base Oil (HBO)	49.9	Other	44.0
Fuel terminal - construction/modernisation	16.8		
Redesign of Claus plant (sulfur recovery)	15.1		
Other	171.7		
Total	645.3	Total	402.6

Source: the Company.

8.10 Contingent liabilities

An unconditional and irrevocable guarantee issued by LOTOS Upstream Sp. z o.o. for the benefit of the government of Norway, covering the exploration and production activities of LOTOS Exploration and Production Norge AS on the Norwegian Continental Shelf, was effective as at December 31st 2021. In the guarantee, LOTOS Upstream Sp. z o.o. undertook to assume any financial liabilities which may arise in connection with the operations of LOTOS Exploration and Production Norge AS on the Norwegian Continental Shelf, consisting in exploration for and extraction of the natural resources from the sea bottom, including their storage and transport using means of transport other than ships.

As at December 31st 2021, an excise bond in the form of two promissory notes for a total lump sum of PLN 240 million, valid from August 20th 2021 to August 19th 2022, which were submitted by Grupa LOTOS S.A. to the Head of the First Tax Office in Gdańsk, continued in effect.

8.11 Assessment of the management of financial resources

The Company optimally managed its own financial resources as well as those of the key entities of the LOTOS Group which participate in the cash management system and in the liquidity reporting system. Despite the volatile environment caused by the COVID-19 pandemic, all material financial ratios remained at safe levels in 2021 and liabilities were serviced on a regular basis. Cash flows provided by operating activities were sufficient to meet the capex requirements and partly repay the outstanding financial debt. The LOTOS Group's liquidity position is safe and as at the date of issue of this report the Company did not identify any significant risks that could adversely affect that position.

8.12 Financial performance guidance

Grupa LOTOS S.A. did not publish any guidance on consolidated or stand-alone profit for 2021.

9 Grupa LOTOS S.A.'s finances in 2021

9.1 Key factors affecting the financial performance

In 2021, Grupa LOTOS S.A. earned a net profit of PLN 2,519.9 million. Operating profit was PLN 2,527.5 million (vs operating loss of PLN -1,512.5 million in 2020).

The following factors had an impact on the Company's net profit in 2021:

- increase in net revenue, Which amounted to PLN 29,036.2 million, up 63.7% year on year. The increase was attributable to higher prices of petroleum products on global markets. The average net selling price was PLN 2,589 per tonne, an increase of PLN 1,067 (70.2%) year on year. The total volume of petroleum products, merchandise and materials sold by the Company in 2021 was 11,215.1 thousand tonnes (0.4 thousand tonnes, or 3.8%, less than in 2020).
- Increase in cost of sales. It amounted to PLN 25,500.6 million (an increase of 40.1% year on year). The average unit cost of sales was PLN 2,274 per tonne (an increase of PLN 712 on 2020).
- increase in the unit gross margin. The average unit gross margin was PLN 315 per tonne (2020: PLN -40 per tonne);
- a 5.5% decrease in selling expenses, due mainly to a 31.7% decrease in the volumes of products sold abroad;
- net other expenses of PLN -24.4 million;
- net finance income of PLN 511.3 million.

Table 26. **Key items of the statement of profit or loss of Grupa LOTOS S.A. (PLNm)**

	2021	2020	2021/2020	
			(PLNm)	(%)
Revenue	**29,036.2**	**17,736.9**	**11,299.3**	**63.7%**
Cost of sales	-25,500.6	-18,202.4	-7,298.2	40.1%
Selling expenses	-702.1	-743.2	41.1	-5.5%
Administrative expenses	-281.6	-279.0	-2.6	0.9%
Net other income/(expenses)	-24.4	-24.8	0.4	-1.6%
Operating profit/(loss)	**2,527.5**	**-1,512.5**	**4,040.0**	**-**
Net finance income/(costs)	511.3	374.2	137.1	36.6%
Profit/(loss) before tax	3,038.8	-1,138.3	4,177.1	-
Income tax	-518.9	256.9	-775.8	-302.0%
Net profit/(loss)	**2,519.9**	**-881.4**	**3,401.3**	**-**

Source: the Company.

Table 27. **LIFO-based EBITDA for Grupa LOTOS S.A.**

	2021	2020	2021/2020 (PLNm)	2021/2020 (%)
EBIT	**2,527.5**	**-1,512.5**	**4,040.0**	**-**
Depreciation and amortisation	344.0	403.3	-59.3	-14.7%
EBITDA	**2,871.5**	**-1,109.2**	**3,980.7**	**-**
LIFO effect	-1,218.8	726.1	-1,944.9	-
Effect of one-off items[13]	78.3	4.2	74.1	1,764.3%
Adjusted LIFO-based EBIT	**1,387.0**	**-782.2**	**2,169.2**	**-**
Adjusted LIFO-based EBITDA	**1,731.0**	**-378.9**	**2,109.9**	**-**

Source: the Company.

Figure 44. **Sources of net profit earned by Grupa LOTOS S.A. in 2021 (PLNm)**

Source: the Company.

9.1.1 Revenue

The 63.7% increase in revenue was mainly attributable to a significant rise in the prices of petroleum products on global markets.

[13]In 2021, foreign exchange losses on operating activities were PLN -78.3 million, compared with PLN -4.2 million in 2020.

9.1.2 Operating expenses

In 2021, operating expenses of Grupa LOTOS S.A. were PLN 26,484.3 million, having increased by 37.8% year on year.

The main items of the Company's operating expenses were:

- depreciation and amortisation – PLN 344 million (down 14.7%), the decrease in depreciation and amortisation was attributable to Grupa LOTOS S.A.'s contribution, in November 2021, to LOTOS Asfalt Sp. z o.o. of an organised part of business consisting of tangible and intangible assets related to the refining operations in Gdańsk;
- raw materials and consumables used – totalling PLN 24,303.9 million, They increased by 52.6% year on year mainly as a result of a higher unit cost of processed crude oil;
- services – of PLN 1,485.9 million (an increase of 52.5%). The increase was mainly attributable to the costs of processing services as a result of the transfer of an organised part of business to LOTOS Asfalt Sp. z o.o., following which invoices for processing services were issued to the Company;
- taxes and charges – at PLN 543.2 million (a decrease of PLN 109.4 million on 2020). The decrease was mainly attributable to the recognition in 2020 of a provision to cover the deficit of CO_2 emission allowances;
- employee benefits expense – PLN 291.2 million (a decrease of 7.3%) due to a decrease in the Company's headcount following the transfer of an organised part of business to LOTOS Asfalt Sp. z o.o.;
- merchandise and materials sold – PLN 381.9 million (an increase of PLN 109.4 million on 2020). The increase was caused by higher prices of crude oil and petroleum products on global markets.

Table 28. **Operating expenses of Grupa LOTOS S.A. (PLNm)**

	2021	2020	%
Depreciation and amortisation	344.0	403.3	-14.7%
Raw materials and consumables used	24,303.9	15,930.1	52.6%
Services	1,485.9	974.1	52.5%
Taxes and charges	543.2	652.6	-16.8%
Employee benefits expense	291.2	314.0	-7.3%
Other costs by nature of expense	133.6	117.3	13.9%
Merchandise and materials sold	381.9	272.5	40.1%
Total costs by nature of expense	**27,483.7**	**18,663.9**	**47.3%**
Change in products and adjustments to cost of sales	-999.4	560.7	-278.2%
Total	**26,484.3**	**19,224.6**	**37.8%**
including:			
Cost of sales	25,500.6	18,202.4	40.1%
Selling expenses	702.1	743.2	-5.5%
Administrative expenses	281.6	279.0	0.9%

Source: the Company.

9.1.3 Net finance income/(costs)

The Company's net finance income was PLN 511.3 million. It comprised primarily:

- dividends received of PLN +340 million,
- gains on measurement and settlement of financial instruments of PLN +243.3 million,
- net interest on debt, interest income, bank commission fees and guarantees of PLN -13.4 million,
- foreign exchange losses of PLN -52.1 million.

9.2 Financial position

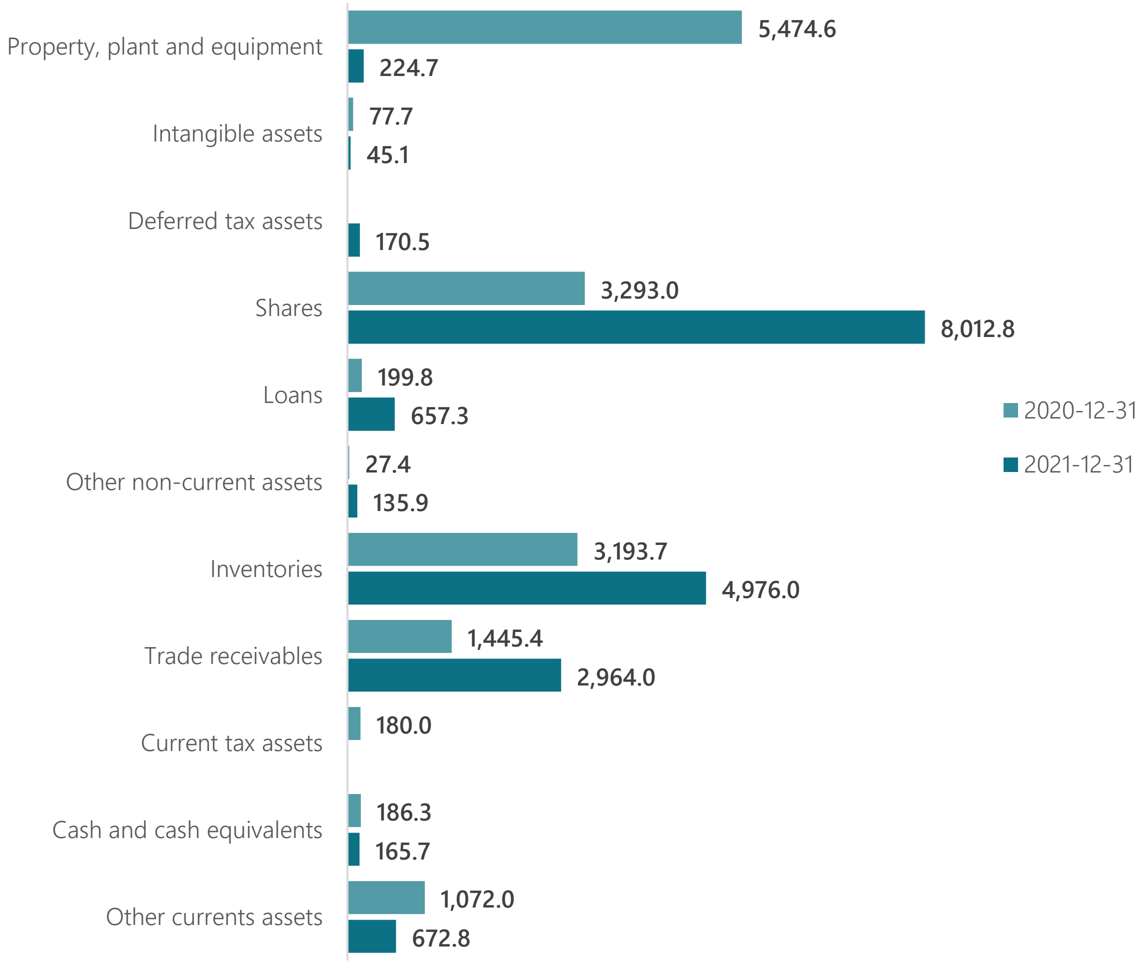
9.2.1 Assets

As at December 31st 2021, Grupa LOTOS S.A.'s total assets were PLN 18,024.8 million, or 19.0% more than at year-end 2020.

Key factors that contributed to the increase:

- a significantly lower (by PLN 5,249.9 million) amount of property, plant and equipment, mainly as a result of the transfer by Grupa LOTOS S.A. to LOTOS Asfalt Sp. z o.o. of an organised part of business consisting of tangible and intangible assets related to the refining operations in Gdańsk;
- a PLN 4,719.8 million increase in shares, mainly as a result of PLN 4,830,0 million acquisition of shares in LOTOS Asfalt sp. z o.o., paid up with a non-cash contribution in the form of an organised part of business, PLN -12.3 million remeasurement of shares in Grupa Azoty Polyolefins S.A., and PLN 98.0 million sale by Grupa LOTOS S.A. of shares in LOTOS Lab Sp. z o.o.;
- a PLN 457.5 million increase in loans, mainly due to the loan agreements executed with LOTOS Asfalt Sp. z o.o. (PLN 400 million), LOTOS Oil Sp. z o.o. (PLN 40.7 million) and LOTOS Straż Sp. z o.o. (PLN 4.4 million);
- a PLN 1,782.3 million increase in inventories, attributable mainly to higher prices/costs of inventories of crude oil, finished goods and semi-finished products;
- a PLN 1,518.6 million increase in trade receivables, also due to rising selling prices;
- a PLN 399.2 million decrease in cash and cash equivalents.

Figure 45. **Assets of Grupa LOTOS S.A. (PLNm)**



Source: the Company.

9.2.2 Equity and liabilities

At the end of 2021, Grupa LOTOS S.A.'s equity was PLN 11,934.9 million (having increased PLN 2,485.5 million compared with the end of 2020). This increase was mainly due to a PLN 2,524.4 million increase in retained earnings. Equity included revaluation reserve of PLN -10.0m and foreign exchange losses on cash flow hedges, adjusted for the tax effect, recognised in reserve capital, of PLN -28.9 million.

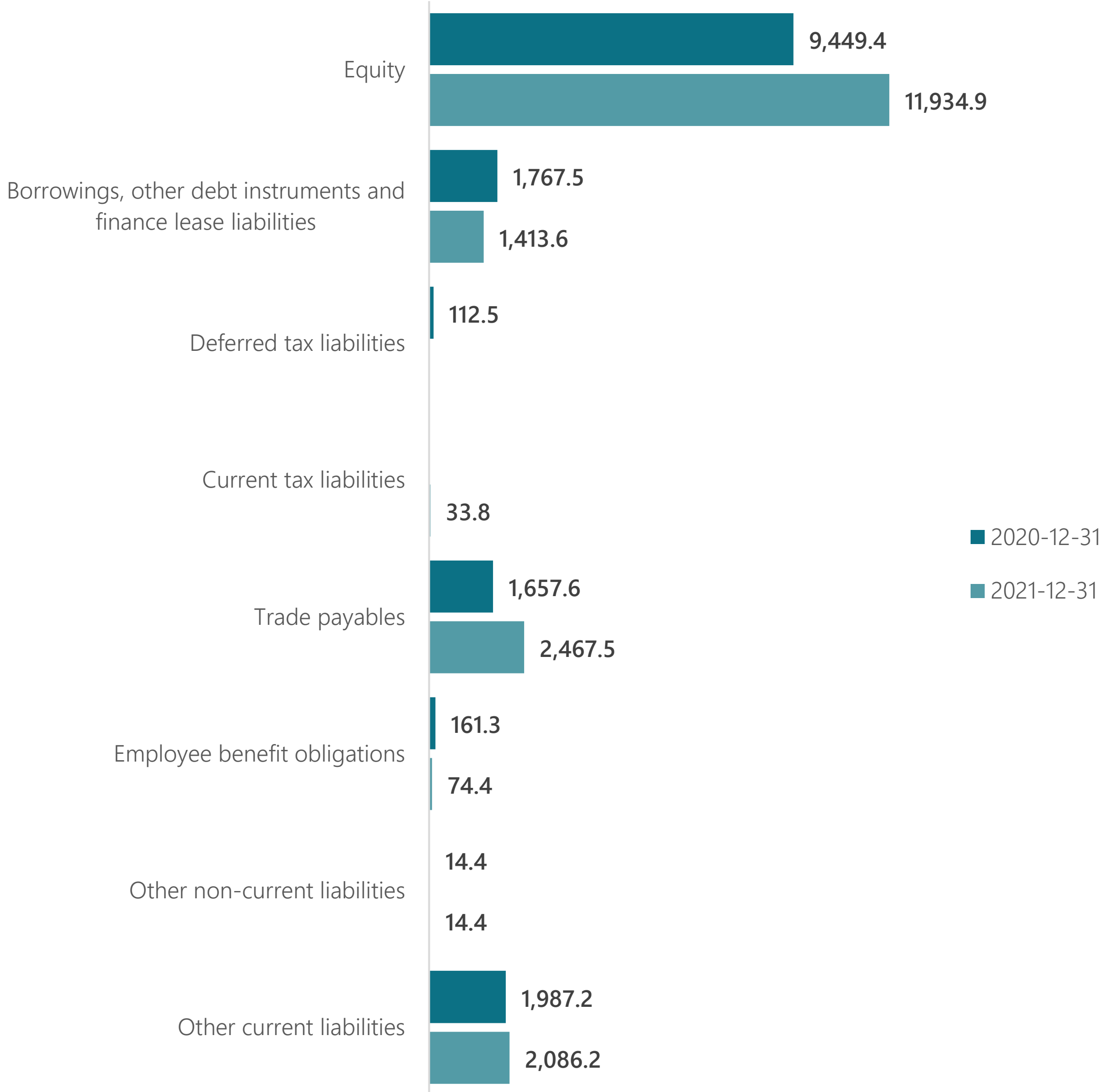
As at December 31st 2021, the share of equity in total equity and liabilities increased to 66.2% (from 62.4% at year-end 2020).

As at the end of December 2021, liabilities were PLN 6,089.9 million, having increased by PLN 389.4 million year on year. Key factors that contributed to the increase:

- a PLN 353.9 million decrease in bank borrowings and leases, mainly as a result of repayment of investment credit facilities;
- a PLN 809.9 million increase in trade payables, mainly due to a year-on-year increase in the monetary amount of crude oil purchased in December 2021;
- a PLN 86.9 million decrease in employee benefit obligations due to a decrease in the number of Company employees following the transfer of an organised part of business to LOTOS Asfalt Sp. z o.o.;
- a PLN 99.0 million increase in other non-current liabilities, mainly due to higher VAT liabilities.

As at December 31st 2021, Grupa LOTOS S.A.'s debt was PLN 1,413.6 million (a decrease of PLN 353.9 million on December 31st 2020). The ratio of debt adjusted for free cash to equity was 6.2%, having decreased 1.2pp on December 31st 2020.

Figure 46. **Equity and liabilities of Grupa LOTOS S.A. (PLNm)**



Source: the Company.

9.3 Cash flows

As at December 31st 2021, the Company held cash of PLN 672.8 million. Net cash flows in 2021 were negative at PLN -177 million (2020: PLN 530.8 million).

This change was a combined effect of the following cash flows:

- cash flows from operating activities were positive at PLN 42.7 million (PLN 1,327.6 million less than in 2020), mainly attributable to net profit and higher trade payables, offset by higher trade receivables and higher inventories due to higher prices of petroleum products on the global markets;
- cash flows from investing activities were PLN -73.9 million and included mainly expenditure on loans (PLN -445.1 million) and purchases of property, plant and equipment (PLN -263.3 million), as well as proceeds from dividends received by the Company (PLN +339.7 million), sale of shares in LOTOS Lab Sp. z o.o. (PLN +98.0 million), as well as the margin for and settlement of derivative financial instruments (PLN +181.0 million);
- cash flows from financing activities were negative at PLN -145.5 million and were mainly attributable to proceeds from bank borrowings (PLN 554.1 million) and repayment of bank borrowings (PLN -698.3 million).

Table 29. Cash flows (PLNm)

Cash flows (PLNm)	2021	2020
Cash and cash equivalents at beginning of period	849.8	319.0
Cash flows from operating activities	42.7	1,370.3
Cash flows from investing activities	-73.9	-281.5
Cash flows from financing activities	-145.5	-558.7
Net change in cash	-177.0	530.8
Cash and cash equivalents at end of period	672.8	849.8

Source: the Company.

10 Other information

10.1 Information on the auditor

Pursuant to a resolution of the Supervisory Board of Grupa LOTOS S.A. of March 11th 2018 and March 9th 2020, Deloitte Audyt Sp. z o.o. sp.k. was appointed as the auditor of the Company's financial statements for 2018–2019 and 2020–2022.

Under the agreement executed with Grupa LOTOS S.A. on June 20th 2018 (including annexes), Deloitte Audyt sp. z o.o. sp. k. of Warsaw performed the following services:

- Review of the separate and consolidated financial statements for the first six months of 2018–2021,
- audit of the full-year separate and consolidated financial statements for 2018–2021.

Previously, Grupa LOTOS S.A. used the services of Deloitte Audyt Sp. z o.o. sp. k. of Warsaw under a contract of June 29th 2007, as amended, which mandated Deloitte Audyt Sp. z o.o. sp. k. to perform the following services:

- Review of the separate and consolidated financial statements for the first six months of 2007-2009,
- Audit of the full-year separate and consolidated financial statements for 2007-2009.

Table 30.**Total fees for audit, review and verification procedures performed by Deloitte Audyt sp. z o.o. sp. k. in 2021 (PLNm)**

	2021
Audit of full-year separate and consolidated financial statements of selected companies of the LOTOS Group[14], including:	1.2
Grupa LOTOS S.A.	0.8
Assurance services, including:	0.4
Grupa LOTOS S.A.	0.4
Tax advisory services	-
Other services	-
Total	1.6

Source: the Company.

Fees for audit and for assurance services with respect to a tax return of LOTOS Exploration and Production Norge AS and selected AB LOTOS Geonafta Group companies due to Deloitte AS and Deloitte Lietuva, UAB (Deloitte Group companies) for 2021 amounted to PLN 0.6 million.

In 2020, total fees for audit, review and verification procedures amounted to PLN 1.6 million (Grupa LOTOS S.A.: PLN 1.2 million), of which: for the audit of full-year separate and consolidated financial statements of selected companies of the LOTOS Group – PLN 1.2 million (Grupa LOTOS S.A.: PLN 0.8 million), for assurance services – PLN 0.4 million (Grupa LOTOS S.A.: PLN 0.4 million).

Fees for audit, assurance services with respect to a tax return and other services for LOTOS Exploration and Production Norge AS and the AB LOTOS Geonafta Group due to, respectively, Deloitte AS and Deloitte Lietuva (companies of the Deloitte Group) for 2020 amounted to PLN 0.5 million.

[14] *Fees for the audit of accounts of selected LOTOS Group companies are paid under separate agreements between the auditor and each of the LOTOS Group companies.*

10.2 Disputes

10.2.1 Material proceedings pending before court, competent arbitration authority or public administration authority, to which Grupa LOTOS S.A. is a party

Tax settlements

The Company's tax settlements are subject to customs and tax inspections carried out by competent authorities. As at December 31st 2021, the Company disclosed a provision for tax risk, recognised in connection with such proceedings, of PLN 91.4 million (December 31st 2020: PLN 87.3 million).

After the reporting period, on January 21st 2022 the Company was notified of the results of two revenue and customs inspections for the period January−October 2014 and October−December 2015, issued on January 7th 2022. As a result of these inspections, input VAT settlements by the Company, for a total amount of PLN 23.3 million (net of interest), were questioned. The company has not filed corrections to the VAT returns for the aforementioned periods as required by the authority because it is of the opinion that there are arguments in favour of taking a different course of action. Due to the failure to submit the corrections by the Company, the tax authority (Head of the Pomeranian Customs and Fiscal Office in Gdynia) will initiate tax proceedings (transform customs and fiscal inspections into two tax proceedings) and issue decisions (both in the first and second instance). It will be possible to file complaints against the decision of the authority of second instance with the Provincial Administrative Court in Gdańsk, and if the court reaches an unfavourable verdict, it will be possible to file a cassation complaint with the Supreme Administrative Court.

In connection with a judgment by the Court of Justice of the European Union of October 16th 2019 in Case C-189/18 Glencore, on January 15th 2020 the Company filed a petition for resumption of proceedings in which the following decisions had been issued:

- Decision by the Director of the Tax Chamber in Gdańsk, dated December 29th 2015, upholding the decision by the Director of the Tax Audit Office in Bydgoszcz, dated September 28th 2015, assessing the Company's VAT liabilities for individual months of 2010 at a total amount of PLN 48.4 million,
- Decision by the Director of the Tax Chamber in Gdańsk, dated February 29th 2016, upholding the decision by the Director of the Tax Audit Office in Bydgoszcz, dated September 28th 2015, assessing the Company's VAT liabilities for individual months of 2011 at a total amount of PLN 112.5 million,
- Decision by the Director of the Tax Administration Chamber in Gdańsk, dated October 25th 2018, upholding the decision by the Head of the Gdańsk Province Customs and Tax Office in Gdynia, dated January 19th 2018, assessing the Company's VAT liabilities for January 2012 at a total amount of PLN 7.3 million,

and after resumption of the proceedings, for:

- reversal of the decisions by the tax authorities of both instances and discontinuation of the tax proceedings – with respect to the proceedings for 2010–2011;
- suspension of the proceedings until final conclusion of the court proceedings – with respect to the proceedings for 2012, in connection with proceedings pending before the Supreme Administrative Court, initiated by the Company's cassation complaint.

On October 8th 2020, the Head of the Tax Administration Chamber in Gdańsk upheld the decisions of the Head of the Tax Chamber in Gdańsk, dated December 29th 2015 and February 29th 2016. On November 23rd 2020, the Company appealed against the unfavourable decisions of the Head of the Tax Administration Chamber in Gdańsk. On December 23rd 2020, the Head of the Tax Administration Chamber in Gdańsk issued decisions refusing to revoke its decision of October 8th 2020, against which the Company filed complaints with the Provincial Administrative Court in Gdańsk. On June 15th 2021, the Provincial Administrative Court of Gdańsk dismissed the Company's complaints against refusal to reverse the final decisions concerning determination of VAT liabilities for the individual months of 2010 and 2011. On September 10th 2021, the Company appealed against the rulings of the Provincial Administrative Court of Gdańsk to the Supreme Administrative Courts.

10.2.2 Material proceedings pending before court, competent arbitration authority or public administration authority concerning or involving other entities of the LOTOS Group

Proceedings to which LOTOS Petrobaltic S.A. is party

In March 2013, LOTOS Petrobaltic S.A. received a call for payment from AGR Subsea Ltd. ("AGR") for approximately GBP 6.5 million as the contract sum payable to AGR for dredging the Baltic Beta rig's legs. LOTOS Petrobaltic S.A. challenged the amount claimed by AGR and proposed that its liability to AGR be set at PLN 16 million (i.e. GBP 3.2 million at the mid-rate quoted by the National Bank of Poland for December 31st 2012). The dispute between the parties concerns the nature of the contract, reasons for its delayed and incomplete performance, validity of its termination by LOTOS Petrobaltic S.A., as well as the demand for reimbursement of costs incurred to employ the replacement contractor engaged by LOTOS Petrobaltic S.A. to complete the work. AGR Subsea Ltd. did not accept the terms of the settlement proposed by LOTOS Petrobaltic S.A. and took its claim to court. The court decided to refer the case for mediation, to which LOTOS Petrobaltic S.A. agreed. The mediation, initiated in April 2014, was extended on several occasions. Under the Regional Court's decision of February 2016, the case was consolidated for joint examination with LOTOS Petrobaltic S.A.'s claim against AGR, described below.

In October 2013, an action for payment of GBP 5.6 million for replacement performance was brought against AGR by LOTOS Petrobaltic S.A. before the Regional Court of Gdańsk. In March 2014, the Regional Court of Gdańsk, 9th Commercial Division, issued an order of payment in writ-of-execution proceedings, against which AGR appealed. In April 2015, the Court referred the parties to mediation, but LOTOS Petrobaltic S.A. did not agree to take part in the mediation process. Pursuant to the Regional Court's decision of February 2016, LOTOS Petrobaltic S.A.'s claim will be consolidated for joint examination with AGR's claim against LOTOS Petrobaltic S.A. On December 16th 2019, a court expert's opinion was delivered stating that no allegation of failure to exercise due care may be raised against AGR for its selecting the dredging equipment. In its pleading, LOTOS Petrobaltic S.A. raised objections to the opinion and requested that a new opinion be prepared; however, the request was dismissed by the Court.

On November 27th 2020, a court hearing was held during which the case was closed and the date of entry of the Court's decision was set. On December 11th 2020, the Court issued a judgment awarding the full claimed amount to AGR, i.e. GBP 6.5 million increased by default interest, court expenses and legal representation costs, and dismissed LOTOS Petrobaltic S.A.'s claim.

As the notice stating the date of the Court's hearing closing the case and announcement of the judgment was not effectively served upon LOTOS Petrobaltic S.A.'s attorney, the attorney, without his fault, did not participate in the hearing closing the case held on November 27th 2020, did not become aware of the date of entry of the judgment issued on December 11th 2020, was absent on the date of entry of the judgment, and did not read its content.

Therefore, on January 7th 2021 a request was submitted to reinstate the deadline for submitting a request to prepare and deliver the statement of reasons for the judgment. The Company's attorney is of the opinion that the judgment is not final and that the Court will not be able to confirm the final nature of its judgment until a decision regarding reinstatement of the deadline becomes final.

On March 23rd 2021, a Court session was held to examine the request for deadline reinstatement, at which the Court took the relevant procedural steps, including hearing of the witnesses named in LOTOS Petrobaltic S.A.'s motion. Furthermore, in view of certain information of which LOTOS Petrobaltic S.A. had become aware, objections were raised to the Court regarding AGR's capacity and standing as well as its attorneys' authority to represent it. These doubts arose in March 2021 as LOTOS Petrobaltic S.A. became aware of the announcement (on May 25th 2015) of a Winding-up procedure with respect to AGR and appointment of a Liquidator to administer and represent AGR. In view of the objections, the Court ordered AGR to address these doubts. The case was adjourned to a date set by the Court. In connection with the formal objections raised by LOTOS Petrobaltic S.A. regarding ADR's capacity to sue and be sued and its proper representation, the Court should take relevant steps to examine these doubts, which it is required to do ex officio. This will certainly delay the entry of the final and unappealable judgment. Given various procedural options now available to the Court to further address the matter at hand, no certain time frame when the Court is expected to hold the next session or decide the deadline reinstatement request can be provided. On April 2nd 2021, a motion was filed for the resumption of proceedings in the case.

On April 28th 2021, the Court dismissed the motion. On June 18th 2021, a complaint was filed against the Court's decision of April 28th 2021. On May 28th 2021, the Court rejected the complaint as premature. On July 4th 2021, a complaint was filed against the Court's decision of May 28th 2021. By a decision of July 3rd 2021, the Court of Appeal modified the decision of the Court of First Instance to rectify the judgment as to the type of interest awarded.

On May 18th 2021, LOTOS Petrobaltic S.A. filed a motion with the Regional Prosecutor's Office in Gdańsk to raise a complaint for the resumption of proceedings in case No. IX GC 811/13 and IX GC 12/15, due to the fact that the prosecutor, as a participant in civil proceedings, is not bound by limitations in invoking grounds for resumption, which could potentially affect the effectiveness of LOTOS Petrobaltic S.A.'s complaint. (case No. IX GC 325/21). The complaint of the Regional Prosecutor's Office in Gdańsk for the resumption of proceedings in the combined cases was filed with the Court on August 12th 2021.

On December 1st 2021, the Court of Appeal refused to reinstate the deadline, ultimately dismissing the Company's motion of January 7th 2021. On December 9th 2021, AGR applied for enforcement of the judgment. By a decision of December 13th 2021 issued in case IX GC 696/21 (motion for resumption of proceedings – complaint of the Regional Prosecutor's Office), the Regional Court in Gdańsk suspended the enforceability of the judgment of December 11th 2020 covered by the enforcement motion. AGR's enforcement motion was dismissed by a court order dated December 15th 2021.

In view of the above, as at December 31st 2021 LOTOS Petrobaltic S.A. maintained a provision (recognised in 2020) for disputed claims of PLN 49.7 million (see Note 10.13.1 to the consolidated financial statements for 2021), including a PLN 32.1 million principal receivable (see Note 9.5 to the consolidated financial statements for 2021) and interest of PLN 17.6 million (see Note 9.7 to the consolidated financial statements for 2021).

Tax settlements of LOTOS Exploration and Production Norge AS

Due to the crisis caused by the COVID-19 pandemic and the sharp decline in commodity prices, the Norwegian government introduced a temporary tax regime for 2020-2021 that allowed companies investing on the Norwegian continental shelf to directly expense capital expenditure and to receive an immediate refund of the tax loss incurred in each of the years. With these solutions, the effective tax rate is significantly lower than the 78% applied in 2021.

In September 2020, the company submitted to the Oil Taxation Office its position on the preliminary decision of the authority concerning thin capitalisation in 2015–2016, along with its response to the 'deviation notice' for the following years 2017 and 2018. In its preliminary decision, OTO challenges the inclusion of all debt service costs and exchange rate differences on debt financing in the company's tax-deductible costs due to the company's equity being too low at the time. In the first matter raised by OTO, the expected tax surcharge for 2015 and 2016 is NOK 175 million. The estimated amount to be paid for 2017 and 2018 is NOK 20m, with the proviso that the letter pertaining to this period has not yet received the status of a tax decision.

The OTO has extended the period under investigation by one year, so the second matter is investigated for years 2017-2019. The company was creditworthy during the period and, therefore, no provision was recognised for the stated amount. Furthermore, in its tax returns for 2017 and 2019 the company did not include in its taxable income finance income arising from foreign exchange gains realised on loans in the case of which the OTO had previously questioned the deductibility of related finance costs. Tax deductions made on this account totalled NOK 88 million (2017: NOK 52 million; 2019: NOK 36 million). It is likely that the OTO will challenge the company's approach.

As at the date of these financial statements, the company received no information or inquiries concerning the issuance of a final tax decision by the OTO for 2015–2016 and 2017–2019. As at December 31st 2021, the total amount of the provision for thin capitalisation liabilities was NOK 263m (PLN 121m).

10.3 Material events subsequent to the reporting date

Execution of agreement concerning transfer of certain employees outside the LOTOS Group as part of implementing the remedies

On January 10th 2022, agreements were signed setting out the terms and conditions on which certain employees will be transferred outside the LOTOS Group after the sale of assets covered by the remedies. The documents were signed by the Management Board of Grupa LOTOS S.A., the management boards of the LOTOS Group companies covered by the remedies and representatives of trade unions willing to act as social partners in this process. Consequently, after the end of the reporting period, a PLN 41.3 million provision was recognised for payment of benefits stipulated in the agreements.

Implementation of the remedies specified by the European Commission in its conditional decision on PKN Orlen S.A. taking control of Grupa LOTOS

On January 12th 2022, work was completed on the implementation of the remedies specified in the decision of the European Commission, dated July 14th 2020, to conditionally approve the intended concentration involving acquisition of control of the Company by Polski Koncern Naftowy ORLEN S.A. ("PKN ORLEN"), issued pursuant to Council Regulation (EC) No 139/2004 of January 20th 2004 on the control of concentrations between undertakings (the "Remedies").

The Remedies included structural and behavioural commitments relating to the structure and policies of the undertakings involved in the concentration: the Company and PKN Orlen. With a view to implementing those Remedies, the conditional agreements listed below were concluded, which will take effect subject to the following conditions:

a) the Commission approves those agreements and the buyers of the assets to be sold as part of implementation of the Remedies;
b) merger of PKN ORLEN and the Company is completed;
c) the buyers (listed below) of the assets to be sold as part of implementation of the Remedies obtain anti-trust and other administrative clearance for concluding those agreements; and
d) other competent authorities' approvals required by law for the disposal of rights to certain components of the divested assets are obtained.

Grupa LOTOS S.A. announces that the following agreements have been concluded with respect to fuel production and wholesale operations to implement the Remedies:

a) a preliminary share purchase agreement for 30% of shares in LOTOS Asfalt sp. z o.o. of Gdańsk ("LOTOS Asfalt") (the "LOTOS Asfalt Preliminary Share Purchase Agreement") between the Company and Aramco Overseas Company B.V. ("Aramco"), together with a schedule containing forms of agreements that will be executed on the day of the transaction closing under the LOTOS Asfalt Preliminary Share Purchase Agreement:
    - a joint venture agreement between the Company, PKN ORLEN, Aramco and LOTOS Asfalt, to be signed to fulfil the commitment to sell to an independent third party a 30% equity interest in the company to which the refinery located in Gdańsk (the "Refinery") was transferred as a contribution in kind, and to guarantee to that third party corporate governance rights under a contract;

- o processing and offtake agreements between the Company, the Wholesale Company (as defined below) and LOTOS Asfalt, to be signed to fulfil the commitment to enter into agreements with the party referred to in item a) for the production and offtake of the Gdańsk refinery's products, including sale of fuels;
- o a framework agreement for the maintenance of mandatory stocks between PKN ORLEN and the Wholesale Company (as defined below);
- o a framework outsourcing agreement for rail logistics for transporting fuel between PKN ORLEN and the Wholesale Company (as defined below).

The LOTOS Asfalt Preliminary Share Purchase Agreement stipulates that the conclusion of the final share purchase agreement will be conditional upon, among other things, the transfer by LOTOS Asfalt to another entity of its operations which are not related to the operation of the processing Refinery, including:

- o an organised part of the enterprise currently operated by Lotos Asfalt, comprising Lotos Asfalt's employees (including the bitumen sales team) and all components of the enterprise necessary to conduct business at the production plants located in Czechowice-Dziedzice and Jasło (the "Bitumen Business");
- o the marine fuel production operations;
- o the R&D activities; and
- o the operations relating to the construction of a large-scale unit for the production of green hydrogen under the Green H2 project.

The price under the LOTOS Asfalt Preliminary Share Purchase Agreement will be calculated based on the formula defined in the LOTOS Asfalt Preliminary Share Purchase Agreement, comprising a fixed component of PLN 1,149,632,000 (one billion, one hundred and forty-nine million, six hundred and thirty-two thousand złoty) and a variable component that will increase or decrease the fixed component depending on the amount of LOTOS Asfalt's debt and working capital on the day preceding the execution of the final agreement.

The LOTOS Asfalt Preliminary Share Purchase Agreement contains a catalogue of representations and warranties made by the Company with respect to the shares being sold and LOTOS Asfalt's business standing and condition within its refining operations. Furthermore, the LOTOS Asfalt Preliminary Share Purchase Agreement provides for indemnity for Aramco against any losses resulting from specific risks set out in the LOTOS Asfalt Preliminary Share Purchase Agreement. The Company's aggregate liability under the LOTOS Asfalt Preliminary Share Purchase Agreement will not exceed the purchase price actually paid by Aramco to the Company.

The LOTOS Asfalt Preliminary Share Purchase Agreement stipulates that LOTOS Asfalt and entities of the Company's Group will conclude service level agreements under which the latter will agree to provide certain services to LOTOS Asfalt on an arm's-length basis.

The LOTOS Asfalt Preliminary Share Purchase Agreement contains a material adverse change clause, giving Aramco the right to terminate the LOTOS Asfalt Preliminary Share Purchase Agreement if specific events, precisely defined therein, occur.

b) a preliminary share purchase agreement for 100% of shares in LOTOS SPV 1 sp. z o.o. of Gdańsk (the "Wholesale Company") (the "Wholesale Company Preliminary Share Purchase Agreement"), to which an organised part of the enterprise currently operated by LOTOS Paliwa sp. z o.o. of Gdańsk ("LOTOS Paliwa") comprising the fuel wholesale business (the "Wholesale Business") will be spun off prior to the execution of the final share purchase agreement, between the Company and Aramco;

The Wholesale Company Preliminary Share Purchase Agreement stipulates that the conclusion of the final share purchase agreement will be conditional upon, among other things, the transfer of the Wholesale Business to the Wholesale Company by LOTOS Paliwa and establishment of the processing function at the Wholesale Company (which will include in particular obtaining the required administrative decisions).

The price under the Wholesale Company Preliminary Share Purchase Agreement will be calculated based on the formula defined in the Wholesale Company Preliminary Share Purchase Agreement, comprising a fixed component of PLN 1,048,432,000 (one billion, forty-eight million, four hundred and thirty-two thousand złoty) and a variable component that will increase or decrease the fixed component depending on the amount of Wholesale Company's debt and working capital on the day preceding the execution of the final agreement.

The Wholesale Company Preliminary Share Purchase Agreement contains a catalogue of representations and warranties made by the Company with respect to the shares being sold and in relation to the business standing and condition of the Wholesale Business. Furthermore, the Wholesale Company Preliminary Share Purchase Agreement provides for indemnity for Aramco against any losses resulting from specific risks set out in the Wholesale Company Preliminary Share Purchase Agreement. The Company's aggregate liability under the Wholesale Company Preliminary Share Purchase Agreement will not exceed the purchase price actually paid by Aramco to the Company.

The Wholesale Company Preliminary Share Purchase Agreement stipulates that the Wholesale Company and entities of the Company's Group will conclude service level agreements under which the latter will agree to provide certain services to the Wholesale Company on an arm's-length basis.

The Wholesale Company Preliminary Share Purchase Agreement contains a material adverse change clause, giving Aramco the right to terminate the Wholesale Company Preliminary Share Purchase Agreement if specific events, precisely defined therein, occur.

The following agreements were concluded with respect to fuel logistics:

a) a preliminary share purchase agreement for 100% of shares in LOTOS Terminale S.A. of Czechowice-Dziedzice ("LOTOS Terminale") between the Company and Unimot Investments spółka z ograniczoną odpowiedzialnością ("Unimot Investments"), together with a schedule in the form of the in-kind contribution agreement providing for the contribution of four fuel depots of PKN ORLEN located in Gdańsk, Szczecin, Gutkowo and Bolesławiec to LOTOS Terminale. The in-kind contribution agreement will be concluded between PKN ORLEN and LOTOS Terminale after PKN ORLEN has acquired control of Grupa LOTOS;
b) a conditional fuel storage agreement between PKN ORLEN and Unimot Investments, enabling PKN ORLEN to use storage capacities in fuel depots located in Gdańsk, Szczecin, Gutkowo and Bolesławiec after disposal of LOTOS Terminale shares to Unimot Investments;
c) a conditional preliminary agreement on lease and reimbursement of outlays between PKN ORLEN and Unimot Investments and Unimot S.A., providing for the obligation of PKN ORLEN, Unimot Investments and Unimot S.A. to enter into a final agreement specifying the terms of delivery of a project to construct aviation fuel storage and transport infrastructure on the premises of the fuel depot being divested in Szczecin as part of implementation of the Commitments, to be owned and operated by LOTOS Terminale.

The following agreements were concluded with respect to retail operations:

a) a preliminary share purchase agreement for shares in LOTOS Paliwa (the "LOTOS Paliwa Preliminary Share Purchase Agreement"), from which The Wholesale Business will be spun off prior to the execution of the final share purchase agreement, between the Company and MOL Hungarian Oil and Gas Public Limited Company, signed to fulfil the commitment to sell 100% of shares in LOTOS Paliwa to an entity operating on the Polish fuel retail market, including the following portfolio of service stations of the LOTOS retail chain located in Poland:
   - 412 existing service stations (265 CODO and 147 DOFO locations), including 29 service stations operating within Motorway Service Areas, and
   - lease contracts for eight new service stations at Motorway Service Areas;
   - the rights and obligations under agreements concluded with the holders of fuel cards issued by LOTOS Paliwa (the "Divestment Retail Business").

   The LOTOS Paliwa Preliminary Share Purchase Agreement stipulates that the conclusion of the final sale agreement will be conditional upon, among other things, the transfer by LOTOS Paliwa of:
   - the Wholesale Business to the Wholesale Company;
   - the retail operations of LOTOS Paliwa falling outside the scope of the Divestment Retail Business to another entity of the Company's Group.

   The price under the LOTOS Paliwa Preliminary Share Purchase Agreement will be calculated based on the formula defined in the LOTOS Paliwa Preliminary Share Purchase Agreement, comprising a fixed component of USD 609,751,791 (six hundred and nine million, seven hundred and fifty-one thousand, seven hundred and ninety-one US dollars) and a variable component that will increase or decrease the fixed component depending on the amount of LOTOS Paliwa's debt and working capital on the last day of the month preceding the month in which the final agreement is executed. The Preliminary Share Purchase Agreement contains a material adverse change clause, pursuant to which the occurrence of specific events, precisely defined therein, will trigger a reduction in the price of LOTOS Paliwa shares based on an agreed formula.

   The LOTOS Paliwa Preliminary Share Purchase Agreement contains a catalogue of representations and warranties made by the Company with respect to the shares being sold and in relation to LOTOS Paliwa's business standing and condition within the Divestment Retail Business. Furthermore, the LOTOS Paliwa Preliminary Share Purchase Agreement provides for indemnity for MOL Hungarian Oil and Gas Public Limited Company against any losses resulting from specific risks set out in the LOTOS Paliwa Preliminary Share Purchase Agreement. The Company's aggregate liability under the LOTOS Paliwa Preliminary Share Purchase Agreement will not exceed the purchase price actually paid by MOL Hungarian Oil and Gas Public Limited Company to the Company.

   The LOTOS Paliwa Preliminary Share Purchase Agreement stipulates that on the day of the transaction closing under its provisions LOTOS Paliwa and entities of the Company's Group will conclude (1) transitional services agreements, (ii) service level agreements under which the latter will agree to provide certain services to LOTOS Paliwa on an arm's-length basis, and (iii) a conditional trademark licensing agreement between the Company and MOL Hungarian Oil and Gas Public Limited Company, to be signed to fulfil the commitment to grant the purchaser of the service stations a licence to use the Company's trademarks (including Lotos, Navigator, Dynamic, etc.) for a specified period necessary to rebrand the service stations.

The following agreements were concluded with respect to aviation fuel:

a) a preliminary share purchase agreement for 50% of shares in LOTOS-Air BP Polska sp. z o.o. of Gdańsk ("LOTOS-Air BP") between the Company and Aramco;
b) a conditional agreement for sale of aviation fuel between PKN Orlen and LOTOS-Air BP, signed to fulfil the commitment to guarantee LOTOS-Air BP sales of aviation fuel;
c) a conditional agreement for storage of aviation fuel at the Olszanica fuel terminal between PKN ORLEN and LOTOS-Air BP, signed to fulfil the commitment to guarantee LOTOS-Air BP access to storage capacities of the terminal located in Olszanica, owned and operated by PKN ORLEN;
d) a conditional support agreement between PKN ORLEN, ORLEN Aviation sp. z o.o. and LOTOS-Air BP, signed to fulfil the commitment for PKN ORLEN to support the operating activities of LOTOS-Air BP in case of any force majeure events if such events affect LOTOS-Air BP's operating capabilities at the Warsaw Chopin Airport

The following agreements were concluded with respect to the bitumen business:

a) a preliminary share purchase agreement for 100% of shares in LOTOS Terminale, which, prior to the execution of the final share sale agreement, will acquire 100% of shares in LOTOS SPV 2 sp z o.o. (the "Bitumen Company"), between the Company and Unimot Investments. Prior to that, the Bitumen Business will be spun off to the Bitumen Company. The agreement will be signed to fulfil the commitment as part of the Remedies to divest the part of LOTOS Asfalt's enterprise comprising the Bitumen Business, or, alternatively, to conclude a contract for the lease of that part of the enterprise by an independent third party for a specified period;
b) a conditional bitumen sale agreement between the Company and Unimot Investments.

The following agreement were concluded with respect to biofuels:

a) a preliminary share purchase agreement for 100% of shares in LOTOS Biopaliwa sp. z o.o. of Gdańsk ("LOTOS Biopaliwa") between the Company and Rossi Biofuel Zrt., signed to fulfil the commitment to divest all shares held by the Company in Lotos Biopaliwa.

Both the purchasers in the transactions made to implement the Remedies and the terms and conditions of the agreements listed above will be subject to the Commission's approval as a result of the application filed by PKN Orlen.

More details:

→ Current Report No. 1/2022

Start of the scheduled maintenance shutdown

On March 9th 2022, the Company commenced the shutdown of refining units as part of the LOTOS refinery maintenance project.

The maintenance project will be performed as a partial shutdown between March 23rd and April 1st 2022 (its first part having taken place in the spring of 2021).

Based on the schedule, 50 out of over 65 units will be shut down for maintenance. Their gradual restart will be completed on April 16th 2022. The last stage of the project will involve maintenance of the hydrogen generation unit (insular maintenance), to be performed between April 17th and May 14th 2022.

The shutdown will reduce the refinery's throughput capacity in 2022, which will translate into a lower refining margin. The Company estimates that the maximum throughput reduction caused directly to the shutdown will be approximately 7% on an annual basis, but operational are being taken to minimise the effect. The size of the decline in the refining margin as a result of the lower throughput will depend on the prices of petroleum products on global markets, so it cannot be estimated as at the date of this report.

The estimated direct costs associated with the maintenance shutdown, which will reduce the Group's consolidated operating profit for 2022, are approximately PLN 0.2 billion. No capital expenditure will be incurred by the Company as part of the maintenance shutdown.

It is assumed that the maintenance project should not affect the Company's ability to meet its trading obligations.

More details:

→ Current Report No. 4/2022

Other events subsequent to the reporting period are discussed in Note 12.3 to the Consolidated Financial Statements of Grupa LOTOS S.A. for 2021.

10.4 Grupa LOTOS S.A. on the capital market

10.4.1 Grupa LOTOS share price

Grupa LOTOS S.A. shares have been listed on the Warsaw Stock Exchange since June 30th 2005. Its shares are included in multiple Polish and international stock market indices.

Table 31. **Grupa LOTOS shares in Polish and international stock market indices**

Return indices[15]	→ **WIG** – comprises all stocks traded on the WSE Main Market which satisfy the basic eligibility criteria → **WIG-oil&gas**–comprises WIG index companies operating in the fuels and gas sector → **WIG Poland** – comprises only shares of Polish companies included in the WIG index → **WIG ESG** – features socially responsible companies, i.e. those that comply with the principles of socially responsible business, in particular with respect to environmental, social, economic and corporate governance matters
Price indices[16]	→ **WIG20 – calculated based on the value of the 20 largest and most liquid stocks** traded on the WSE Main Market → **WIG30 – calculated based on the value of the 30 largest and most liquid stocks** traded on the WSE Main Market
Foreign indices	→ **MSCI Poland Index (Small Cap)** – includes key companies listed on the WSE

Source: In-house analysis based on WSE, MSCI, Wiener Börse.

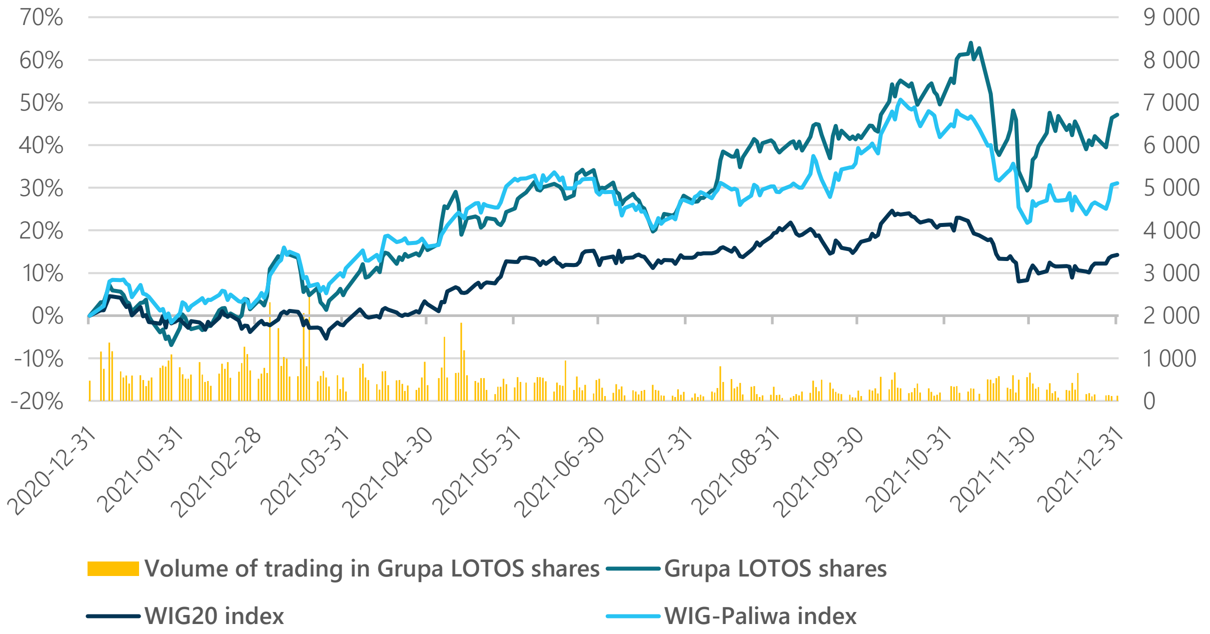
Last year saw a continuation of the rally in financial asset prices around the world, after their prices collapsed in early 2020 with the outbreak of the COVID-19 pandemic. On the Polish stock market, the index of the largest companies, the WIG20, rose by 14.3%, i.e. from 1983.98 points to 2266.92 points. Mid-cap and small companies fared even better – their mWIG40 and sWIG80 indices increased by 33.1% and 24.6%, respectively. In 2021, among industrial indices, the highest increases were recorded for WIG-Odzież (83.8%), WIG-Banki (81.3%) and WIG-Moto (69%) indices. Gaming and mining companies were at the bottom of the ranking: WIG-Games index fell 22.8%, and WIG-Górnictwo index fell 19.3%. The WIG-Paliwa index increased by 31.1%.

In 2021, the Grupa LOTOS shares traded within the range from PLN 38.59 (intraday on January 28th and 29th 2021) to PLN 69.20 (intraday on November 10th 2021). The closing price of Grupa LOTOS shares on the last day of trading in 2021 was PLN 61.00 vs PLN 41.45 at the end of 2020, which represents an increase of 47.2%. As a result, the Company's market capitalisation grew to PLN 11.3 billion, relative to PLN 7.7 billion the year before.

[15]Return index – calculated to reflect the prices of constituent stocks as well as dividend and rights income.

[16]Price index – calculated to reflect only the prices of constituent stocks, excluding dividend income.

Figure 47. Grupa LOTOS share price performance vs index performance (left axis) and Grupa LOTOS share trading volume (right axis, number of shares)



Source: In-house analysis based on WSE data.

Table 32. Grupa LOTOS shares – key figures

	2017	2018	2019	2020	2021
Free float shares			184,873,362		
Low (PLN)	36.36	51.58	71.04	25.67	38.59
High (PLN)	68.85	89.62	99.60	87.96	69.20
Closing price at end of period (PLN)	57.70	88.50	83.58	41.45	61.00
Share price change (%)	50.8	53.4	-5.6	-50.4	47.2
Average trading value (PLNm)	20.2	19.5	26.5	29.2	22.8
Average volume per session (thousand)	372.5	299.6	302.4	629.8	459.4
Trading multiples					
Capitalisation at end of period (PLNbn)	10.7	16.4	15.5	7.7	11.3
EV at end of period (PLNbn)	13.2	18.3	18.4	9.6	11.9
Earnings per share (PLN)	9.0	8.6	6.2	-6.2	17.4
P/E (x)	6.4	10.3	13.4	-	3.5
P/BV (x)	1.0	1.4	1.2	0.7	0.8
EV/EBITDA (x)[17]	4.3	5.9	6.4	7.1	2.8

Source: the Company.

[17]LIFO-based EBITDA adjusted for one-offs.

10.4.2 Investor relations

At Grupa LOTOS, day-to-day contact with investors is the responsibility of the Investor Relations Office. In 2021, Company representatives participated in five international and national investor conferences and held a number of meetings with investors and equity analysts from all over the world (a total of around 150 meetings). The Company also held quarterly earnings conferences.

Enquiries concerning Grupa LOTOS share performance on the WSE should be sent to: → ir@grupalotos.pl, or by phone; contact details are available at → inwestor.lotos.pl/en.

10.4.3 Investment recommendations

Based on the information available to the Company, in 2021, 10 investment firms (including brokerage houses and investment banks) issued recommendations on Grupa LOTOS S.A. shares.

Table 33. **Financial institutions that provided research coverage of Grupa LOTOS S.A. in 2021**

Based in Poland	Based abroad
DM Banku Handlowego (Citi)	HSBC
DM mBanku	Renaissance Capital
BM Santander	
DM BOŚ	
Ipopema Securities	
DM Trigon	
DM Pekao	
Erste Securities	

Source: the Company.

10.4.4 Dividend policy

As a public company, Grupa LOTOS S.A. paid its first dividend in 2007 (from the 2006 profit). Between 2007 and 2015, the Company did not pay any dividends.

In the Grupa LOTOS strategy for 2017–2022, the Management Board declared that the Company's objective would be to gain and maintain a dividend capacity. In 2017, Grupa LOTOS S.A. started to share its profits with shareholders again.

In 2021, given the net loss disclosed in the separate financial statements for 2020, the need to implement further material investment projects, including projects provided for in the Grupa LOTOS strategy, as well as uncertainty as to the stability of the fuel market, particularly in the context of the COVID-19 pandemic and the resulting need to secure the Company's liquidity needs, the Annual General Meeting of Grupa LOTOS followed the recommendation of the Management Board and decided to not distribute dividend for 2020 from statutory reserve funds.

Table 34. **Dividend from Grupa LOTOS S.A. for 2016-2020**

	2016	2017	2018	2019	2020
Net profit/(loss) of Grupa LOTOS S.A. (PLNm)	1,160.8	1,419.5	1,333.9	834.3	-881.4
Pre-tax dividend (PLNm)	184,873.4	184,873.4	554,620.1	184,873.4	-
Dividend payout ratio (%)[18]	15.9	13.0	41.6	22.2	-
Dividend per share (PLN)	1	1	3	1	-
Dividend yield (%)[19]	1.7	1.4	3.5	2.5	-
Dividend record date[20]	Sep 12 2017	Sep 12 2018	Sep 12 2019	Sep 14 2020	-
Dividend payment date[21]	Sep 29 2017	Sep 28 2018	Sep 27 2019	Sep 28 2020	-

Source: the Company.

[18] Dividend payout ratio – profit paid out as dividend to total net profit for a given financial year.
[19] Dividend yield – dividend per share to price per share.
[20] Dividend record date – the date on which the list of shareholders entitled to receive dividend for a given financial year is determined.
[21] Dividend payment date – the date on which dividend is paid to the shareholders.

11 Corporate governance

11.1 Corporate governance standards and scope of application

Grupa LOTOS S.A. seeks to ensure that its investor relations are carried out as between equal partners, in a manner satisfying to both parties. The key objectives of implementing the Corporate Governance Rules at Grupa LOTOS S.A. are to ensure:

- transparency of its operations as a listed company,
- trust in its relations with stakeholders,
- openness and consistent shareholder value creation.

From its stock market flotation in June 2005, Grupa LOTOS S.A. complied with most of the recommendations set out in the then effective code of 'Best Practice at Public Companies'. Then, from the beginning of 2008, it followed the 'Best Practice for WSE Listed Companies', as amended by the WSE Supervisory Board's Resolution of October 19th, 2011. As of January 1st, 2016. The Company implemented the revised set of Best Practices for Companies Listed on the Stock Exchange 2016. From July 1st, 2021 The Company applies the principles set out in the Code of Best Practice for WSE Listed Companies 2021 (the "Code of Best Practice for WSE Listed Companies 2021"), as notified on July 30th, 2021. The corporate governance code is publicly available on the website of the Warsaw Stock Exchange at: → https://www.gpw.pl/best-practice2021

Table 35. **Corporate governance principles that Grupa LOTOS S.A. did not apply since 2021 with comments on reasons for the non-compliance**

Principle No. in Best Practice 2021	Grupa LOTOS S.A. comment
2. MANAGEMENT BOARD AND SUPERVISORY BOARD	
2.1. The company should have a diversity policy for the management board and the supervisory board, adopted by the supervisory board or the general meeting, respectively. The diversity policy sets out diversity objectives and criteria in areas such as gender, field of study, expertise, age and work experience, among others, and indicates when and how the achievement of these objectives will be monitored. In terms of gender diversity, the condition for ensuring the diversity of the company's bodies is that the minority participation in a given body is no less than 30%	As at the date of issue of this report, the Company did not have in place a uniform diversity policy with respect to its Management Board and Supervisory Board which would define relevant objectives, criteria and methods of measuring diversity among members of these bodies. However, Grupa LOTOS S.A. does not regard such a policy to be prerequisite for ensuring the highest standards of performance and effective discharge of duties by the Management Board and Supervisory Board given its status as a state-controlled company, which means that members of its governing bodies are appointed in accordance with the legal regulations applicable to such entities. With respect to the qualifications and other requirements expected to be met by candidates to its management and supervisory bodies, the Company applies the criteria set out in the Commercial Companies Code of September 15th, 2000 and the State Property Management Act of December 16th, 2016. The criteria defined by legislators are aimed to ensure that persons holding managerial and supervisory positions at state-controlled companies have the relevant educational backgrounds and adequate professional experience to undertake such roles.

2.2 The persons deciding on the election of the members of the management or supervisory board of the company should ensure the comprehensiveness of these bodies by selecting persons to ensure diversity in their composition, making it possible, inter alia, to achieve the target ratio of minimum minority participation set at not less than 30%, in accordance with the objectives set out in the adopted diversity policy referred to in principle 2.1.	Members of the Management Board and Supervisory Board of Grupa LOTOS S.A. are appointed in accordance with the principle of equal access by both men and women. Looking at the current composition of the governing bodies, their diversity in terms of gender, education, experience and age is ensured in practice among members of the Management Board and the Supervisory Board. As at the date of issue of this report, the Company did not have a uniform diversity policy document which would define its diversity objectives and pertinent metrics. Accordingly, the non-compliance with principle 2.2 results from the non-compliance with principle 2.1.
2.11.6 Information on the extent to which the diversity policy has been implemented with respect to the Management Board and the Supervisory Board, including the achievement of the objectives referred to in principle 2.1.	As at the date of issue of this report, the Company had not adopted a uniform diversity policy document with respect to the appointment of members of its Management Board and Supervisory Board. Accordingly, the noon-compliance with principles 2.11,6 results from the non-compliance with principle 2.1. and 2.2.
4. GENERAL MEETING AND SHAREHOLDER RELATIONS	
4.1 The company should enable shareholders to participate in a general meeting by means of electronic communication (e- meeting) if this is justified in view of the shareholders' expectations notified to the company, provided that the company is able to provide the technical infrastructure necessary for holding such a general meeting.	So far, the Company has not provided appropriate facilities enabling its Shareholders to participate in General Meetings by electronic means of communication. In the Company's opinion, no risks arise from the non-compliance with principle 4.1 as the Company ensures that shareholders can attend the General Meeting in person or by proxy. The Company has not received any requests from Shareholders concerning such form of General Meetings. Furthermore, the General Meetings are held at the Company's registered office in Gdańsk, which facilitates attendance by Shareholders or their proxies. In fulfilment of the disclosure requirements prescribed by law, the Company promptly (no later than within 24 hours after the closing of a General Meeting), issues a current report with information on the resolutions passed at that General Meeting, voting results and objections raised, if any, posting such information simultaneously on its corporate website. The Company also publishes the questions asked by Shareholders and answers given to them during each General Meeting. In the Company's opinion, these measures are adequate to ensure the Shareholders' ability to attend and exercise their rights at General Meetings. However, the Company may begin to apply this principle in the future.

Source: the Company.

Furthermore, on October 14th, 2021, in EIB Report 2/2021, the Company reported incidental non-compliance with Principle 4.8 included in Best Practice, Section 2, GENERAL MEETING, SHAREHOLDER RELATIONS. Draft resolutions of the general meeting on matters put on the agenda of the general meeting should be tabled by shareholders no later than three days before the general meeting.

Comment: Pursuant to the Company's declaration of compliance with the Best Practice for WSE Listed Companies 2021 ("Best Practice 2021"), the Company includes in notices of general meetings a standard recommendation that shareholders submit draft resolutions of the General Meeting concerning matters on the agenda of the General Meeting no later than three days before the date of the General Meeting.

Since July 1st, 2021, i.e. the date the Best Practice 2021 came into effect, there have been no incidents of failure to comply with this principle.

11.2 Internal control and financial reporting risk management systems

The Management Board of Grupa LOTOS S.A. is responsible for the internal control function and its effective application in the financial reporting process. The Internal Audit Office of Grupa LOTOS S.A. makes an annual assessment of the internal control framework. Its findings show that in 2021 there were no changes in the internal control system that would affect the financial reporting process. Taking into account the assumptions adopted in assessing the systems, the Company has put in place organisational and process solutions making up the internal control, corporate governance, compliance and risk management framework. The solutions set out in the assessment model (good business practices) have been implemented in each of the systems and are applied in practice.

Financial statements are prepared, approved and released to the public in line with an internal procedure, whereunder oversight of the financial reporting process lies within the remit of the Head of the Finance and Accounting Centre's Office, Chief Accountant. Responsibility for preparing the consolidated and separate financial statements lies with the Financial Reporting Office of Grupa LOTOS S.A.

The LOTOS Group's consolidated financial statements and Grupa LOTOS S.A.'s separate financial statements have been prepared in accordance with the International Financial Reporting Standards ("IFRSs") endorsed by the European Union, issued and effective as at December 31st, 2021.

The list of amendments to the applicable standards is presented in Note 6 to the consolidated financial statements (page 13).

The consolidated financial statements are prepared in accordance with International Financial Reporting Standards (IFRSs), based on the financial statements of Grupa LOTOS S.A. and the entities controlled by Grupa LOTOS S.A.

Consolidated financial statements include adjustments which are absent from the accounting books of the Group's entities applying accounting standards other than IFRSs, and which have been introduced to ensure consistency of the entities' financial information with the IFRSs.

In order to ensure accounting uniformity, the accounting policies effective at the Company were implemented across the LOTOS Group companies for application in preparing their consolidation packages.

11.3 Shares and shareholders of Grupa LOTOS S.A.

As at December 31st, 2021 and the date on which this report was authorised for issue, the share capital of Grupa LOTOS S.A. was PLN 184,873,362 and was divided into 184,873,362 shares, with a par value of PLN 1 per share, including:

- 78,700,000 Series A ordinary bearer shares,
- 35,000,000 Series B ordinary bearer shares,
- 16,173,362 Series C ordinary bearer shares,
- 55,000,000 Series D ordinary bearer shares.

In 2021, the Company's share capital did not change.

All Grupa LOTOS S.A. shares are ordinary bearer shares. The Company's Articles of Association does not impose any restrictions on the transferability of its shares.

To the best of the Company's knowledge, in 2021 neither the Company, nor entities of its group or persons acting on their behalf, understood as members of the management or supervisory personnel, held or bought back any Company shares, or took any steps to buy back Company shares in that period.

The Articles of Association do not provide for any special rights of Management Board members to decide on the issue or buy-back of shares.

Grupa LOTOS S.A. does not operate an employee stock option schemes and therefore does not have any control systems for employee stock option plans.

As at December 31st 2021 and the date on which this report was released for issue, the list of shareholders holding, directly or indirectly through subsidiaries, 5% or more of total voting rights at the General Meeting of Grupa LOTOS S.A. was as follows:

Table 36. **Shareholding structure**

	Number of shares/Number of voting rights	Ownership interest and share in total voting rights (%)
State Treasury	98,329,515	53.19
Nationale-Nederlanden Powszechne Towarzystwo Emerytalne	9,257,661	5.01
Other	77,286,186	41.80
Total	**184,873,362**	**100.00**

Source: the Company.

Grupa LOTOS S.A. has not issued any securities conferring special control powers.

Special rights of the State Treasury and their exercise at companies Limitations on exercise of voting rights at the General Meeting of Grupa LOTOS S.A.

One share in Grupa LOTOS S.A. confers the right to one vote at its General Meeting. However, pursuant to the Company's Articles of Association, the voting rights of Company shareholders are limited so that none of them can exercise more than 10% of total voting rights at the Company as at the day on which the General Meeting is held, with the proviso that for the purpose of determining the obligations of buyers of major shareholdings provided for in the Act on Public Offering, Conditions Governing the Introduction of Financial Instruments to Organised Trading and Public Companies of July 29th 2005, and the Act on Insurance Activity of May 22nd 2003, such limitation of voting rights is deemed non-existent.

The above limitation does not apply to:

- shareholders who as at the date of the General Meeting's resolution imposing the limitation on voting rights are holders of shares conferring more than 10% of total voting rights at the Company;
- shareholders acting in concert with the shareholders referred to above under agreements concerning joint exercise of voting rights.

For the purpose of limiting the voting rights referred to above, the voting rights of shareholders bound by a parent-subsidiary relationship are aggregated in the following manner:

a shareholder is any person, including a parent and a subsidiary of such person, directly or indirectly entitled to exercise voting rights at the General Meeting under any legal title, including persons who do not hold shares in the Company, in particular usufructuaries, pledgees, holders of rights under depositary receipts, as defined in the Act on Trading in Financial Instruments of July 29th 2005, as well as persons entitled to participate in the General Meeting despite having disposed of their shareholdings after the record date.

A parent or a subsidiary is any person which:

- meets the relevant criteria set forth in Art. 4.1.4) of the Commercial Companies Code, or
- is a parent, a subsidiary or both a parent and a subsidiary within the meaning of the Act on Competition and Consumer Protection of February 16th 2007, or
- is a parent, ultimate parent, subsidiary, lower-tier subsidiary, jointly-controlled entity or both a parent (including an ultimate parent) and a subsidiary (including a lower-tier subsidiary and a jointly-controlled entity) within the meaning of the Accounting Act of September 29th 1994, or
- exerts (in the case of a parent) or is subject to (in the case of a subsidiary) decisive influence within the meaning of the Act on the Transparency of Financial Relations between State Authorities and State-Controlled Enterprises, as well as on Financial Transparency of certain Entrepreneurs, of September 22nd 2006, or
- whose voting rights conferred by Company shares held directly or indirectly are aggregated with voting rights of other person or persons pursuant to the Act on Public Offering, Conditions Governing the Introduction of Financial Instruments to Organised Trading and Public Companies of July 29th 2005, in connection with the holding, disposal or acquisition of major shareholdings in the Company.

Shareholders whose voting rights are aggregated or reduced pursuant to the rules described above, are jointly referred to as a Grouping. The aggregation of voting rights consists in adding up all voting rights held by individual shareholders comprising a Grouping. The reduction of voting rights involves decreasing the total number of voting rights at the General Meeting held by shareholders comprising a Grouping.

The reduction of voting rights is made as follows:

- the number of voting rights of the shareholder holding the highest number of voting rights in the Company from among all the shareholders comprising a Grouping is reduced by the number of voting rights in excess of 10% of the total number of voting rights in the Company held by all the shareholders in the Grouping;
- if, despite the reduction referred to above, the total voting rights held by the shareholders comprising the Grouping exceeds 10% of total voting rights at the Company on the date the General Meeting, the number of voting rights held by the other shareholders in the Grouping is further reduced. Such further reduction is made in a sequence established based on the number of voting rights held by individual shareholders comprising the Grouping (from the highest to the lowest). The number of voting rights of the Grouping is further reduced until the number of voting rights held by shareholders comprising the Grouping does not exceed 10% of the total vote at the Company;
- if the sequence for the purpose of the reduction of voting rights cannot be established because one or more shareholders hold the same number of voting rights, the voting rights of shareholders holding the same number of voting rights are reduced proportionally, with fractional numbers rounded down to the whole number of shares. To the extent not provided for above, the rules specified in the preceding items apply accordingly; in any case, a shareholder whose voting rights have been limited retains the right to exercise at least one vote;
- the limitation of voting rights also applies to shareholders absent from the General Meeting.

In order to determine the basis for aggregation or reduction of voting rights, each of the Company's shareholders, the Management Board, the Supervisory Board, and individual members of these bodies, as well as the Chairperson of the General Meeting, may request that a Company shareholder subject to the limitation of voting rights disclose whether it is a parent or a subsidiary of any other Company shareholder within the meaning of the Company's Articles of Association. The authority referred to in the previous sentence also includes the right to request a Company shareholder to disclose the number of voting rights held individually or jointly with other shareholders with respect to which it is a parent or a subsidiary within the meaning of the Company's Articles of Association. A person who fails to perform or improperly performs the above disclosure obligation may exercise its voting rights from a single share only, until the disclosure obligation is duly fulfilled, and any attempts to exercise its voting rights from the remaining shares are ineffective.

When in doubt, the provisions on the restriction of voting rights will be interpreted in accordance with Art. 65.2 of the Civil Code.

The limitation of voting rights expires once the shareholding of a Company shareholder who as at the date of the General Meeting's resolution imposing the limitation of voting rights held shares conferring more than 10% of total voting rights at the Company falls below 5% of the Company's share capital.

Subject to the relevant provisions of the Commercial Companies Code, a material change in the Company's business profile may be introduced without a buyout of Company shares held by the shareholders who do not agree to such change.

To the best of the Company's knowledge, as at March 21st, 2022 members of the Management Board and the Supervisory Board did not hold any shares in Grupa LOTOS S.A. or any shares in Grupa LOTOS S.A.'s related companies.

On February 27th 2018, the State Treasury (Grupa LOTOS S.A.'s main shareholder) and PKN ORLEN S.A. signed a letter of intent concerning PKN ORLEN S.A.'s acquisition of control over Grupa LOTOS S.A., understood as PKN ORLEN S.A.'s direct or indirect acquisition of at least 53% of Grupa LOTOS S.A.'s share capital. The transaction is subject to a number of conditions precedent, including receipt of relevant corporate approvals and antitrust clearance.

After PKN Orlen S.A. had collected the required documents, on July 14th 2020 the European Commission conditionally approved its acquisition of Grupa LOTOS S.A. and the remedy package that needed to be implemented to go ahead with the process.

On August 18th 2020, the State Treasury (as the majority shareholder of Grupa LOTOS S.A.), PKN Orlen S.A. ("PKN Orlen") and the Company signed a memorandum of understanding for the proposed transaction in which PKN Orlen would acquire Company shares representing at least 53% of its share capital and voting rights at its general meeting from the State Treasury (the "Transaction") (the "MoU").

The Transaction would result in the acquisition by PKN ORLEN, directly or indirectly, of equity control of the Company. The scope and structure of the Transaction have not yet been determined. The MoU is not binding on, and does it give rise to any obligations for, the parties with respect to achieving the result of consummating the Transaction, but only defines their joint understanding of the expected structure of the Transaction and further cooperation in its implementation as at the MoU date. The MoU remains in force until March 31st 2022.

On March 12th 2021, the Company's Management Board gave a general approval for internal organisational measures aimed at optimising the Group's structure and preparing it for implementation of the model whereby the remedies necessary to go ahead with the intended acquisition of control over the Company by PKN Orlen S.A. are to be carried out.

Rules governing amendments to the Company's Articles of Association

An amendment to the Articles of Association requires that a relevant resolution be passed by the General Meeting by an absolute majority of votes, save for amendments to Article 10.1 of the Articles of Association, which require that four-fifths of votes be cast in favour of the amending resolution and at least half of the Company's share capital be represented at the General Meeting.

After the General Meeting passes a resolution on amending the Company's Articles of Association, the Management Board of Grupa LOTOS S.A. notifies the registry court of the amendments. The amendments come into force upon their registration by the court.

A consolidated text of the Articles of Association incorporating the amendments is then produced by the Supervisory Board, provided that the Supervisory Board receives relevant authorisation from the General Meeting.

The Articles of Association of Grupa LOTOS S.A. currently in effect were approved by General Meeting resolution No. 26 to amend the Articles of Association of Grupa LOTOS S.A. dated June 28th 2019. The amendments related to:

- powers of the General Meeting to approve to any subscription for, acquisition or disposal of shares in another company, and any disposal or acquisition of non-current assets;
- powers of the Supervisory Board to give its opinions on financial statements submitted to the General Meeting, and to approve any disposal of non-current assets or execution of contracts;
- responsibilities of the Management Board concerning the reporting obligations;
- rules governing disposal of non-current assets by the Company.

11.4 General Meeting

The powers and proceedings of the General Meeting (GM) of Grupa LOTOS S.A. are defined in detail in the Company's → Articles of Association (consolidated text of September 13th 2021) and the → Rules of Procedure for the General Meeting (consolidated text of June 30th 2009).

Powers of the General Meeting include in particular:

- Review and approval of the Company's full-year financial statements, Directors' Report on the Company's operations, the Group's consolidated financial statements, and Directors' Report on the Group's operations, for the previous financial year;
- Grant of discharge to members of the Management Board and Supervisory Board in respect of their duties;
- Decision on the allocation of profit or coverage of loss, as well as application of funds and accounts created from profit, subject to any specific provisions which may require different application of such funds;
- Appointment and removal of members of the Supervisory Board;
- Increase in or reduction of the Company's share capital;
- Decisions concerning claims for redress of any damage caused upon formation of the Company or when managing or supervising the Company;
- Sale or lease of, or creation of limited property rights in, the Company's business or its organised part;
- Approval of acquisition of real property, right of perpetual usufruct of or interest in real property, with a value exceeding PLN 5,000,000, as determined based on appraiser valuation; as well as approval of disposal of real property, right of perpetual usufruct of or interest in real property, with a value exceeding PLN 200,000, as determined based on appraiser valuation;
- Approval of encumbrance or disposal of shares in LOTOS Petrobaltic S.A. or Przedsiębiorstwo Przeładunku Paliw Płynnych Naftoport Sp. z o.o.;
- Approval of disposal of shares in another company if the market value of such shares exceeds:
  - PLN 100,000,000; or
  - 10% of total assets within the meaning of the Accounting Act of September 29th, 1994, as determined based on the most recent approved financial statements.

- Subject to Art. 9.7, approval of disposal of non-current assets within the meaning of the Accounting Act of September 29th 1994 (Dz.U. of 2019, items 351), classified as intangible assets, property, plant and equipment or long-term investments, including contribution thereof to a company or cooperative, if the market value of such assets exceeds 5% of total assets within the meaning of the Accounting Act of September 29th 1994, determined based on the most recent approved financial statements, as well as granting to another entity the right to use such assets for a period longer than 180 days in a calendar year, under a legal transaction, if the market value of the subject matter of such legal transaction exceeds 5% of total assets, with the proviso that in the event of granting the right to use under:
  - a lease, rental or other contract for granting rights to use an asset to a third party against consideration – the market value of the asset to be understood as the amount of consideration for:
    - one year – if the right to use the asset was granted under an agreement concluded for an indefinite term,

        - The entire term of the agreement – if the right to use the asset is granted under an agreement concluded for a definite term;
    - Commodate or other agreements for granting to another entity the right to use an asset free of charge – the market value of the asset involved in the legal transaction is the amount of consideration which would have been payable to the Company if a lease or rental agreement had been concluded, for:
        - One year – if the right to use the asset is granted under an agreement concluded for an indefinite term;
        - The entire term of the agreement – if the right to use the asset was granted under an agreement concluded for a definite term;
- Subject to Art. 9.8, approval of acquisition of non-current assets within the meaning of the Accounting Act of September 29th, 1994, where the value of such assets exceeds:
    - PLN 100,000,000; or
    - 5% of total assets within the meaning of the Accounting Act of September 29th, 1994, as determined based on the most recent approved financial statements;
- Approval of a purchase of or subscription for shares in another company where the value of such shares exceeds:
    - PLN 100,000,000; or
    - 10% of total assets within the meaning of the Accounting Act of September 29th, 1994, as determined based on the most recent approved financial statements.
- Amendment to the Company's Articles of Association;
- Creation and release of special accounts, including capital reserves;
- Decision on cancellation of Company shares and buy-back of shares for cancellation, and definition of terms for share cancellation;
- Issue of notes and bonds;
- Dissolution, liquidation or transformation of the Company, or its merger with another entity;
- Issue of subscription warrants;
- Approval of buy-back of Company shares (own shares) and creation of a pledge over Company shares in the case specified in Art. 362.1.2 of the Commercial Companies Code;
- Approval of the implementation of incentive schemes;
- Approval of payment of interim dividend if the Supervisory Board has not approved it;
- Determination of rules of remuneration for members of the Management and Supervisory Boards.
- Consideration and approval of the remuneration report.

Unless the Commercial Companies Code or the Articles of Association provide otherwise, resolutions of the General Meeting are passed by an absolute majority of votes. Resolutions concerning the following matters may be adopted by a majority of at least four-fifths of the votes, provided that at least half of the Company's share capital is represented at the General Meeting:

- Dissolution of the Company;
- Relocation of the Company's registered office abroad;
- Change of the Company's business profile in a way that would limit its operations in the area of manufacture, processing and sale of refined petroleum products;
- Sale or lease of, or creation of limited property rights in, the Company's business or its organised part whose activities include manufacture, processing and sale of refined petroleum products;
- Merger with another company;
- Demerger of the Company;
- Creation of preference rights attached to shares;
- Establishment of a European company (societas Europaea), transformation into such company or joining such company;
- Amendments to the relevant section of the Articles of Association.

Both documents are available in the → Corporate Governance section of the Company's website.

General Meetings are convened by the Management Board of Grupa LOTOS S.A., as provided for in the Articles of Association or in the Commercial Companies Code, by publishing an announcement on the Company's website and in the manner prescribed for publication of current reports, in accordance with the provisions of the Act on Public Offering, Conditions Governing the Introduction of Financial Instruments to Organised Trading and Public Companies.

Extraordinary General Meetings (EGM) may be convened by the Management Board on its own initiative, by the Supervisory Board (if the Supervisory Board deems it appropriate), or by shareholders representing at least half of the Company's share capital or at least half of total voting rights at the Company.

A shareholder or shareholders representing at least 1/20 of the Company's share capital may request that an EGM be convened and that certain items be placed on its agenda. If an EGM is not convened within two weeks of the submission of such a request to the Management Board, the Registry Court may authorise the requesting shareholders to convene an Extraordinary General Meeting.

A request to convene a General Meeting and put particular items on its agenda, made by parties entitled to do so, should be presented with grounds. A shareholder or shareholders representing at least 1/20 of the Company's share capital may, before a GM, submit to the Company draft resolutions for items which have been or are to be placed on the agenda of the General Meeting.

Only persons who are the Company shareholders sixteen days prior to the date of a General Meeting (i.e. on the date of registration of participation in the GM) are entitled to participate in the General Meeting. Holders of rights under registered shares or provisional certificates as well as pledgees and usufructuaries holding voting rights are entitled to participate in the General Meeting, provided that they are entered in the Share Register on the registration date. A Shareholder may participate in a General Meeting and exercise voting rights in person or by proxy. The proxy is obliged to disclose to the shareholder any circumstances leading to any actual or potential conflict of interest and may vote exclusively in line with the voting instructions issued by the appointing shareholder.

Any matter to be discussed at a General Meeting is subject to prior consideration by the Supervisory Board. No resolution may be passed on matters not included in the agenda of the General Meeting, unless the Company's entire share capital is represented at the GM and no objections to the adoption of such resolution are raised by any of the persons participating in the GM, with the exception of motions to convene an Extraordinary General Meeting and procedural motions. Resolutions of a General Meeting are adopted by an absolute majority of votes, unless the Articles of Association or Commercial Companies Code provide otherwise. Resolutions and proceedings of a General Meeting are recorded by a notary public. The minutes of the GM are signed by the Chairman of the GM and the notary public.

In 2021, the General Meeting of Grupa LOTOS S.A. was held twice:

- The Annual General Meeting was held on June 30th, 2021.
- The Extraordinary General Meeting was held on October 14th 2021, convened at the request of the Management Board of Grupa LOTOS S.A., to obtain appropriate corporate approvals for the disposal of an organized part of business of Grupa LOTOS S.A. and the disposal of shares in individual subsidiaries of the LOTOS Group, the transactions intended to reorganise the LOTOS Group in the implementation of the remedies specified by the European Commission in its decision of July 14th 2020, as part of the process of PKN Orlen S.A. acquiring a controlling equity interest in Grupa LOTOS S.A.

11.5 Activities of the Supervisory Board

11.5.1 Appointment and removal of members of the Supervisory Board

In accordance with Grupa LOTOS S.A.'s Articles of Association, the Supervisory Board consists of five to nine members, including the Chair, Deputy Chair and Secretary. Members of the Supervisory Board are appointed and removed from office by the General Meeting. Notwithstanding the foregoing, as long as the State Treasury remains a shareholder in the Company, the entity authorised to exercise voting rights attached to the shares held by the State Treasury will have the right to appoint one member of the Supervisory Board by way of a written statement to that effect. Members of the Supervisory Board nominated by the State Treasury should meet the requirements laid down in *the Act on State Property Management of December 16th, 2016 (Dz.U. of 2016, No. 2259)*.

Members of the Supervisory Board are appointed for a joint term of three years. Any or all Supervisory Board members may be removed at any time prior to expiry of their term of office. The Chair of the Supervisory Board shall be appointed by the General Meeting. The Deputy Chair and the Secretary are elected by the Supervisory Board from among the other Supervisory Board members. The Supervisory Board elected by block voting consists of five members.

On June 30th, 2020, the General Meeting appointed the following persons to the Supervisory Board for the 11th joint term of office:

- Chairwoman of the Supervisory Board – Beata Kozłowska-Chyła
- Katarzyna Lewandowska
- Dariusz Figura
- Piotr Ciach
- Adam Lewandowski
- Grzegorz Rybicki.

On June 22nd, 2021, Mr Adam Lewandowski, Member of the Supervisory Board of Grupa LOTOS S.A. of the 11th joint term of office, resigned from his position with effect as of June 29th, 2021.

Subsequently, on June 30th, 2021, the Annual General Meeting appointed to the Supervisory Board of the 11th joint term of office Ms. Katarzyna Maćkowska and Mr. Rafał Włodarski, whom the State Treasury - the majority shareholder of the Company - had proposed during the Annual General Meeting.

11.5.2 Composition

Until June 29th, 2021, the composition of the Supervisory Board was as follows:

Table 37. **Composition of the Supervisory Board of Grupa LOTOS S.A. until June 29th, 2021**

	Position held	On the Supervisory Board of the 10th term of office from:
Beata Kozłowska-Chyła	Chair	June 14th 2017
Piotr Ciach	Deputy Chair	June 14th 2017
Katarzyna Lewandowska	Secretary	June 14th 2017
Dariusz Figura	Member	June 14th 2017
Adam Lewandowski	Member	June 14th 2017
Grzegorz Rybicki.	Member	June 28th 2018

Source: the Company.

As at December 31st, 2021 and the date on which this report was released for issue, the composition of the Company's Supervisory Board was as follows:

Table 38. **Composition of the Supervisory Board of Grupa LOTOS S.A. as at December 31st, 2021**

	Position held	On the Supervisory Board of 11th term of office from:
Beata Kozłowska-Chyła	Chair	June 30th 2020
Piotr Ciach	Deputy Chair	June 30th 2020
Katarzyna Lewandowska	Secretary	June 30th 2020
Dariusz Figura	Member	June 30th 2020
Grzegorz Rybicki.	Member	June 30th 2020
Katarzyna Maćkowska	Member	June 30th 2021
Rafał Włodarski	Member	June 30th 2021

Source: the Company.

11.5.3 Powers and responsibilities

The Supervisory Board of Grupa LOTOS S.A. operates on the basis of the Company's Articles of Association (consolidated text of September 13th, 2021) and the Rules of Procedure for the Supervisory Board of Grupa LOTOS S.A. Summary information on members of the Supervisory Board:

- Beata Kozłowska-Chyła has been a member of the Company's Supervisory Board since May 25th, 2016. Since June 30th, 2016, she has served as Chair of the Supervisory Board.
  A graduate of the Faculty of Law and Administration of the University of Warsaw. Ms Kozłowska-Chyła obtained a PhD in law, followed by a post-doctoral degree (doctor habilitatus) in law.
- Piotr Ciach – member of the Supervisory Board as of December 22nd, 2016. Graduate of the Faculty of Law at the Maria Curie-Sklodowska University in Lublin, he has also completed an MBA programme run by the Gdańsk Foundation for Management Development in cooperation with the IAE Aix-en-Provence Graduate School of Management.
- Katarzyna Lewandowska first became a member of the Company's Supervisory Board on January 27th, 2016. A graduate of the Faculty of Domestic Trade at the Warsaw School of Economics.
- Dariusz Figura – member of the Supervisory Board as of January 27th, 2016. Graduate of the Warsaw University of Technology (Faculty of Electronics and Information Technology), he completed with honours an Executive MBA programme at Warsaw Business School of the Warsaw University of Technology (joint programme with the HEC School of Management - Paris, London Business School and Norwegian School of Economics).

- Grzegorz Rybicki – member of the Supervisory Board as of June 28th, 2018. A graduate of the Faculty of Law and Administration of the University of Warsaw. In 1990–1992, he completed judge training at the Regional Court of Warsaw, and in 1992–1994 he completed legal training as an attorney-at-law. Since 1995, he has worked as an attorney-at-law in a Warsaw-based law firm. In 1993, he completed training and internship for attorneys-at-law in Chicago, USA, organised by the American Bar Association, the Polish Bar Council, and DePaul University of Chicago.
- Katarzyna Maćkowska – member of the Supervisory Board as of June 30th, 2021. Graduate of the Faculty of Law at the Catholic University of Lublin. She received her Doctor of Jurisprudence degree in 2013.
- Rafał Włodarski – member of the Supervisory Board as of June 30th, 2021. A graduate of the Faculty of Law and Administration of the University of Warsaw. In 2013, after completing his legal counsel training conducted by the Warsaw Bar Association, he was admitted to the bar.

The following persons have knowledge and skills in law:

- Beata Kozłowska-Chyła,
- Piotr Ciach,
- Grzegorz Rybicki
- Katarzyna Maćkowska
- Rafał Włodarski

The following persons have knowledge and skills in accounting or financial auditing:

- Dariusz Figura – has completed MBA studies, has served as Vice President – Chief Financial Officer of a joint-stock company, and has been involved in annual audits of financial statements of a joint-stock company,
- Katarzyna Lewandowska – holds a university degree in economics, a graduate of the Warsaw School of Economics,
- Grzegorz Rybicki – has had professional contact with accounting and financial reporting through the provision of legal services to companies and skills acquired while serving on supervisory boards.

The following persons have the knowledge and skills specific to the fuel industry:

- Dariusz Figura – knowledge and skills gained while serving on the Supervisory Board of Grupa LOTOS S.A.
- Katarzyna Lewandowska – knowledge and skills gained while serving on the Supervisory Board of Grupa LOTOS S.A.
- Piotr Ciach – knowledge and skills gained while working at the Energy Ministry's Department responsible for supervision of fuel companies such.
- Grzegorz Rybicki – knowledge and skills gained while serving on the Supervisory Board of Grupa LOTOS S.A.
- Rafał Włodarski – knowledge and skills gained while working at the Ministry of State Assets' department responsible for supervision of fuel companies.

According to the representations received by the Company, the following persons meet the independence criteria:

- Beata Kozłowska-Chyła,
- Dariusz Figura,
- Grzegorz Rybicki
- Katarzyna Maćkowska

It should be noted that most of these persons served on the Company's Supervisory Board while the *Grupa LOTOS Strategy for 2017–2022* was being approved, published and implemented.

The Supervisory Board exercises ongoing supervision of the Company's business, across all areas of its operations. The powers and responsibilities of the Supervisory Board include in particular:

- Appointment and dismissal of members of the Company's Management Board following a recruitment procedure;
- Suspension, for a good reason, of any or all Management Board members from their duties, as well as delegation of its member(s) to temporarily stand in for Management Board members who are unable to perform their duties;
- Approval of the rules of procedure for the Management Board;
- Selection and appointment of the auditor to audit the Company's and the Group's financial statements, in compliance with the provisions of the Accounting Act;
- Assessment of the Company's financial statements in terms of their consistency with the accounting records and documents, as well as with facts; assessment of the Directors' Report on the Company's operations and the Management Board's recommendations as to the allocation of profit or coverage of loss, and submission of written reports on the findings of such assessments to the General Meeting;
- Giving opinions on any matters to be submitted for consideration by a General Meeting, whether annual or extraordinary;

- Grant of approval to members of the Management Board to serve, and receive remuneration for serving, on supervisory or management bodies of other entities;
- Approval of the implementation of an investment project and to the assumption of related liabilities if these involve expenditure or charges exceeding the equivalent of a half of the Company's share capital;
- Definition of the scope and required level of detail for annual budgets and long-term strategies, as well as dates for their submission by the Management Board;
- Approval of strategies for Grupa LOTOS S.A. and the LOTOS Group;
- Giving opinions on annual budgets;
- Giving opinions on reports on entertainment expenses, legal costs, marketing costs, public relations and social communication expenses, and management consultancy fees, and reports on best practices defined by the Prime Minister on the basis of the Act on State Property Management, for companies in which the State Treasury is a shareholder;
- Representation of the Company in agreements or contracts, and in any disputes, with Management Board members;
- Adoption of the rules for management of special accounts;
- Approval of the rules and plan of sponsorship activities and assessment of the results of such activities;
- Approval of the rules of procedure for the Supervisory Board committees;
- Making decisions concerning appointment of external experts, as required by the Supervisory Board or its committees;
- determination of the dividend payment date in the circumstances described in Art. 7.3 of the Company's Articles of Association.
- Setting up a foreign establishment within the meaning of double-tax treaties to which the Republic of Poland is a party;
- Disposal of non-current assets whose market value exceeds 0.1% but does not exceed 5% of total assets within the meaning of the Accounting Act of September 29th 1994, as determined based on the most recent approved financial statements;
- Assumption of any other liability or disposal of an asset whose value – under a single transaction or a series of related transactions, other than transactions performed in the ordinary course of management – exceeds the equivalent of a half of the Company's share capital, unless the power to approve such transactions has been assigned to the General Meeting;
- Any foreign equity investments made by the Company if the value of such investments does not exceed PLN 100,000,000 or 10% of total assets within the meaning of the Accounting Act of September 29th 1994, as determined based on the most recent approved financial statements, as well as any investments in property, plant and equipment;
- Exercise by the Company of its voting rights at the general meeting of any subsidiary or other company if the value of shares held by the Company, measured at the acquisition or subscription price, exceeds one-fifth of the Company's share capital, where the vote relates to:
  a) allocation of profit or coverage of loss;
  b) share capital increase or reduction;
  c) mergers with other companies or transformations;
  d) sale or lease of the company's business or its encumbrance with usufruct rights;
  e) amendment to the company's articles of association.
- Formation of commercial-law companies or joining other companies, contributions to be made to pay for shares in companies, and disposals of shares, if the Company's existing equity interest in a given company, or interest to be held by the Company following the acquisition of or subscription for the shares, measured at the acquisition or subscription price, does not exceed PLN 100,000,000 or 10% of total assets within the meaning of the Accounting Act of September 29th 1994, as determined based on the most recent approved financial statements;
- Acquisition of real property, right of perpetual usufruct of or interest in real property, with a value of up to PLN 5,000,000, as determined based on appraiser valuation, as well as disposal of real property, right of perpetual usufruct of or interest in real property, with a value of up to PLN 200,000, as determined based on appraiser valuation;
- Payment of interim dividend;
- Execution of any contract for the provision of legal services, marketing services, public relations and social communication services, or management consultancy services, if the aggregate amount of fees for the services provided under such contract or any other contract concluded with the same entity exceed PLN 500,000, VAT exclusive, per year;
- Amendment to an agreement for the provision of legal services, marketing services, public relations and social communication services, or management consultancy services whereby the fees under the agreement are increased above the amount referred to in item 9;
- Execution of any agreement for the provision of legal services, marketing services, public relations and social communication services, or management consultancy services where no maximum fees are specified;

- Execution of a donation agreement, or any other agreement having a similar effect, with a value exceeding PLN 20,000 or 0.1% of total assets within the meaning of the Accounting Act of September 29th, 1994, as determined based on the most recent approved financial statements;
- Execution of an agreement on release from debt, or any other agreement having a similar effect, with a value exceeding PLN 50,000 or 0.1% of total assets within the meaning of the Accounting Act of September 29th, 1994, as determined based on the most recent approved financial statements;
- From among its members, the Supervisory Board appoints an Audit Committee and may also appoint other committees, whose remits, organisation of work and operating procedures are defined by the Rules of Procedure for the Supervisory Board and rules of procedure defined separately for each such committee. The committees' rules of procedure as well as any amendments thereto will become effective once approved by the Supervisory Board.

Supervisory Board meetings are held on a regular basis, every four to six weeks and, as a rule, are attended by all members of the Supervisory Board. In 2021, the Supervisory Board held 21 meetings with use of means of remote communication, and 15 voting procedures using means of remote communication.

In 2021, by Resolution No. 210/XI/2021 of October 11th 2021, the Supervisory Board issued to the General Meeting a positive opinion on the disposal of an organised part of Grupa LOTOS S.A.'s business to LOTOS Asfalt Sp. z o.o. by way of a non-cash contribution in exchange for all new shares in the increased share capital of LOTOS Asfalt Sp. z o.o., such disposal being one of the remedies specified by the European Commission in its decision of July 14th 2020 as part of the process of acquisition by PKN Orlen S.A. of a controlling equity interest in Grupa LOTOS S.A. Further, by Resolution No. 211/XI/2021 of October 11th 2021 and Resolutions No. No. 221–227/XI/2021 of October 29th 2021, the Supervisory Board issued to the General Meeting positive opinions on the disposal of shares in individual subsidiaries of the LOTOS Group, the transactions intended to reorganise the LOTOS Group also in the implementation of the remedies specified by the European Commission in its decision of July 14th 2020, as part of the process of acquisition by PKN Orlen S.A. of a controlling equity interest in Grupa LOTOS S.A.

The Supervisory Board performs its duties collectively but may set up ad hoc or standing committees to supervise specific areas of the Company's activities or investigate specific issues.

The following committees operate within the Supervisory Board of Grupa LOTOS S.A.

- Audit Committee,
- Strategy and Development Committee, and
- Organisation and Management Committee.

Audit Committee

The Audit Committee of the Supervisory Board of Grupa LOTOS S.A. is a statutory organisational unit of the Company's Supervisory Board with a supporting and advising role.

The obligation to operate the Committee in the Company stems from the Act of May 11th 2017 on Statutory Auditors, Audit Firms and Public Supervision.

As Polish law requires that audit committees be established at entities supervised by the Polish Financial Supervision Authority, the Office of the Polish Financial Supervision Authority has prepared a code of best practice for audit committees. The code was prepared based on international standards, press articles, guidelines from international organisations, as well as knowledge and experience of audit firms and internal auditors. The purpose of the recommendations was to provide audit committee members with a tool that may contribute to a more effective performance by committee members by providing guidance on how the committee should operate and identify areas that require special attention of the supervisory board considering the statutory tasks and responsibilities imposed on the audit committee.

Acting as an analytical and controlling body and giving the Supervisory Board material recommendations, the Audit Committee perform its activities pursuant to the Rules of Procedure for the Supervisory Board and the Rules of Procedure for the Audit Committee.

The main tasks of the Audit Committee include the provision of ongoing advice to the Supervisory Board on proper implementation of the budget reporting, financial reporting and internal control standards at the Company, as well as collaboration with the Company's auditors, including in particular:

- monitoring of the financial reporting process,
- monitoring of the effectiveness of the Company's internal control, internal audit and risk management systems,
- monitoring of financial auditing procedures, including monitoring of the audit of full-year and consolidated financial statements,
- monitoring of the work and reports of the independent qualified auditor, including monitoring of the independence of the auditor and the audit firm, including active participation in selecting the audit firm,
- analysing selected economic events relevant to the Company's operations,

- ongoing reporting of any material issues related to the Audit Committee's operations to the Supervisory Board,
- monitoring of the implementation by the Management Board of any proposals and recommendations submitted by the Audit Committee,
- assessing the auditor's independence and giving consent to the provision of permitted non-audit services by the auditor,
- developing a policy for the audit firm selection and a policy for the provision of permitted non-audit services by the audit firm, and defining a procedure for the audit firm selection,
- giving recommendations to the Supervisory Board regarding the appointment of auditors or audit firms,
- providing recommendations to ensure reliability of the financial reporting process,
- approving proposals from the Company or its related entity to assign permitted non-audit services to the audit firm selected to audit the financial statements.

The Audit Committee, appointed by the Supervisory Board from among its members, consists of three to five members.

Following the resignation of Mr Adam Lewandowski as Member of the Supervisory Board of Grupa LOTOS S.A. tendered on June 22nd 2021 and appointment of Ms Katarzyna Maćkowska and Mr Rafał Włodarski to the Supervisory Board by the General Meeting on June 30th 2021, on July 21st 2021 the Supervisory Board appointed a new Audit Committee of the Supervisory Board of Grupa LOTOS S.A., whose composition as at December 31st 2021 and as at the date of issue of this report was as follows:

- Dariusz Figura – Chairman,
- Katarzyna Lewandowska – Member,
- Piotr Ciach – Member,
- Grzegorz Rybicki – Member,
- Katarzyna Lewandowska Member.

From January 1st to December 31st, 2021, the Audit Committee held 13 meetings.

Strategy and Development Committee

The Strategy and Development Committee of the Grupa LOTOS Supervisory Board is a standing collective body operating within the Supervisory Board with an advisory and opinion-forming role. Its duties are discharged by presenting to the Supervisory Board proposals, recommendations, opinions and reports, based on the Rules of Procedure for the Supervisory Board and the Rules of Procedure for the Strategy and Development Committee.

The main tasks of the Strategy and Development Committee include presenting to the Supervisory Board opinions and recommendations on planned investment projects with a material effect on the Company's assets, including in particular:

- giving opinions on the Company's and the Group's long-term development strategies,
- assessing the effect of proposed and actual investment projects on the Company's assets,
- monitoring the implementation of investment projects,
- assessing any actions, agreements, and other documents related to steps taken to acquire, sell, encumber or otherwise dispose of the Company's material assets,
- giving opinions on all strategic documents submitted to the Supervisory Board by the Management Board.

The Strategy and Development Committee, appointed by the Supervisory Board from among its members, consists of three to five members.

Following the resignation of Mr Adam Lewandowski as Member of the Supervisory Board of Grupa LOTOS S.A. tendered on June 22nd 2021 and appointment of Ms Katarzyna Maćkowska and Mr Rafał Włodarski to the Supervisory Board by the General Meeting on June 30th 2021, on July 21st 2021 the Supervisory Board appointed a new Strategy and Development Committee of the Supervisory Board of Grupa LOTOS S.A., whose composition as at December 31st 2021 and as at the date of issue of this report was as follows:

- Rafał Włodarski Chairman,
- Beata Kozłowska-Chyła Member,
- Piotr Ciach – Member,
- Katarzyna Lewandowska – Member,
- Dariusz Figura – Member.

Until July 21st, 2021, Ms Beata Kozłowska-Chyła, Chairwoman of the Supervisory Board, served as Chairwoman of the Strategy and Development Committee.

From January 1st to December 31st, 2021, the Strategy and Development Committee held 16 meetings.

Organisation and Management Committee

The Organisation and Management Committee is a standing advisory and opinion-forming body operating collectively within the Supervisory Board.

Discharging its duties by providing the Supervisory Board with material resolutions, proposals, recommendations, opinions and reports, the Organisation and Management Committee operates on the basis of the Rules of Procedure for the Supervisory Board and the Rules of Procedure for the Organisation and Management Committee of the Supervisory Board of Grupa LOTOS S.A.

The main tasks of the Organisation and Management Committee include the provision of ongoing advice to the Supervisory Board on the Company's management structure, including organisational solutions, remuneration scheme and choice of personnel, to enable the Company to achieve its strategic objectives, and in particular:

- preparing detailed rules for recruitment procedures to appoint members of the Management Board,
- performing the recruitment procedures to appoint members of the Management Board (except for activities reserved for the Supervisory Board),
- recommending the terms of employment for members of the Management Board,
- assessing the performance of members of the Management Board, including satisfaction of criteria for awarding variable remuneration components,
- periodically reviewing and assessing the Company's remuneration system,
- assessing the HR management system in place at the Company.

Members of the Organisation and Management Committee, including its Chairperson, are appointed by the Supervisory Board from among its members. The Committee consists of three to five members.

Following the resignation of Mr Adam Lewandowski as Member of the Supervisory Board of Grupa LOTOS S.A. tendered on June 22nd 2021 and appointment of Ms Katarzyna Maćkowska and Mr Rafał Włodarski to the Supervisory Board by the General Meeting on June 30th 2021, on July 21st 2021 the Supervisory Board appointed a new Organisation and Management Committee of the Supervisory Board of Grupa LOTOS S.A., whose composition as at December 31st 2021 and as at the date of issue of this report was as follows:

- Beata Kozłowska-Chyła – Chairwoman,
- Katarzyna Lewandowska – Member,
- Grzegorz Rybicki – Member,
- Piotr Ciach – Member,
- Katarzyna Lewandowska – Member.

January 1stFrom January 1st to December 31st, 2021, the Organisation and Management Committee held 16 meetings.

11.6 Activities of the Management Board

11.6.1 Appointment and removal of members of the Management Board

The composition of the Management Board and the manner of appointing Management Board members are defined by the Company's Articles of Association, the Supervisory Board's resolutions and laws of general application.

The Management Board consists of three to seven members, including the President and Vice Presidents of the Management Board. The President and Vice Presidents of the Management Board are appointed by the Supervisory Board following a recruitment and selection procedure carried out pursuant to the Act of December 16th 2016 on the management of state property (Dz. U. of 2016, item 2259, as amended), taking into consideration 'The Best Practices to be Followed in the Selection of Candidates to Governing Bodies of Companies of Key Importance to the State Treasury', defined by the Minister of State Treasury.

Members of the Management Board should also meet the requirements laid down in the Act on State Property Management of December 16th, 2016 (Dz.U. of 2020, No. 735). Management Board members are appointed for a joint term of three years.

Each member's mandate expires no later than on the date of the General Meeting which approves the financial statements for the previous full financial year. A Management Board member's mandate shall also expire upon their resignation from office.

The President, Vice Presidents, as well as the entire Management Board may be removed from office or suspended from duties for a good reason by the Supervisory Board at any time prior to expiry of their term of office.

Supervisory Board resolutions to appoint or remove any or all members of the Management Board require that at least two-thirds of members of the Supervisory Board are present and participate in the vote.

The current 11th joint term of office of the Management Board commenced on May 27th 2021 and will expire in 2024.

11.6.2 Composition

As at December 31st, 2020, the Management Board of Grupa LOTOS consisted of:

- Zofia Paryła – President of the Management Board
- Jarosław Wittstock – Vice President of the Management Board, Corporate Affairs.

- Marian Krzemiński – Vice President of the Management Board, Chief Investment and Innovation Officer
- Artur Cieślik – Vice President of the Management Board, Chief Strategy and Development Officer
- Piotr Walczak – Vice President of the Management Board, Chief Refining and Marketing Officer

By Resolution No. 77/XI/2021 of January 22nd, 2021 the Supervisory Board established a new structure of the Management Board of Grupa LOTOS S.A. of the 10th joint term of office: President of the Management Board

- Vice President of the Management Board, Corporate Affairs
- Vice President of the Management Board, Chief Investment and Innovation Officer
- Chief Strategy and Development Officer,
- Vice President of the Management Board, Chief Refining and Marketing Officer
- Vice President of the Management Board, Mergers and Acquisitions

Following a recruitment procedure, on January 22nd, 2021 the Supervisory Board appointed Krzysztof Nowicki as Vice President of the Management Board, Mergers and Acquisitions, of Grupa LOTOS S.A. of the 10th joint term of office, with effect from January 26th, 2021.

On January 22nd, 2021, Mr Marian Krzemiński, Vice President of the Management Board, Chief Investment and Innovation Officer, of Grupa LOTOS S.A. of the 10th joint term of office tendered his resignation with effect as of March 1st, 2021.

Following a recruitment procedure, on February 17th, 2021 the Supervisory Board appointed Mr Paweł Jarosław Piotr Wróbel as Vice President of the Management Board, Chief Investment and Innovation Officer, of Grupa LOTOS S.A. of the 10th joint term of office, with effect as of March 2nd, 2021.

On March 2nd, 2021, Mr Artur Cieślik, Vice President of the Management Board, Chief Strategy and Development Officer, of Grupa LOTOS S.A. tendered his resignation with effect as of March 15th, 2021.

The Supervisory Board of the Company decided not to initiate the recruitment procedure for Vice President of the Management Board, Chief Investment and Innovation Officer, of Grupa LOTOS S.A.

Subsequently, by Resolution No. 108/XI/2021, on March 29th, 2021 the Supervisory Board established a new structure of the Management Board of Grupa LOTOS S.A. of the 10th joint term of office:

- President of the Management Board
- Vice President of the Management Board, Corporate Affairs
- Vice President of the Management Board, Chief Investment and Innovation Officer
- Vice President of the Management Board, Chief Refining and Marketing Officer
- Vice President of the Management Board, Mergers and Acquisitions

As of March 29th, 2021, the composition of the Grupa LOTOS Management Board was as follows:

- Zofia Paryła – President of the Management Board
- Jarosław Wittstock – Vice President of the Management Board, Corporate Affairs.
- Jarosław Wróbel – Vice President of the Management Board, Chief Investment and Innovation Officer
- Piotr Walczak – Vice President of the Management Board, Chief Refining and Marketing Officer
- Krzysztof Nowicki – Vice President of the Management Board, Mergers and Acquisitions

Following the expiry of the 10th joint term of office of the Management Board of Grupa LOTOS S.A at the end of May 2021, and having carried out the recruitment procedure, on May 27th, 2021 the Supervisory Board appointed the Management Board of Grupa LOTOS S.A for the 11the joint term of office. The Supervisory Board of Grupa LOTOS S.A.:

- appointed Zofia Maria Paryła as President of the Management Board of the 11th joint term of office (Resolution No. 139/XI/2021),
- appointed Krzysztof Marian Nowicki to the Management Board of the 11th joint term of office, as Vice President for Mergers and Acquisitions (Resolution No. 140/X/2021),
- appointed Jarosław Piotr Wróbel to the Management Board of the 11th joint term, as Vice President, Chief Investment and Innovation Officer (Resolution No. 141/XI/2021),
- appointed Jarosław Adam Wittstock to the Management Board of the 11th joint term, as Vice President for Corporate Affairs (Resolution No. 142/XI/2021),
- appointed Piotr Aleksander Walczak to the Management Board of the 11th joint term, as Vice President, Chief Refining and Marketing Officer (Resolution No. 143/XI/2021).

As at the issue date of this report, the Management Board of Grupa LOTOS S.A. consisted of:

- Zofia Paryła – President of the Management Board
- Jarosław Wittstock – Vice President of the Management Board, Corporate Affairs.

- Jarosław Wróbel – Vice President of the Management Board, Chief Investment and Innovation Officer
- Piotr Walczak – Vice President of the Management Board, Chief Refining and Marketing Officer
- Krzysztof Nowicki – Vice President of the Management Board, Mergers and Acquisitions

- Zofia Paryła is a graduate of the Executive Master of Business Administration (MBA) offered by the Apsley Business School of London and Collegium Humanum, Warsaw Management University.
  She holds numerous certificates confirming her management, bookkeeping and accounting skills, as well as a certificate confirming completion of training for candidates for members of the supervisory bodies of state-owned companies.
  Ms Paryła started her professional career in 1985, at Krajowa Państwowa Komunikacja Samochodowa (public transport company) of Kraków. In 1997–2017, she worked in the private sector, including as chief accountant in 2010–2017. Then, for two years, Ms Paryła served as Vice President of the Management Board at Energa Centrum Usług Wspólnych Sp. z o.o.
  She has served on the Company's Management Board since July 25th, 2019.

- Jarosław Wittstock graduated from the Faculty of Management of the University of Gdańsk. He is a manager with nearly 25 years of experience in managing the workforce of several to several hundred at both Polish and international companies. He has extensive managerial experience, including in the leasing industry [BG Leasing S.A. – Director of the Trading Office at the company headquarters, Hanza Leasing S.A. – President of the Management Board], pharmaceuticals [PZF Cefarm – Managing Director], and medical industry (President of the Management Board of ZKS Szpital Gdańsk Sp. z o.o.,
  Managing Director of Swissmed Centrum Zdrowia S.A.). He was also a sole trader operating through his own consulting practice.
  In 2016–2017, he headed the Gdańsk Branch of the Agency for Restructuring and Modernisation of Agriculture (ARiMR). Since March 2017, he has worked for the Energa Group, first as Director of the Marketing and Communication Department of Energa S.A., and since May 2017 as Vice President of the Management Board of Energa Obrót S.A., responsible for corporate governance, wholesale, sales to business customers, and marketing.
  He has served on the Company's Management Board since September 11th, 2018.

- Piotr Walczak is a graduate of the Gdańsk University of Technology. He holds an Executive MBA diploma from the Gdańsk Foundation for Management Development (GFKM). He is a manager with experience in operational, risk and safety culture management within the energy industry, in the area of network infrastructure design and construction. From 1992 to 2007, he was responsible for managing the investment project department, small hydro department and operation/maintenance department at Energa Operator, Olsztyn Branch. From 2007, he was associated with Eltel Networks Energetyka, where in 2012-2017 he served as a Member of the Management Board, Production Organisation, responsible for managing the bidding division, procurement process in the area of supplies and subcontracting, building and managing an order book and active management of relations with state-owned companies to promote Eltel Networks Energetyka's image as a responsible contractor. Then, until 2020, he was a Member of the Management Board, Managing Director of Eltel Networks Energetyka's Business Unit in Poland, responsible for defining the organisation's strategy and development directions, preparation of annual business plans and performance reporting, operational management, organisational culture, safety and quality management, as well as other areas. In 2020, he became Managing Director at Przedsiębiorstwo Badawczo Wdrożeniowe OLMEX (a research and implementation firm), responsible for internal audits, development of effective cost models and performance monitoring tools, creating agile project teams and fostering an open communication culture.

- Jarosław Wróbel – completed a master's degree programme and doctoral studies at the University of Economics in Katowice. He also completed a postgraduate professional improvement course in electrical engineering at the Warsaw University of Technology's Faculty of Electrical Engineering. He is a holder of an Executive MBA diploma (from the University of Gdańsk and RMS Erasmus University) and a Post-MBA certificate in strategic financial management (from the University of Gdańsk and Swiss Bussiness School). Since 1992, he has worked in the energy sector. From 1993 to 1999 he worked at Elektrociepłownia Będzin S.A., a CHP plant operator where he was responsible for the development and implementation of a restructuring plan, as well as the preparation and implementation of the first privatisation process in the Polish power industry. He has been involved in the PGNiG Group since 2002. In 2003−2013, he served as Vice President for Economic Affairs at Górnośląska Spółka Gazownictwa Sp. z o.o., where he was the originator and sponsor of a programme to deploy an Integrated Process Support Platform based on ERP and CIS (Customer Information System) solutions. From 2016 to 2018,
  President of the Management Board, and in 2020–2021 – Chairman of the Supervisory Board of Polska Spółka Gazownictwa, which, under his stewardship, developed and implemented a strategic package of changes for the Polish gas distribution sector for 2016–2022, called the Gas Sector Constitution. In 2018–2020, as President of the Management Board of ORLEN Południe S.A., he was a co-author and sponsor of a programme to

construct a biorefinery on the basis of the Refinery in Trzebinia and Refinery in Jedlicze, the ORLEN Group's competence centre in the field of biocomponents and biofuels. From January 10th, 2020 to March 1st, 2021 he held the positions of Vice President of the Management Board of PGNiG S.A. and member of the Board of Directors of PGNiG Upstream Norway AS.
From October 28th to November 12th, 2020, he was acting President of the PGNiG S.A. Management Board.

- Krzysztof Nowicki is a graduate of the Faculty of Law and Administration of the Adam Mickiewicz University of Poznań. He has also completed postgraduate studies in company law at the University of Łódź. He holds the professional title of legal counsel. Winner of MANAGER AWARD 2018. He was the founder of and partner in a law firm specialising in labour, civil and administrative law. In 2010, he became Head of the Legal Department of PGE Górnictwo i Energetyka Konwencjonalna of Bełchatów, and then Management Board Vice President for Corporate Affairs and Asset Management. He was also Chairman of the GKS Bełchatów football club. In 2016, he was appointed President of the LOTOS Oil Sp. z o.o. Management Board. In 2018-2020, he additionally served as Head of Corporate Affairs at Grupa LOTOS S.A. Since 2020, has been Head of Strategy and Investors Relations at Grupa LOTOS S.A. and Chairman of the Supervisory Boards of LOTOS Asfalt, LOTOS Infrastruktura, and RCEkoenergia. He acts in an advisory capacity for the purposes of important investment projects and organisation development.
  He has worked for the LOTOS Group since 2016.

11.6.3 Powers and responsibilities

The Management Board manages the affairs of Grupa LOTOS S.A. and represents it in all dealings, except for those expressly reserved for the General Meeting or the Supervisory Board and those falling beyond ordinary course of management, which require a prior resolution of the Management Board.

The scope of matters requiring a resolution is defined in the Rules of Procedure for the Management Board (adopted by Resolution No. 162/X/2021 of the Management Board of Grupa LOTOS S.A. of April 21st, 2021 and approved by Resolution No. 112/XI/2021 of the Supervisory Board of Grupa LOTOS S.A. of April 26th, 2021).

The following matters require resolutions by the Management Board:

- adoption or amendment of the Rules of Procedure for the Management Board,
- adoption or amendment of the Organisational Rules for the Company, including the Company's organisational structure,
- adoption of any rules, regulations and policies which are required for the Company by law,
- granting of powers of proxy (which requires unanimous vote by all Management Board members),
- adoption of the Company's annual budget,
- adoption of the strategy for the LOTOS Group,
- adoption of the Company's financial statements for the previous financial year, prepared in accordance with the International Financial Reporting Standards, along with the Directors' Report on the Company's operations in the previous financial year (not later than within three months of the reporting date),
- adoption of the consolidated financial statements for the previous financial year, prepared in accordance with the International Financial Reporting Standards, along with the Directors' Report on the LOTOS Group's operations in the previous financial year (not later than within three months of the reporting date),
- convening of annual and extraordinary General Meetings on the Management Board's own initiative or at the request of a shareholder or shareholders representing at least one-twentieth of the share capital, as well as in other cases provided for in the Commercial Companies Code (in due time),
- determining a General Meeting's agenda,
- any equity or capital investments undertaken by the Company that will result in incurring obligations, or divestments, if such investments or divestments are expected to give rise to expenditures, charges or disposals exceeding PLN 500,000 (VAT exclusive) in total,
- any agreements resulting from the transactions referred to in the preceding item 11 that cause the Company to incur obligations exceeding PLN 5,000,000 (VAT exclusive), as well as any other acts (annexes, agreements, etc.) that increase the Company's obligations under an obligational relationship above the stated amount or, in the case of a contract involving periodic performance, if the value of performance over its entire term exceeds PLN 5,000,000 (VAT exclusive),
- execution of debt relief agreements or other agreements having a similar effect,
- execution of donation agreements or other agreements having a similar effect,
- execution (or amendment) of any agreement for the provision of legal services, marketing services, public relations and social communication services, or management consultancy services, if the total fees for the services to be provided under such agreement exceed PLN 500,000 (VAT exclusive) per year or if the maximum amount of remuneration has not been specified,
- undertaking by the Company of one or a series of related legal transactions other than those referred to in items 11 through 15 above, which result in incurring an obligation or making a disposal for an amount exceeding PLN 5,000,000 (VAT exclusive) under an obligational relationship, and, in the case of an indefinite-

term contract involving periodic performance, if the value of performance over four years exceeds the stated amount, except for:

- contracts entered into by the Company based on framework agreements defining a cap on the Company's total liabilities, approved by resolutions of the Management Board,
- agreements entered into with companies of the Grupa LOTOS Group,
- purchase and sale of:
  - crude oil,
  - fuels and other petroleum products/intermediates/goods,
  - natural gas,
  - electricity,
  - biocomponents and fuel components,
  - maritime transport services,

as well as any related agreements on ancillary, support, transaction quality and quantity control, handling and storage services (primary and secondary logistics services),

- contracts for the sale of:
  - scrap and waste,
  - storage services (ticketing services),
- contracts in financial transactions:
  - foreign exchange contracts (spot, forward, swap),
  - commodity swap contracts,
  - CO_2 emission allowances futures,
  - and other transactions hedging against changes in petroleum product prices, foreign exchange rates, and interest rates,
  - negotiated deposits,

unless the applicable laws, provisions of the Company's Articles of Association or the Company's internal regulations adopted by the Management Board provide otherwise,

- the procedure to be launched and a contract to be signed for the purchase of goods or services with a value exceeding PLN 5,000,000 (VAT exclusive) from a specified contractor, in conformity with the procedure for the purchase of goods and services applied by the Company, except for contracts signed with other LOTOS Group companies, with the proviso that the total value of the obligation, if specified, will be used for determining the value of the contract, and in the case of indefinite-term contracts involving periodic performance – if the value of performance over four years exceeds the stated amount,
- amendments to an agreement, where the initial agreement required the Management Board's approval in the form of a resolution, except for indexation agreements based on previously agreed indexation rates,
- exercise by the Company of voting rights at general meetings of its subsidiaries with respect to:
  - share capital increase or reduction,
  - mergers with other companies or company transformations,
  - sale or lease of the company's business and/or its encumbrance with usufruct rights,
- formation of companies under commercial law and foreign companies,
- acquisition and disposal of shares and interests in companies,
- acquisition and disposal of shares, except where the shares are acquired or disposed of in public trading in securities, unless such acquisition or disposal results in gaining or losing the status of the parent,
- acquisition or disposal of property, perpetual usufruct rights or an interest in property,
- establishment and joining of partnerships, organisations or ventures which involve unlimited liability enforceable against the Company's assets,
- any matters which require the Supervisory Board's or General Meeting's resolution,
- matters falling outside the scope of day-to-day management of the business,
- matters which have been objected to by at least one of the Management Board members,
- any matters to be decided by way of a Management Board resolution at the request of the President or any other member of the Management Board.

Any matters not listed above are managed by the individual Management Board members in accordance with the provisions laid down below, or by persons to whom the Management Board or its members have entrusted such matters based on a power of attorney or through a designated scope of duties.

Subject to the sentence below, ordinary matters of the Company, not requiring a Management Board resolution, are carried out by the President independently and by individual Management Board members in line with the division of powers and responsibilities defined under the Organisational Rules of Grupa LOTOS S.A.

In special circumstances, including a given Management Board member's prolonged absence (due to sickness or other reasons), the President of the Management Board may delegate a matter to another Management Board member or may decide to deal with the matter personally, contrary to the division of powers and responsibilities. The President of the Management Board's decision in this respect must be made in writing and contain a statement of reasons.

Any disputes between members of the Management Board relating to the division of powers and responsibilities are resolved by the President of the Management Board.

Any matters not reserved for individual members of the Management Board in accordance with are conducted and supervised by the President of the Management Board or by a person designated by the President.

Rules of procedure for the Management Board, including procedures for convening meetings, passing and archiving resolutions, as well as the powers and duties of individual Board members, are set forth in → Rules of Procedure for the Management Board of Grupa LOTOS S.A.

Due to the COVID-19 pandemic, in 2021 meetings of the Management Board were held via means of remote communication, so as to comply with sanitary restrictions.

In 2021, the Management Board of Grupa LOTOS S.A held a total of 62 meetings and passed 530 resolutions, including 61 resolutions passed in accordance with Section 21.1 of the Rules of Procedure for the Management Board.

In order to implement individual remedies under the European Commission's decision of July 14th 2020 and further the process of acquisition of Grupa LOTOS S.A. by PKN ORLEN S.A., the Management Board of Grupa LOTOS S.A passed resolutions to:

- spin off an organised part of Grupa LOTOS S.A in the form of a group of tangible and intangible assets, as well as liabilities, used to carry out refining operations in Gdańsk, to transfer the organised part of business to LOTOS Asfalt Sp. z o.o. ("LOTOS Asfalt");
- dispose of the organised part of Grupa LOTOS S.A in the form of a group of tangible and intangible assets, as well as liabilities, used to carry out refining operations in Gdańsk, to transfer that organised part of business to LOTOS Asfalt Sp. z o.o. ("LOTOS Asfalt") as a non-cash contribution, and in exchange subscribe for all new shares in the increased share capital of LOTOS Asfalt;
- give consent to the acquisition by the Company of 19,999 shares in LOTOS Biopaliwa sp. z o.o. ("LOTOS Biopaliwa"), representing 99.995% of the share capital of LOTOS Biopaliwa;
- give consent to the disposal by the Company of 100% of shares in LOTOS Biopaliwa;
- give consent to the disposal by the Company of 30% of shares in LOTOS Asfalt;
- give consent to the disposal by the Company of 100% of shares in LOTOS Terminale S.A.("LOTOS Terminale");
- give consent to disposal by the Company of shares in LOTOS Paliwa Sp. z o.o. ("LOTOS Paliwa");
- give consent to the disposal by the Company of 100% of shares in the company which will acquire part of LOTOS Asfalt ("LOTOS Asfalt")'s assets as a result of demerger of LOTOS Asfalt;
- give consent to the disposal by the Company of shares in LOTOS - Air BP Polska sp. z o.o. ("LOTOS Air BP");
- give consent to the disposal by the Company of shares in RCEkoenergia Sp. z o.o. ("RCEkoenergia") to LOTOS Infrastruktura S.A. ("LOTOS Infrastruktura");
- give consent to the disposal by the Company of shares in LOTOS Infrastruktura LOTOS Infrastruktura to LOTOS Terminale S.A. ("LOTOS Terminale");
- give consent for the Company to enter into a shareholder agreement relating to LOTOS Asfalt;
- give consent for the Company to enter into a processing agreement and an off-take agreement;
- give consent for the Company to enter into a transitional processing agreement with LOTOS Asfalt;
- give consent for the Company to enter into a contract for sale of bitumens and heavy residue;

which have obtained further necessary approvals from the Company's corporate bodies.

Ordinary matters of the Company, not requiring a Management Board resolution, are carried out by the President independently and by individual Management Board members. The respective remits and the responsible organisational units correspond to the division of powers and responsibilities defined by the Company's Organisational Rules.

As at December 31st 2021, the Organisational Chart of Grupa LOTOS S.A. was as follows:

President of the Management Board, manages the Management and Finance Segment, comprising:

- Head of the Management Board Office
- Director of the Internal Audit Office
- Human Resources Director Division
- Head of Legal and Ownership Supervision Division
- Safety and Internal Control Director Division
- Marketing Director Division
- Communications Director Division
- Executive Director Finance Division.

In addition, all members of the Company's Management Board also act as Heads of the relevant Segments:

Head of the Corporate Segment, managing the following divisions:

- Corporate Affairs Director Division
- IT Management Director Division

Head of the Merger and Acquisition Segment, comprising:

- The Merger and Acquisition Office
- Investor Relations Office
- Strategy Office
- Security Operation Center Office
- Procurement and Contract Execution Office.

Head of the Investment and Innovation Segment, managing the following divisions:

- Chief Innovation Officer Division
- Upstream Director Division
- Head of Investment Projects Division.

Head of the Refining and Marketing Segment, managing the following divisions:

- Domestic Sales Director Division
- Export Sales Director Division
- Chief Operating Officer Division.

Please note that significant organizational changes of the Company took place as a result of the disposal of an organized part of Grupa LOTOS S.A.'s business.

11.7 Remuneration Policy

Following implementation by the Company in 2020 of the 'Remuneration Policy for Members of the Management Board and Supervisory Board of Grupa LOTOS S.A.', which sets out transparent rules of remuneration for members of the Company's governing bodies and contributes to the delivery of the Company's business strategy and pursuit of its long-term interests and stability, in 2021 the Remuneration Report for 2019 and 2020 was submitted to the General Meeting, which approved the Report.

The obligation to prepare the Remuneration Policy was set forth in Directive (EU) 2017/828 of the European Parliament and of the Council of May 17th 2017 amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement, implemented into Polish law by way of the *Act Amending the Act on Public Offering, Conditions Governing the Introduction of Financial Instruments to Organised Trading, Public Companies and Certain Other Acts of October 16th 2019.*

Under the Directive, the Supervisory Board must further prepare a Report on delivery of the Remuneration Policy presenting a comprehensive overview of remuneration, including all benefits, regardless of their form, received by or due to individual members of the Management Board and the Supervisory Board in the previous financial year in accordance with the Remuneration Policy.

Prior to the effective date of the Remuneration Policy, the remuneration paid to members of the Company's Management Board and Supervisory Board was based on the provisions of *the Act* and the provisions of the *Extraordinary General Meeting's Resolution on the remuneration scheme* adopted thereunder.

The aggregate remuneration of a member of the Company's Management Board comprises a fixed component in the form of the monthly base pay and a variable component representing additional remuneration for the Company's financial year.

- Fixed remuneration is an amount determined by the Company's Supervisory Board in accordance with *the Act* and *the Resolution*, within the range from 7 to 15 times the reference amount;
- Variable remuneration is contingent on the delivery of the Management Objectives defined by the General Meeting and the Supervisory Board.

Members of the Company's Supervisory Board are entitled to monthly fixed remuneration calculated as the product of the reference amount referred to in *the Act* and a multiplier of:

- 1.7 – for the Chair of the Supervisory Board;
- 1.5 – for other members of the Supervisory Board.

In accordance with *the Act*, the amount of fixed remuneration was set based on the scale of the Company's business operations, in particular the value of its assets, revenue and workforce.

The *Policy* has been prepared by the Company's Management Board and submitted to the Supervisory Board for an opinion, to be subsequently presented to the General Meeting for endorsement.

11.8 Audit firm selection policy

On October 10th, 2017, the Supervisory Board of Grupa LOTOS S.A. approved the Policy for the selection of an audit firm to audit financial statements of Grupa LOTOS S.A. and the LOTOS Group companies.

Key provisions of the Policy:

- pursuant to the Articles of Association of Grupa LOTOS S.A., the Supervisory Board selects an audit firm or extends the agreement with the existing audit firm;
- the selection or extension is made on the basis of the Audit Committee's recommendation. The Audit Committee's recommendation is based on an assessment of the bids submitted by audit firms in the selection procedure, or based on the grounds for extending the agreement with the audit firm;
- the selection of an audit firm or extension of the agreement with the existing audit firm is made in compliance with the laws in force at the time of selection or extension;
- in selecting an audit firm, the Company applies the supervisory body's guidelines concerning the rules and procedures for selection of qualified auditors to audit financial statements of companies in which the State Treasury holds equity interests;
- audit firms with small market shares may also submit their bids in the selection procedure;
- the selection procedure should not exclude an audit firm which has obtained less than 15% of its total audit remuneration from public-interest entities in a given EU country in the preceding calendar year, and which is included in the list of audit firms published by the Polish Audit Oversight Commission on its website;
- it is prohibited to introduce any contractual clauses that would require the Supervisory Board to select an audit firm from among a specific category or list of audit firms. Such clauses are invalid by law;
- in order to ensure the highest consistency, and thus reliability of the consolidated financial statements, while taking into account the optimisation of the Group's audit costs, it is deemed reasonable and advisable that the financial statements of the Group's key companies be audited by the audit firm/a member of the network of the audit firm selected to audit the financial statements of Grupa LOTOS S.A. (the leading audit firm);
- the Supervisory Board's resolution to appoint an audit firm or extend an agreement with the existing audit firm is a recommendation for the supervisory boards of companies covered by the audit firm selection procedure;
- while selecting an audit firm to audit their own financial statements, the other LOTOS Group companies apply the rules set out in the Policy;
- The Supervisory Board – while making the final selection, and the Audit Committee – while preparing its recommendation, act in line with the following guidelines concerning the audit firm:
  - compliance with formal requirements;
  - the auditor's independence and impartiality, including in the context of agreements already signed by the audit firm/member of the audit firm's network with the LOTOS Group companies;
  - position in the audit services market;
  - the price for the audit taking into consideration the workload (quoted as an aggregate amount and separately for each Group company covered by the audit firm selection procedure);
  - knowledge of the industry and the Group companies;
  - experience in the audit of listed companies applying IAS/IFRS;
  - audit schedule;
  - composition of the team appointed to audit the parent and the Group companies covered by the audit firm selection procedure; i) draft audit engagement agreement;
- tender documentation contains transparent and non-discriminatory selection criteria to be used in the evaluation of bids;
- The Supervisory Board is guided by the principle of audit firm and lead auditor rotation, as described in the procedure for selecting an audit firm to audit financial statements;
- agreements with audit firms are made for at least two and not more than five years.

11.9 Diversity policy

Diversity, cooperation and openness are the values which form an integral part of Grupa LOTOS S.A.'s business activities, as well as the hiring and promotion policy.

As in previous years, in 2021 the Company pursued the principles of diversity management and a policy of equal treatment with due respect for a diversified, multi-cultural society and with particular focus on equal treatment irrespective of gender, age, disability, health, race, nationality, ethnic origin, religion, religious denomination, irreligiousness, political beliefs, trade union membership, gender identity, family status, lifestyle etc.

In 2021, the diversity policy pursued by Grupa LOTOS helped better leverage the potential of the Group workforce, their diverse skills, experience and talents in the atmosphere of mutual respect and cooperation. At the LOTOS Group we appreciate experience that comes with age, which is why employees aged 50 or more provide support to new hires as part of induction processes (shadowing and mentoring meetings), such relationships bringing numerous advantages and benefits to both parties.

The Company implemented the principles of equal treatment and diversity management at the workplace, starting from recruitment (as a member of the Coalition for Friendly Recruitment), through access to training and promotion, remuneration, work-life balance (as confirmed by the Top-Quality HR certificate issued by the Polish Human Resources Management Association (PSZK) and Biznes Magazyn's Economy Zones - Responsible Employer - HR Leader 2019 certificate), protection against workplace bullying and discrimination (during the induction training for newly hired employees and generally available e-learning training).

The Company's approach to diversity is presented in the Code of Ethics, compliance with which was declared by all new hires. Aspects related to the Ethical Conduct Programme were also covered by the annual employee assessment.

The initiatives implementing the Diversity Policy included also initiatives under the LOTOS Group Employee Volunteering Programme.

In 2009, Grupa LOTOS signed up to the 10 UN Global Compact Principles committing, inter alia, to the principles of diversity.

12 Risks in the LOTOS Group's operations

Risks inherent in the LOTOS Group's operations include risks specific to the Oil & Gas industry, such as macroeconomic risks, market risk, exploration risk, crude oil production and processing risks, related to process safety, human safety and the environment, as well as risks related to development projects and initiatives pursued by the Group. The organisation understands risk as a potential threat that needs to be managed in line with the adopted risk appetite policy, and as an opportunity that can be exploited to its advantage.

One of the key challenges affecting the LOTOS Group's business (including the strategic projects) in 2021 was the market situation caused by the COVID-19 pandemic. The procedures and preventive measures in place helped maintain operational efficiency across the LOTOS Group, from the upstream segment to downstream refining and marketing.

It is anticipated that in the near term the pandemic will continue to have implications for the Group's day-to-day operations and macroeconomic trends that affect its business and performance.

The other key risk factor in the current period that will have bearing on the LOTOS Group's further growth is the global trend towards a low- and zero-emission economy. Climate risks, as a source of both threats and opportunities, are increasingly better identified and managed by the LOTOS Group. Aware of their magnitude, the organisation puts them high on the list of priorities in setting new business goals and development plans.

Market risk related to the prices of crude oil, natural gas and petroleum products is another key risk with material bearing on the Group's financial performance. These prices depend on international market quotations, which are beyond the Company's control. Although this is a natural risk for all industry operators, the LOTOS Group has put in place various measures to mitigate its adverse impact, but also capture the resulting opportunities.

A significant risk factor for LOTOS Group, which amplifies the risks described above, is the dynamically changing geopolitical situation, in particular resulting from Russia's attack on Ukraine. It affects not only direct activities and cooperation with partners in Europe, but also destabilises the markets and macroeconomic situation around the world, which has a significant impact on results of the LOTOS Group.

Any identified risks at the LOTOS Group are managed via the Enterprise Risk Management (ERM) system, which has been continually refined. As part of the system:

- risks are identified and evaluated, with performance figures and possible deviations planned and forecast in the context of a volatile and uncertain environment,
- business decisions are made on an informed basis, taking into account the risks involved,
- and the Group's risk profile is actively managed by mitigating risks to the achievement of its objectives and capturing opportunities.

All the LOTOS Group companies have in place an Enterprise Risk Management Policy accompanied by a detailed procedure.

12.1 Risk categories at the LOTOS Group

The LOTOS Group has classified risks into the following categories:

Table 39. **Risk categories at the LOTOS Group**

Main category	Subcategories	Description
Strategic risks	Megatrends Climate Regulatory Strategic projects Geopolitical Technology Competence	Strategic risk is related to the LOTOS Group's strategic development directions in the context of the changing business environment. It can be linked to changing market trends (e.g., megatrend risk, technology risk) or geopolitical situations. Strategic risk also includes climate risks identified as separate risks caused by climate changes. For the LOTOS Group, these risks are mostly of a transformational nature and result from planned new or changing legal regulations (regulatory risks). Strategic risks also include potential inability to fully achieve the Group's strategic objectives due to delayed delivery of, or changes in the scope of work under, strategic projects (risk in strategic projects).

		Another risk identified within this category is associated with geopolitical factors affecting the organisation's activities (geopolitical risk). Another strategic risk that affects the business and development of the LOTOS Group is the risk of limited access to competent personnel (competence risk).
Operational risks	HSE Exploration Production Refining Sales Services Logistics Procurement Financial operations IT Force majeure (e.g. natural disasters) Security	Operational risks are identified as part of ongoing processes carried out at the LOTOS Group, as factors with a potential impact on the achievement of the Group's operational objectives. Significant operational risks include categories related to safety and security of people, the environment and processes in general, as well as the availability and security of IT systems, which could affect the continuity of business, production/refining operations and customer service. Operational risks relate both to processes carried out by the LOTOS Group's own staff, and by suppliers and subcontractors along the length of the supply chain.
Financial risks	Market Liquidity and financing Credit	Under financial risks, the LOTOS Group identifies market risk associated with the prices of petroleum commodities and products, prices of CO_2 emission allowances, currency exchange rates and interest rates. In addition, financial risks include the credit risk of trade partners and counterparties in financial contracts, liquidity risk, risk of constraints or changes in the terms of credit provision, and debt service risk.
Reputation and compliance risks	Legal Employees Investors Customers Social and environmental	Reputation risk relates to the perception of the LOTOS Group by its key stakeholders – customers, investors, employees and local communities. Compliance risk, on the other hand, involves risks of non-compliance with existing legal requirements (legal risks).

Source: the Company.

Below is a description of selected key risk categories, which, given their current levels, are included in the Group's risk map. A detailed list of these risk categories, along with their current assessment and mitigation methods, is shown in Table 41 on page 146 of this report.

12.1.1 Strategic risks

Risk from megatrends

Development of the LOTOS Group and its financial performance are correlated with the overall economic climate in Poland and globally.

The pandemic crisis has challenged the global economy for nearly two years. The year 2021 was a time of economic recovery and increased demand for energy commodities, which consequently led to an increase in the prices of these commodities. There was also an increase in oil production by the OPEC+ countries. The measures taken were to make the price of the commodity reasonable for both producers and consumers. However, the rate of growth in fuel demand was greater than the increase in oil availability. As a result, there was a decline in global oil stock levels, primarily in the OECD member countries, below the five-year average. The activities of OPEC+ countries, coupled with the economic recovery, affected fuel prices at service stations worldwide, which in turn caused some countries, including Poland, to take steps designed to lower the prices in late 2021. Crude oil production in the US (depressed as a result of Hurricane Ida) and resumption of discussions with Iran on its nuclear programme were also affecting the crude oil prices. More waves of inflation in the energy market can be expected in the coming years, which will be felt by both households and businesses.

In the context of the energy situation in Europe in 2021, noteworthy are natural gas prices, which in recent years have risen to unprecedented levels. The prices were affected by a number of factors, such as the cold winter and the resulting drop in the filling of storage facilities in Europe, repair work on fields in Norway and the UK, a decline in production of the commodity in the Netherlands, economic recovery and increased demand for electricity. Gas prices on the European market were also affected by Gazprom's conduct, which cut gas exports to Europe in 2021 while almost halting filling of its storage facilities on the continent.

The unstable geopolitical situation and hostilities in Ukraine will have a significant impact on the gas, oil and petroleum products market, which will include non-standard volatility of prices. The impact will depend on how the armed conflict develops further and on the sanctions applied.

The challenge of the past year and of the coming years facing the European economy, including the oil and gas industry, is to minimize its impact on climate change. The new legislative package proposed in 2021 (Fit for 55) to reduce environmentally harmful emissions is very likely to negatively impact business costs.

These changes may also have an indirect effect through changes in consumer expectations and behaviour, as well as changes in the operating models of the various transport sub-sectors (decarbonisation of public transport and car sharing).

Climate risk

In recent years, wide-ranging efforts have been afoot (both globally and locally) to tackle climate change. The European Green Deal is the new economic development strategy for the European Union. The transition of the EU economy towards climate neutrality is a means of achieving the objective of changing the EU's status from the world's third largest greenhouse gas emitter into the first climate neutral region. The transition is expected to be completed within three decades. The Fit for 55 legislative proposal presented in July 2021, which includes more than a dozen legislative acts, is to provide the basis for achieving the EU's objective of reducing greenhouse gas emissions by 55% by 2030 (compared to 1990). The final regulations that will result from Fit for 55, will have a significant impact on the operations and development of the refining industry. Through changes in the taxation regime, higher prices of CO_2 emission allowances, higher costs to finance certain projects and growing requirements regarding the share of renewable energy in transport, these initiatives will affect the LOTOS Group's operating expenses and performance. For example, one of the operating costs, i.e. the price paid for CO_2 emission allowances, averaged in 2020 at around EUR 25 per tonne, but in December 2021 it reached almost EUR 90 per tonne.

However, the LOTOS Group sees the climate change not only as a threat but also as an opportunity and seeks to capitalise on it by, among other things, implementing innovative projects, e.g. in the area of alternative fuel production.

For detailed information on the identified climate risks and assessment of their potential impact on the LOTOS Group's business, see Table 40.

Due to their long-term nature, climate risks (threats and opportunities) were analysed in three time horizons (short-term – annual, medium-term – 2025 outlook and long-term – 2030 outlook), and evaluated in terms of their impact on financial performance, human safety, environment and reputation (in the five-step scale: negligible, low, moderate, high, very high).

Table 40. Climate change risks

Risk factors	Threats	Opportunities	Risk impact level		
			Short-term	Medium-term	Long-term
National Indicative Target defines a minimum share of renewable energy in transport and implements the amended RED Directive (RED II) by amending the Act on Biocomponents and Liquid Biofuels					
RED II provides for an increase in the minimum share of renewable energy in transport to 14% (compared with the current 10%) and a minimum share of advanced biofuels of 3.5% by 2030.	- Increase in operating expenses due to higher requirements regarding the share of renewable energy in transport (e.g. necessity to use more expensive, advanced biofuels; potential penalties)	+ Entry into the new market of advanced biofuels, for which demand in the EU should grow.	HIGH	N/A from 2025 on, the RED II objectives should be replaced by RED III;	
Revision of the Directive on the promotion of the use of energy from renewable sources (RED III)					
Increased mandatory share of renewable energy in transport, which will increase the use of low-emission fuels, including advanced biofuels, synthetic liquid and gaseous fuels, and hydrogen.	- Increase in costs related to the purchase and production of biofuels and possible penalties for failure to meet the targets regarding the share of renewable energy in transport	+ Possibility of entering new markets for advanced biofuels or hydrogen + Possibility of obtaining dedicated support for low-emission projects and possibility of new investments in the sector whose products may be in greater demand across the European Union.	NEGLIGIBLE	VERY HIGH	VERY HIGH
Revision of the Energy Taxation Directive (ETD)					
The proposed changes in the fuel and energy taxation system will increase the minimum tax thresholds and diversify them so that low-emission alternative fuels can be as cheap as possible compared with petroleum-based counterparts.	- Possible gradual decline in demand for conventional fuels - Increased tax burden on conventional fuels, disruption of the existing relations between taxes on diesel oil, gasoline and LPG	+ Growing interest in low-emission alternatives, such as electricity, hydrogen or fuels with a higher content of advanced biocomponents + Potentially higher profitability of projects connected with the production and use of alternative fuels in transport, given their preferential tax treatment.	NEGLIGIBLE	HIGH	VERY HIGH
Introduction of EU regulations on sustainable aviation fuels (ReFuelEU Aviation initiative)					
The initiative concerns the development of sustainable (low-emission) aviation fuels (SAF); various options are considered, including commitment for the refining industry to produce a specified volume of low-emission aviation fuels.	- High costs of the mandatory production of SAF (if this option is ultimately included in the regulations), due, among other things, to limited availability of the raw materials and costly certification procedures for such fuels; it is estimated that the cost of introducing SAF is several times higher than for conventional fuels	+ Entry into the prospective and probably high-margin nascent market for sustainable aviation fuels.	NEGLIGIBLE	HIGH	VERY HIGH

Risk factors	Threats	Opportunities	Risk impact level		
			Short-term	Medium-term	Long-term
Revision of the Alternative Fuels Infrastructure Directive					
The initiative focuses on establishing mandatory targets for the development of alternative fuels infrastructure in the EU, with the objective of increasing the number of electric vehicle charging stations, hydrogen, CNG and LNG refuelling stations, as well as LNG refuelling stations at ports for LNG-fuelled vessels.	- Growing number of electric vehicles may, as a result, contribute to a decline in demand for conventional fuels, especially gasoline - Need to incur new infrastructure construction costs	+ Expansion of the electric mobility segment gives opportunities to offer charging services and expand the non-fuel business (longer charging times for electric vehicles relative to combustion ones means more time spent by customers in a station's retail space) + Development of the alternative fuels market and generation of revenue from sale of such fuels (electricity, hydrogen, CNG/LNG).	NEGLIGIBLE	HIGH	HIGH
Revision of the EU ETS					
The proposed changes to the ETS are intended to accelerate growth in the prices of CO_2 emission allowances and thus to stimulate investments in emission free technologies.	- Increase in operating expenses of Grupa LOTOS S.A. due to higher prices of emission allowances and lower number of free allowances	+ Increased profitability of innovative decarbonisation projects (e.g. the Green H2 project)	MODERATE	HIGH	HIGH
EU hydrogen strategy and legislation promoting the use of hydrogen					
The strategy is designed to identify barriers to increased production and use of clean hydrogen, to define measures to remove those barriers and promote the production and use of clean hydrogen on a large scale, as well as development of the hydrogen market and the necessary cost-effective infrastructure. Proposals of legal acts that would comprehensively regulate the production and use of hydrogen in the economy are expected in 2021.	- Establishment of too stringent criteria for the recognition of energy used in hydrogen production as renewable - Introduction of binding hydrogen share targets, without adequate demand-side tools	+ Possibility of entry into the promising green hydrogen market + Possibility of achieving the (growing) targets imposed on Grupa LOTOS S.A. with regard to the share of renewable energy in transport + Access to preferential financing models for hydrogen projects.	NEGLIGIBLE	MODERATE	HIGH

Risk factors	Threats	Opportunities	Risk impact level		
			Short-term	Medium-term	Long-term
Introduction of a legislative package on sustainable financing (EU taxonomy)					
The legislative package introduces a general framework to support the gradual development of a classification system for environmentally sustainable economic activities, which will be used to reorient private sector capital flows and EU programmes towards investments classified as climatically sustainable.	- Increase in finance costs and possible impediments to the financing of projects not classified as sustainable ('green') - Increase in the cost of insurance covering economic activities not considered environmentally sustainable in the taxonomy	+ Preferential funding for projects included in the taxonomy, i.e. designed to reduce emissions, e.g. production of green hydrogen, advanced alternative fuels, or generation of energy from renewable sources.	MODERATE	HIGH	VERY HIGH
Fuel emission standards					
A package of legal acts setting exhaust emission standards for light passenger cars and heavy goods vehicles, as well as emission targets for new vehicles. The amendment provides for an obligation to reduce emissions from new vehicles by 100% by 2035, which effectively means a ban on the sale of combustion-engine vehicles in the EU.	- indirect impact on LOTOS Group through a decrease in demand for refinery products due to the growing number of zero-emission vehicles at the expense of those running on traditional fuels	+ increased profitability and decreased risk of transport electrification and hydrogenation projects + competitive advantage and new source of revenue, provided that an appropriate EV charging station and hydrogen refuelling networks are in place	NEGLIGIBLE	LOW	MODERATE

Source: the Company.

Regulatory risk

Regulatory risk at the national and European level has strong relevance to the LOTOS Group's operations. The most important regulatory risks currently faced by the organisation are related to climate change and are described in Table 40. The Company monitors the legal environment and communicates its position as part of legislative processes, which is always formulated so as to make the best use of opportunities and reduce the potential adverse impact of new regulations. The Company intends to remain in compliance with all the regulatory requirements.

Geopolitical risk

Russia's attack on Ukraine disrupted the geopolitical status quo in Europe in the first quarter of 2022 and has become a key factor examined in the context of risk management at the LOTOS Group. Grupa LOTOS S.A. has established Crisis Management Team, which analyses the situation on an ongoing basis. The sanctions imposed on Russia and Belarus are subject of special focus by the Company, both in terms of their accurate interpretation and application, but also in terms of their possible effects on the organisation. Various scenarios are developed and solutions are implemented to mitigate key threats that could disrupt the Group's business and affect its financial results.

The current geopolitical situation is an additional risk factor amplifying threats in various areas of the business, including crude oil supply, liquidity and financing, critical infrastructure security and cyber security, or execution of projects.

Risk in strategic projects

One of the key risk categories relevant to the LOTOS Group's strategy is the risk related to its ongoing and planned strategic projects. In 2021, a number of exploration and production projects, including development of the B8 field and development of the YME field in the Norwegian Continental Shelf, were delayed mainly as a result of the COVID-19 pandemic. The delays were due, among other things, to the subcontractors' inability to perform the full scope of oilfield services and shipyard work. Despite the emerging challenges, both projects reached their key milestones. On October

1st 2021, gas transmission was launched from the Baltic B8 field to Władysławowo. On October 25th 2021, first oil was produced from the Yme field.

Other challenges for the coming years include the implementation of other projects that will allow further development of the LOTOS Group. They include the construction of an oil hydrocracker (HBO) to produce modern base oils (under execution) as well as projects that are currently at the planning stage, i.e., construction of a CCGT plant as well as the Green H2 project to create a large-scale green hydrogen production facility consisting of electrolysers, hydrogen storage facilities and fuel cells or, alternatively, hydrogen turbines.

By regularly monitoring the progress of, and risks related to, its strategic projects, the LOTOS Group is able to anticipate the situation and thus to implement measures designed to control risks or leverage opportunities. As part of project management, the Group applies portfolio management practices, taking into consideration the organisation's internal condition and external market environment, and directing capital flows to various projects at different stages of the delivery cycle.

Competence risk

Competence risk is related to the difficulty in attracting or retaining competent and experienced staff, necessary for the Group to attain its strategic objectives. Recent years have shown that the labour market in Poland is transforming. The industrial sector and niche industries often face a shortage of qualified specialist workforce. This is an important issue, requiring employers to be flexible and make active efforts in recruiting and retaining staff with appropriate qualifications.

12.1.2 Financial risks

For detailed information on financial risk and policies to manage the risk, see ... to the consolidated financial statements for 2021. A general overview of individual financial risks is presented below.

Market risk: prices of petroleum commodities and products

Grupa LOTOS S.A.'s margins on sale of petroleum products are largely dependent on a spread between its selling prices and the prices of crude oil. The prices of refining products, crude oil and natural gas may fluctuate widely driven by external events, such as changes in the supply and demand forces globally or regionally, dynamic geopolitical factors, in particular the war in Ukraine, or shifts in market preferences.

Grupa LOTOS S.A. identifies the following risk factors related to the prices of petroleum commodities and products:

- volatility of the refining margin, measured as the difference between liquid indices of a reference petroleum product basket (e.g. aviation fuel, gasoline, diesel oil, fuel oil) and a liquid index of reference commodity (e.g. Urals crude) and natural gas,
- volatility of prices with respect to the commodity and product inventory volumes deviating from the required levels of emergency and operational stocks,
- volatility of differentials between the reference indices and indices used in commercial contracts (e.g. Urals-Brent differential, i.e. the difference between different types of crude oil),
- use of non-standard pricing formulae in trade contracts.

Market risk: currency exchange rates

In its operations the LOTOS Group is exposed to currency risks related to:

- trading in commodities, petroleum products and other commodities,
- investment cash flows,
- cash flows from financing activities, including deposits and borrowings,
- measurement of derivatives indexed to or denominated in a currency other than the functional currency (PLN),
- costs exposed to the currency risk, which Grupa LOTOS S.A. is obliged to cover under the processing contract with LOTOS Asfalt Sp. z o.o.

The LOTOS Group has a structurally long position in USD (which means it benefits from a rise in the exchange rate of the US dollar against the Polish złoty) as its cash inflows dependent on the USD exchange rate (mainly revenue from sale of petroleum products) are higher than the corresponding cash outflows (e.g. outflows on purchase of crude oil). On the other hand, some of the LOTOS Group's debt is denominated in foreign currencies, primarily the US dollar, as a result of which an appreciation of the US currency against the Polish złoty increases the cost of servicing these liabilities, as well as the value of the liabilities disclosed in the financial statements as at the measurement date.

Market risk: interest rates

Grupa LOTOS S.A is exposed to the risk of changes in cash flows caused by interest rate movements, as interest income and expense related to certain assets and liabilities accrues based on floating interest rates. This is driven primarily by the expected facility repayment schedules, as well as the amount of interest computed by reference to the floating LIBOR USD rate.

As part of the ongoing IBOR benchmark reform, some of the published interest rates (e.g. WIBOR, EURIBOR) have been reformed, a new date has been set for discontinuation of the main LIBOR USD benchmarks (June 30th 2023), and some benchmarks ceased to be provided as of the end of 2021. GRUPA LOTOS S.A. actively monitored the progress of the reform to the extent applicable to it and took all decisions and actions necessary to implement the reform-related changes.

In 2021, the Company and its financial partners executed relevant amendments to existing agreements where such amendments were required as a result of the reform and discontinuation of certain benchmarks.

Market risk: prices of carbon dioxide (CO_2) emission allowances

Following the spin-off of an organised part of business from Grupa LOTOS S.A. on November 2nd 2021 and the transfer thereof to LOTOS Asfalt Sp. z o.o., refining units were also transferred. As of that moment, by operation of law the obligation to redeem CO_2 emission allowances rests with LOTOS Asfalt Sp. z o.o. However, it does not mean that the risk of prices of CO_2 emission allowances was eliminated from GL S.A., as under the concluded processing contract the Company is obliged to cover the cost of emission allowances deficit for LOTOS Asfalt Sp. z o.o. and thus the risk of prices of CO_2 emission allowances was transferred to Grupa LOTOS S.A. Therefore, the Company continues to manage the risk based on the Policy for managing the risk of prices of CO_2 emission allowances.

The current trading period (Phase 4) covers the years 2021–2025. At present, Grupa LOTOS S.A. holds surplus allowances, purchased in view of the prevailing market situation and the expected strategic nature of a deficit of allowances in 2026-2030. The fluctuation of the risk factor is also subject to special analysis in the context of the highly dynamic geopolitical situation.

Financial risk: liquidity and financing

Liquidity risk is associated with ensuring that all liabilities are settled in a timely manner. The risk can materialise because of a mismatch between streams of receivables and payables or inadequate sources of funding. Liquidity is managed across the LOTOS Group based on current liquidity forecasts.

Some investment projects undertaken by Grupa LOTOS S.A. and its subsidiaries, as well as their day-to-day operations, are partly financed with borrowed funds. Therefore, there is a risk that LOTOS Group companies may face difficulties in raising external finance or obtaining acceptable terms of such finance for their further development. This may be caused by instability on financial and capital markets in Poland or abroad, more restrictive policies applied by financing institutions with respect to new agreements or interpretation and performance of existing agreements, any adverse economic developments in Poland or abroad, and non-performance or improper performance by LOTOS Group companies of their obligations under financing agreements. There is also a noticeable trend of limiting access to external financing for conventional fuel projects.

The ability to raise additional debt is also constrained by the LOTOS Group companies' obligations to service their existing debt. Currently, their economic performance, liquidity position and debt levels are satisfactory.

Financial risk: credit

In the course of its trading operations, the LOTOS Group sells products and services to other business entities on a deferred payment basis, which may give rise to the risk of default on the part of its trading partners (credit risk of trade partners).

In entering into financial contracts with financial institutions, due consideration is given to the risk that the counterparty may default on amounts owed to Grupa LOTOS S.A. on settlement of a given transaction. The credit exposure also includes bank deposits and cash held in bank accounts (credit risk of financial transaction counterparties), as well as guarantees provided for Grupa LOTOS S.A.

12.1.3 Operational risks

Operational risks are identified as part of ongoing processes carried out at the LOTOS Group, as factors with a potential impact on the achievement of the Group's operational objectives. Operational risk factors are identified in the LOTOS Group's internal processes and in its environment, including the supply chain.

Exploration risk

Exploration projects undertaken by the LOTOS Group involve both the risk of drilling a well without a hydrocarbon flow, as well as the risk of inaccurate estimation of hydrocarbon resources and reserves discovered by drilling. It is possible that the presence of resources inferred from geological and seismic data is not confirmed after a well is drilled, and that the estimated resources are smaller than originally expected. There is also a risk that further drilling to appraise a deposit will result in a downward revision of resource estimates due to unfavourable changes in the reservoir properties. For this reason, analyses and decisions in exploration activities involve multiple stages, with different risk mitigation methods used along the way.

Production risk

Hydrocarbon production processes are often carried out in challenging conditions, mainly offshore. High pressure and increased corrosive effects compound the risk of failures of production equipment, such as downhole pumps, extraction equipment and transmission facilities, which in turn may negatively affect production volumes and financial performance.

Failure to achieve production targets may also result from declining well capacity rates (changes in reservoir pressure) and reservoir properties differing from those documented at the field development stage.

A production process involves the risk of an oil spill, fire or blowout, which may result in environmental contamination, risks to the health and lives of staff, reduction or discontinuation of production, as well as the need to incur significant financial expenditure to remove the damage or pay the resulting fines. The risk is attributable to the quality of operation of the exploration and production infrastructure, application of inadequate technical and organisational solutions, as well as the level of awareness and skills possessed by staff and subcontractors.

The COVID-19 pandemic did not cause in 2021 any interruption in or limitation of oil or gas production at LOTOS Petrobaltic S.A. or the LOTOS Upstream Group, thanks mainly to the planned procedures to be followed in the event of detection of COVID-19 infections, especially on the drilling platforms.

Refining risk

One of the two key pillars of the LOTOS Group's operations is the processing of crude oil and refining of petroleum products. Its essential element is to ensure the safety of people, the environment, processes and infrastructure. A potential industrial accident taking place at the refinery could disrupt refining production and, in extreme cases, cause a fire or release of hazardous substances. Such incidents could potentially pose a risk to people. Any hydrocarbon leaks could contaminate land and surface water or, in the case of emergencies resulting in major emissions into the atmosphere, cause air pollution. At the LOTOS Group, all risks to process, human and environment safety are managed with the utmost care and measures are taken to minimise such risks.

The COVID-19 pandemic was one of the key risks in 2021. Grupa LOTOS S.A. identified COVID-19 infections among its employees, but proper monitoring and effective response allowed it to continuously sustain safe refining operations. Effective organisational solutions have been developed in recent months to prevent the risk from materialising, although its materialisation cannot be ruled out if the epidemic continues to spread at a significant rate.

Having no upstream production assets that would fully cover its demand for crude oil, the LOTOS Group has also identified the risk of disruption of the continuity of crude oil supplies. The continuity of crude oil supplies to the Group may be affected by the following main factors:

- technical failures, including failures of the pipeline system used to supply crude oil, terrorist attacks, acts of sabotage, riots, revolutions, war, natural disasters, adverse weather conditions, or other events of force majeure,
- uneven deliveries of crude oil resulting in a temporary decrease in work-in-process stocks, and consequently in the refinery's lower throughput volumes and failure to meet the oil quality requirements.
-

Grupa LOTOS S.A. follows the adopted *Crude Oil Supply Policy* to ensure operational continuity and security of crude oil supplies through, among other measures, diversification of supply directions, crude oil grades and suppliers. The Company maintains the availability of crude oil supplies by pipeline, rail and sea.

Risk related to purchase of products and services

The LOTOS Group identifies a risk from its relations with suppliers and subcontractors along the entire length of the supply chain. The market of suppliers of goods and services meeting the requisite quality standards expected by the organisation has been shrinking visibly in recent years. This aspect is particularly relevant to the plant maintenance and overhaul policy, but also to the smooth execution of major development projects.

Effective management of this risk is particularly crucial in the context of maintenance shutdowns at the refinery. The preparations for the shutdown, which took place in spring 2021, were made in good time and several independent contractors were selected to perform the work. This approach enabled the contractors to properly prepare for the work, which can be carried out efficiently in line with the timetable on the back of well planned cooperation. A similar approach will be applied during the upcoming shutdown in 2022.

HSE risk[22]

Safety risk is one of the key risks identified at the LOTOS Group. Because of the nature of its industry, accidents may occur at every stage of the Group's production processes and along its logistics chain. They may happen during oil production and refining processes, during transport of products by road or by rail, and while rig crews are being carried by helicopters.

These risk factors may stem from human errors or non-compliance with the applicable requirements and procedures, plant failures, releases of harmful substances, as well as natural disasters or other incidents likely to endanger human health and lives.

In order to minimise HSE risks, the LOTOS Group undertakes a number of concurrent initiatives to improve the functioning of the personal and process safety areas. One of them is to build a safety culture based on the involvement of employees and subcontractors. At the same time, steps are taken to ensure operational process stability by maintaining the highest standards of safety. Having implemented and refined a Process Safety Management (PSM) system, in which processes are analysed and monitored on a comprehensive basis, Grupa LOTOS S.A. is able to continuously raise the level of human safety, as well as the safety of the refinery's natural and social environments.

OHS risks are under special supervision during maintenance shutdowns at the refinery. The nature of the maintenance work and the fact that during such work as many as 2,000 people from different companies and different regions may be working on the site at that time generates additional risks related to work safety, as well as the potential spread of COVID-19. Based on the experience gathered by Grupa LOTOS S.A. as part of its epidemic risk management at a large production plant, additional organisational solutions and procedures were put in place to mitigate such risks. This approach ensured that no significant incidents were recorded during the first of two scheduled maintenance shutdowns in 2021/2022. A similar approach will be applied during the 2022 shutdown.

Security risk

In addition to physical security of the organisation and its business partners, Grupa LOTOS S.A. is highly aware – given the ever increasing reliance on IT resources and process automation – of the risks associated with cybercrime. As a business technologically opens up to the world, new opportunities arise to access its strictly protected valuable business assets or resources stored in telephone or computer memories. Given the risk of interference that may lead to major accidents or damage, key information, operational control systems (OT) and production processes are strategic surveillance and security areas.

In connection with the ongoing military hostilities in Ukraine, the threat of cybercrime has increased virtually worldwide, and therefore the Company monitors and introduces further measures to mitigate this risk on an ongoing basis. An additional risk factor is the large number of people from outside the LOTOS Group who will be temporarily present at the refinery site during the maintenance shutdown.

12.1.4 Reputation and compliance risk

Reputation risk relates to the perception of the LOTOS Group by its key stakeholders – customers, investors, employees and local communities. The development of social media has brought with it increasingly more opportunities but also risks, which, given the speed of reaction and very wide audiences, call for particular attention and caution.

Should the reputation risk materialise, it could undermine the public's approval for the continuation and development of the Group's business, thereby affecting its long-term financial performance.

Legal risk

Legal risk relates to non-compliance or partial compliance with existing laws (by contrast, the regulatory risk discussed above applies to possible future regulations). The legal requirements impose a number of obligations on the LOTOS Group, which have to be complied with by an operator engaged in licensed/regulated activities. In addition, given the scale of the Group's operations, it is under particular scrutiny by the supervision authorities, social stakeholders and supply chain participants.

The application of legal provisions in practice indicates that they are often quite imprecise, and different interpretive approaches may yield varying interpretations. The LOTOS Group companies take all due care to minimise this risk.

Personnel risk

Existing and future employees are the LOTOS Group's key stakeholders. How they perceive and understand the LOTOS Group's activities is vital for the effectiveness of its operations and implemented changes. However, if its internal

[22]HSE – Health, Safety and Environment

communication is deficient, there is a risk that any changes planned will ultimately prompt employee protests or industrial action.

In 2021, extensive dialogue was held with employee representatives as part of the ongoing process of merging with PKN Orlen. Through regular meetings and open communication, arrangements have been developed to allow the planned changes to be approved and new challenges to be met. The social dialogue and relevant policies will continue. All activities related to the ongoing process, in particular those relating to employee matters, are communicated in a transparent manner, respecting the rights and interests of each party.

Social and environmental risks

Processes carried out by the LOTOS Group, such as exploration for, development and production of hydrocarbons, refining production, product transport and logistics, may have an impact on the environment. This impact may be significant especially in the event of industrial failures and release of hazardous substances into the environment. In particular, oil spills from existing platforms or during transport of crude oil or petroleum products may have massive consequences. Therefore, the LOTOS Group companies apply measures and use tools to ensure maximum protection against potential oil spills and environmental contamination.

Social risk is analysed in the context of the LOTOS Group's impact on the environment and stakeholders. The Group's production processes or infrastructure projects may give rise to objections, in extreme cases expressed as social protests. So far, its communication with stakeholders has significantly mitigated that risk.

12.2 Key risks identified at the LOTOS Group

The following corporate risk maps show the number of identified corporate opportunities and risks at each assessment level.

Map 8. Map of corporate opportunities at the LOTOS Group in the long term - as at December 31st 2021

LIKELIHOOD \ IMPACT	negligible	low	moderate	high	very high
very high					1
high			2	1	3
moderate		1		3	
low		1	1		2
negligible					

Source: the Company.

Map 9. Map of corporate threats at the LOTOS Group in the long term - as at December 31st 2021

LIKELIHOOD \ IMPACT	negligible	low	moderate	high	very high
very high	1				1
high	1	1	3		1
moderate	2	1	4	5	2
low	4	5	7	9	4
negligible	2	1	2	1	9

Source: the Company.

Table 41. Key risks (threats and opportunities) at the LOTOS Group, including materiality levels and mitigation methods

Legend:

Risk level:	Threat	Opportunity	Risk trend:	
Low risk			Stable risk	→
Medium risk			Diminishing risk	↘
High risk			Increasing risk	↗

Risk type	Level	Trend	Risk response
Risk from megatrends			
Fluctuating supply and demand trends on the fuel market		→	○ Performing long-term trend analyses and updating strategy to mitigate adverse effects or seize new opportunities to gain a competitive advantage (e.g. in electric mobility) ○ Implementation of development projects to expand and diversify the existing asset portfolio ○ Implementation of development projects to improve the flexibility of production/refinery processing operations and energy efficiency ○ Implementation of innovation projects
Climate risk			
Climate change threats and opportunities		↗	○ Undertaking new initiatives and projects, such as advanced biofuels, alternative fuels, e.g. hydrogen, LNG, CNG, as well as energy efficiency projects – measures to reduce emissions and increase the share of energy from renewable sources ○ Commitment to research and development projects aimed at developing solutions with a favourable impact on the environment and climate change ○ Monitoring and active participation in legislative processes (presentation of analyses, proposing regulatory solutions beneficial to the organisation), both at the EU and national level – for the LOTOS Group, key climate risks relate to its transformation and pertain to regulatory changes
Regulatory risk			
Impact from amended legislation or failure to comply with new national or EU regulations (**can be a threat or an opportunity, e.g.** to obtain financial compensation of CO_2 emission indirect cost).		→	○ Development of a compliance management system by the Compliance Department and External Regulation Department ○ Monitoring new regulations and regulatory changes ○ Active participation in legislative dialogue led by the Regulator and non-governmental organisations ○ Scenario analyses of possible regulatory impacts ○ Implementation of measures for adapting to planned or enacted regulatory changes ○ Setting up interdisciplinary working teams to make the most of potential opportunities
Risk in strategic projects			
Delays, failure to achieve objectives/targets in the implementation of strategic projects		→	○ Comprehensive, step-by-step project planning ○ Qualification of contractors ○ Project risk management ○ Monitoring of progress made on projects, forecasting of project parameters, and mitigation of emerging risks ○ Active project management, including close oversight and communication with contractors

Risk type	Level	Trend	Risk response
Opportunity to build a strong competitive position in the green hydrogen production market		↗	○ Planning and implementing programmes and projects to enable green hydrogen production, including: - the LOTOS Green H2 programme involving the construction of a large-scale plant consisting of electrolysers, hydrogen storage facilities and fuel cells or, possibly, hydrogen turbines, controlled with the use of advanced software - Vetni project designed to construct a pilot unit for high-efficiency hydrogen production based on solid oxide electrolysers powered by RES - potential production of green hydrogen on an offshore platform in an integrated system using purified seawater electrolysis and floating wind turbine
Opportunity to enter the second generation base oils market		↗	○ Implementation of the Hydrocracking Base Oils (HBO) project to further improve the economics of crude oil processing through the production of Group 2 base oils and intermediate fuel products, and the sale of new, high-margin products:
Opportunity to become a national champion on the market for installing and servicing offshore wind farms		→	○ LOTOS Petrobaltic plans to provide maintenance services for developers of offshore wind farms, which will be built in the Polish coastal zone of the Baltic Sea. The Company is currently providing services to partners, e.g. in the form of geological surveys of seabed, which will affect decisions on the type of foundations.
Opportunity to improve energy security of the refinery		→	○ Execution of a letter of intent with PKN Orlen S.A. and Energa S.A. to analyse the feasibility and possible terms of a joint project to build a CCGT plant in Gdańsk.
Opportunity to exploit the potential of LPB's offshore deposits through injecting and storing CO_2		→	○ Initiation of public consultations through the preparation and presentation by LOTOS Petrobaltic and its partners in November 2021 of the document entitled **'Green Paper for the Development of CCS in Poland'**, which is a set of recommendations on legislative changes to enable the launch of large-scale commercial projects for underground storage of carbon dioxide in Poland.
Geopolitical risk			
Disrupted or delayed supplies of crude oil or other essential feedstocks		↗	○ Diversification of crude oil supplies in terms of both directions of supply and means of transport used (e.g. maintaining the availability of supply sources for oil supplied by pipeline and by sea) ○ Maintaining adequate levels of work-in-process stocks ○ Production scheduling and procurement planning ○ Providing for relief measures in supply contracts in case a delivery route becomes unavailable ○ Following the adopted oil procurement policy
Competence risk			
Difficulties with recruitment of qualified staff and retention of competent and experienced employees		→	○ Building an engaging work environment to enhance productivity ○ Creating space for development and innovation within the organisation (activities of the LOTOS Academy, financing of training and higher education, possibility of participating in the PhD Theses Implementation Programme) ○ Building a good employer image inside and outside the organisation ○ Building a knowledge management system to enable effective knowledge sharing/transfer and develop staff competencies necessary to achieve near- and long-term business goals

Risk type	Level	Trend	Risk response
Market risk			
Fluctuating prices of feedstock and petroleum products, fluctuating foreign exchange and interest rates. (can be a threat or an opportunity)		→	○ Following the adopted feedstock and petroleum product price risk management policy and currency risk management policy ○ Monitoring market risk exposure on a daily basis ○ Selecting a trading strategy in line with policy objectives, current market situation and applicable risk limits
Liquidity and financing risk			
Mismanagement of working capital and constrained financing capacity		↗	○ Assessing and forecasting the Group's cash flows and liquidity ○ Analysis of financing sources available to the Group ○ Diversification of financing sources. ○ Optimising liquidity and debt across the Group ○ Effective management of strategic project portfolio
Credit risk			
Insolvent trade partners or counterparties in financial contracts		→	○ Monitoring of partners' ratings and financial standing ○ Setting trade credit limits and limits for counterparties in financial contracts in accordance with internal procedures ○ Employment of diverse financial tools to minimise risk
Exploration risk			
Incorrect estimation of resources, including incorrect estimation of hydrocarbon resources and reserves discovered by exploration wells; drilling of dry wells (without hydrocarbon flows)		→	○ Conduct of geological and reservoir engineering studies depending on the well (exploratory, appraisal, or appraisal and production well) ○ Decision points included in the project (initial phase, execution phase, well results analysis and reservoir evaluation, design phase) to minimise dry well risk ○ Applying international probability-of-success (PoS) standards ○ Cooperation with experienced field operators on the Norwegian Continental Shelf
Production risk			
Risk of drilling or production failure, resulting in reduced availability of affected infrastructure		→	Implementing a range of measures to mitigate such risks as blowout, well failure, oil spill, fire, and collision at sea and to monitor their effective oversight, including: ○ monitoring of process parameters ○ equipment performance tests ○ use of appropriate safety measures ○ compliance with applicable safety and operating procedures
Geological reservoir risk and downhole equipment-related risk		→	○ Reservoir analysis (updating integrated static and dynamic models) ○ Assessing well and pump performance ○ Workover of production wells ○ Injection of chemicals (hydrate inhibitors) reducing the risk of downhole pump failures
Refining risk			

Risk type	Level	Trend	Risk response
Failure of refinery processing units		→	○ Inspecting the technical condition of processing equipment and components in line with maintenance schedules ○ Risk-based inspections of infrastructure ○ Having equipment inspected by the Technical Inspection Office and Company Technical Inspection ○ Identifying Critical Equipment subject to special inspection rules ○ Carrying out annual Failure Prevention Plans and Maintenance/Overhaul Plans ○ Improving staff qualifications, including simulation-based training ○ Automatic control, alarm and shutdown systems
Sales			
Risk of product sales below the target		→	○ Ongoing analysis of demand change scenarios in each sales channel ○ Adjustment of the refining product mix to market demand changes ○ Standards of maintaining good relations with customers
HSE risk			

Accidents along the entire production cycle and logistics chain (including road and rail accidents during product transport and aircraft accidents during rig crews transport)		→	○ Raising employees' and subcontractors' awareness of and commitment to safety culture
			○ Health and safety risk assessment and process risk analysis
			○ Regular inspections of OHS compliance at the workplace
			○ Implementation of the annual Health and Safety Plan for the LOTOS Group
			○ Supervision of subcontracting; operation of the contractor portal (with updated procedures and guidelines for subcontractors performing on-site work at Grupa LOTOS S.A.)
			○ Given the air transport of crews to offshore drilling platforms, with respect to aviation accident risk:
			    ○ high safety requirements for aircraft fleet – AOC and E12 certificates, IFR approval,
			    ○ ongoing monitoring of weather conditions and proper logistics of passenger transport by sea,
			    ○ supervision of the terms of contracts with carriers.

Release of substances which may halt production processes and impact humans and the environment		→	○ Continuous improvement of the Process Safety Management (PSM) system ○ Implementation of change management policies and procedures ○ Risk analysis for each upgrade and new build project ○ Process safety training for personnel ○ Occupational safety instructions and procedures ○ Registration and reporting of process safety incidents
Security risk			
Destruction of critical infrastructure in an act of terrorism		↗	○ Periodical drills to check security and communication systems ○ Implemented procedures in case of physical security or protection breaches ○ Participation in the Government Centre for Security's training ○ Communication with the Provincial Emergency Management Centre

Risk type	Level	Trend	Risk response
External or internal interference with IT and OT systems (cyberattack) and failures		↗	o Implementation of the ISO 27001 system and Cybersecurity Act requirements o Implementation of the *Cybersecurity Rules at the LOTOS Group* o Use of internal system security management procedures o IT security audits o Regular security tests for ICT infrastructure o Raising employees' awareness of cyber security issues (training, information, tests) o Cooperation with CERT ABW Computer Security Incident Response Team o Operation and development of the Security Operation Centre (SOC) Office
Procurement risk			
Shrinking market of suppliers of goods and services meeting the requisite quality standards		→	o Supplier selection procedures o Rules for dealing with key suppliers o Maintaining good relations with suppliers based on transparent procedures
Buying from unreliable suppliers involved in VAT 'carousel frauds'		→	o Application of the split payment mechanism o Detailed checks of trade partners o Inclusion of relevant clauses in contracts with trade partners o Due diligence
Legal risk			
An intentional act or omission which constitutes violation of the law or a breach of the LOTOS Group's internal regulations, committed to secure an unlawful gain or causing the Company to sustain undue losses (including corrupt practices).		→	o Operation of the *LOTOS Group's Misconduct Prevention Policy*, defining a systematic approach to misconduct prevention, including the rules of handling reported or suspected cases of misconduct and methods of communication. o Operation of the Compliance Management Policy at the LOTOS Group o Operation of the Ethical Conduct Programme, which is pursued through the Code of Ethics, the Ethics Officer and the Ethics Hotline, as well as training activities. o Operation at Grupa LOTOS S.A. of the policy for anonymous reporting of potential or actual violations of law to the President of the Management Board and, in special cases, to the Supervisory Board o Application of the *LOTOS Group's gift policy* o Conducting audits and inspections
Violation of data protection laws		→	o Application of internal data protection standards, including as part of personal data protection procedures and the security policy o Audits, also by external auditors, to verify whether the organisation observes the applicable rules and how it is prepared to comply with the GDPR requirements o Raising employees' awareness (training, meetings)
Environmental risk			
Leakage from vessels carrying crude oil / products made by the LOTOS Group		→	o Working with service providers that observe the performance standards set out in resolutions of the International Maritime Organization (IMO) and comply with the maritime security conventions o Including clauses on technical condition of ships in contracts with trading partners and providers of sea transport services

Risk type	Level	Trend	Risk response
			o Working with shipowners that are members of the International Tanker Owners Pollution Federation Ltd. (ITOPF) and hold the required insurance certificates o Insurance coverage and membership in the International Oil Pollution Compensation Fund (IOPCF)
Oil spill on rig		→	o Maintaining offshore equipment in good technical condition to minimise the risk of accidents on rigs o Taking steps to control the risk of formation fluid invasion at the stage of planning and conducting well drilling operations o Holding annual drills in oil spill control o Selecting the right anti-spill equipment o Insurance coverage
Periodical spikes in emissions from the refining process		→	o Constantly monitoring the process and emission parameters, including through a continuous emission monitoring system (CEMS) launched in 2020 o Maintaining high technical standards application of the best available techniques (BAT) requirements o Implementation of environmental management plans
Personnel risk			
Employees resisting changes introduced in the LOTOS Group		→	o Open communication with employees, trade unions and Works Council about the planned changes o Communicating the changes to media o Opportunities for employees to gain new qualifications/ retrain o Offering support in the event of a change of workplace and relocation; financial assistance o Ongoing monitoring of employee sentiment
Social risk			
Social protests against the Group's projects		→	o Maintaining good relations with stakeholders. Holding meetings to inform stakeholders about the Group's projects o Open communication on the Group's current operations and projects o Maintaining good relations with industry, local, nationwide and foreign media o Working with the supervisory bodies and public authorities to prevent crises that may arise in the course of legislative procedures, whether Polish or EU. o Supporting local communities through various CSR programmes/projects

Source: the Company.

12.3 Risk management model

Mechanisms of the risk management model are embedded in the existing business processes. The model comprises three defence lines which are adjusted to the nature of particular activities and the possible impact of risks on the Group's performance.

Table 42. Risk management model

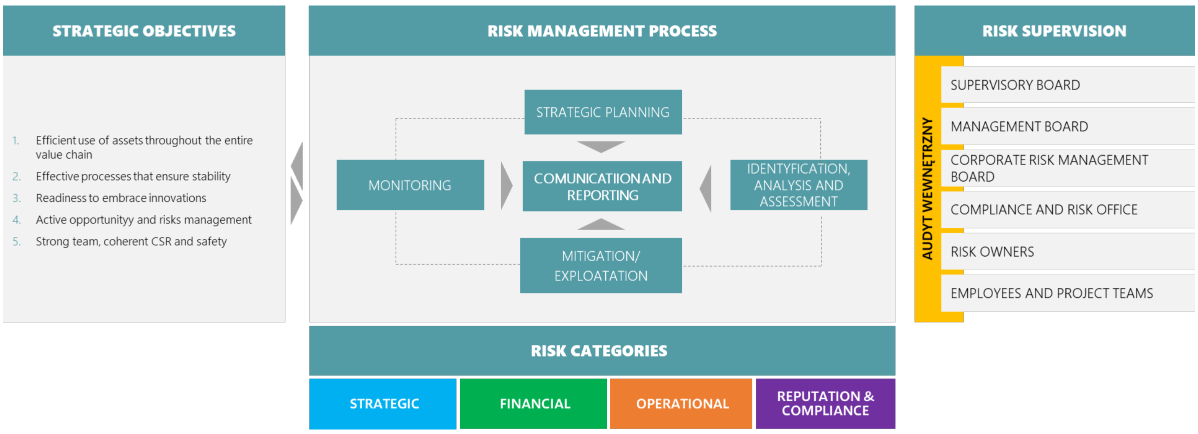
1ST line of defence Business	→ operational risk management → development of operational procedures → risk identification and assessment at the decision-making stage and periodic risk reviews in processes and projects
2ND line of defence Risk, Finance, Compliance	→ definition of risk management policies at the LOTOS Group → linking risk management to the LOTOS Group's strategy → forecasting and shaping the LOTOS Group's risk profile → building the culture of risk and compliance management
3RD line of defence Internal audit	→ independent assessment of the effectiveness and adequacy of the LOTOS Group's risk management process

Source: the Company.

Structure of the enterprise risk management (ERM)

The ERM system focuses on key risks and forecasts their impact on the company's operations and performance, thus facilitating the development of pre-emptive measures that may help mitigate risks or exploit opportunities. This key functionality of the system is currently being strengthened at the LOTOS Group. One of the key objectives of the Compliance and Risk Office is to provide the most useful management information in order to efficiently manage any identified risks.

Chart 3.ERM system



Source: the Company.

12.3.1 Risk management process

Management of threats at the corporate level is carried out as part of a process involving:

- analysis of the external environment (e.g. regulatory framework, macroeconomic factors, global trends) and the internal environment (including business objectives) – a context analysis;
- risk identification – risks are identified in reference to the strategic and operational (annual) objectives, as well as the organisation's long-term growth;
- analysis and assessment of individual risks – the assessment is carried out in two time horizons: annual and strategy implementation period. Criteria taken into account in the risk assessment include the financial impact, the impact on human and environmental safety, as well as reputational issues;
- establishing a risk treatment plan – for each material risk type, an operational management procedure as well as controls and protection measures are defined. For TOP RISKS, relevant risk mitigation and opportunity exploitation measures are prepared, as well as response plans to be followed in case of materialisation of such risks;
- implementation of risk mitigation and opportunities enhancement measures – performing tasks defined in risk treatment plans and monitoring their progress on an ongoing basis;
- monitoring of risk indicators – for top risk categories, key risk indicators (KRIs) are defined, which allow risk exposure levels and risk materialisation probability to be monitored in accordance with relevant rules;
- risk reviews – periodically (every six months), all identified risk types are reviewed and re-evaluated;
- communication and reporting – standards for communicating and reporting the results of risk management are in place at every stage of the process. The Management and Supervisory Boards receive regular, quarterly reports on existing risks to the organisation and on the effectiveness of risk mitigation or exploitation measures;
- the effectiveness and adequacy of the ERM system are assessed and its future development directions are defined on an annual basis.

Chart 4. **Risk management process**

Source: the Company.

12.3.2 Risk oversight – ERM participants

Table 43. Risk oversight – ERM participants

Oversight level	Role
Supervisory Board	→ monitors the effectiveness of the enterprise risk management
Management Board	→ determines risk appetite in the context of the adopted strategy → makes key decisions, concerning TOP RISKs, including resources and the ERM
Corporate Risk Committee	→ provides opinions on and recommends measures applicable to TOP RISKs and the ERM, including risk appetite → monitors the performance of planned tasks → the Committee consists of representatives of key corporate functions
Compliance and Risk Office	→ coordinates and supports measures taken by the process participants → supports risk coordinators and Compliance Officers at LOTOS Group companies → collates information on risks to the organisation → assesses the Group's risk exposure → provides tools and methodological support, and is responsible for developing enterprise risk management → builds a risk and compliance management culture through training and education activities
Risk owners	→ manage individual risks, which includes defining risk treatment plans, monitoring risk levels, and overseeing risk mitigation and opportunities enhancement measures
Project teams/individuals	→ identify new risks → implement risk mitigation or opportunities enhancement measures
Internal Audit Office	→ identifies and evaluates risks to the LOTOS Group's operations → verifies relevant controls and examines their effectiveness → assesses the effectiveness of the risk management system

Source: the Company.

Management Board Report on the Activity of Grupa LOTOS S.A. and the LOTOS Group

for 2021

13 Non-Financial Statement of Grupa LOTOS S.A. and the LOTOS Group

13.1 Key Non-Financial Performance Indicators

The Key Non-Financial Performance Indicators are monitored only at the consolidated level, i.e. for the entire LOTOS Group.

Table 44. Key Non-Financial Performance Indicators

	Unit	2020	2021	change y/y	objective
Governance area					
Dividend capacity	yes	yes	no	change	yes
LTIF security	LTIF	3.5	4.7	33.5%	< 3
Operations					
Daily oil production	thousand boe/d	20.3	17.3	-14.8%	30-50
2P reserve level	million boe	74.8	69.2	-7.5%	60
Oil throughput	million tons	10.2	9.9	-2.9%	10.5
Number of service stations	pcs.	513	520	1.4%	550
Natural environment					
Greenhouse gas emissions (scope 1+2) per ton of oil processed	Mg CO_2e /Mg	0.22	0.219	-0.5%	↓
Primary energy consumption per ton of product	MWh/t	1.2	1.1	-5.9%	↓
Personnel					
Accident incidence rate (accidents per 1,000 employees)	n.a.	6.8	9.2	36.5%	0
Customer satisfaction NPS (net promoter score) - survey based on feedback from Navigator customers*	NPS	positive	positive	unchanged	positive trend

Source: Company

Selected financial and operating results

9.9 million tons of oil processed

11.0 million tons of refinery products

17.3 thousand boe of average daily crude oil and natural gas production

69.2 million boe of LOTOS crude oil and natural gas reserves

520 service stations operating under the LOTOS brand

More than 80 markets served globally

12 electric car charging points on the Tri-City-Warsaw route

/201-1/

Table 45. Key financial results (million PLN)

	2020	2021	change y/y
LOTOS Group			
Sales revenues	20,909	33 124	58,4%
Adjusted LIFO-based EBITDA	1,357	4 229	211,7%
Result before tax	-1,653	4 457	-
Net result	-1,146	3 212	-
Cash flow on operating activity	2,870	2 897	1,0%
Grupa Lotos S.A.			
Sales revenues	17,737	29 036	63,7%
Adjusted LIFO-based EBITDA	-379	1 731	-
Result before tax	-1,138	3 039	-
Net result	-881	2 520	-
Cash flow on operating activity	1,370	43	-96,9%

Source: Company

13.2 About the LOTOS Group

/103-1/ /103-2/ /103-3/

The LOTOS Group is the second largest fuel producer in Poland, which ranks it among the largest companies operating in Poland. At the same time, LOTOS holds a leading position in many other domestic markets, including oils, bitumens and rail freight. In addition to the production and processing of crude oil and natural gas, the Group's business includes the sale of high-quality petroleum products and the provision of specialized logistics and maintenance services.

The LOTOS Group is aware of its impact on its surroundings and the environment, therefore as a socially responsible company it applies ethical principles in its operations and follows international standards, such as ISO 26000, in the area of organizational governance, human rights, labor practices, environment, fair operating practices, consumer issues, social engagement and local community development. The Company supports the achievement of the Sustainable Development Goals (SDGs) and adheres to the UN Global Compact Principles.

LOTOS Group companies are strongly involved in activities for the environment. They are a regular participant and observer in the functioning of local communities, often integrating business, local governments and higher education. This brings long-term benefits to all stakeholders. At the same time, the LOTOS Group strives to solve social and environmental problems in a sustainable manner, e.g. through continuous investments aimed at improving energy efficiency.

/102-1/ /102-3/ /102-5/

The Group consists of: Grupa LOTOS S.A., production, service and commercial entities and the foundation. Grupa LOTOS, the Group's parent company, is a joint stock company with the State Treasury as the majority shareholder holding 53.19% of shares. The other shareholder is Nationale-Nederlanden Powszechne Towarzystwo Emerytalne, holding 5.01% of shares. The Company's shares are a component of the WIG 20 index, listed on the Warsaw Stock Exchange since 2005. The head office of Grupa LOTOS S.A. is located in Gdańsk, at ul. Elbląska 135.

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Grupa LOTOS has a huge impact both directly and indirectly on its surroundings. As the second largest oil company in Poland, it is of key importance for the country. First and foremost as an employer, taxpayer and sponsor, but also as a benefactor and partner to numerous suppliers, institutions, and organizations. It cooperates with small and medium-sized businesses and, being a stable employer in the region, provides jobs for many local residents. Additionally, it contributes to building and maintaining jobs for its business partners by working with contractors in the region. The Company is a very important taxpayer in its regions of influence, contributing to the Gdańsk budget for many years.

13.2.1 Business model

/102-1/ /102-4/

The Company's core business covers three areas:

- prospecting and extraction of hydrocarbons,
- crude oil processing,
- trading in petroleum products.

The LOTOS Group's operations are divided into two segments:

- Exploration & Production, and
- Refining & Marketing.

Exploration & Production Segment

This area is responsible for the acquisition and production of oil and gas and the associated auxiliary, transportation and service activities.

The LOTOS Group is the only company involved in extraction in the Polish Exclusive Economic Zone of the Baltic Sea. Outside Poland, it extracts resources on the Norwegian Continental Shelf and in Lithuania.

/102-4/ /102-7/

In 2021, the LOTOS Group's oil and gas production averaged 17.3 thousand boe per day. The structure of this output was as follows:

- Norway 64%,
- Poland 33%,
- Lithuania 3%.

At the end of 2021, the LOTOS Group's total crude oil and natural gas 2P reserves were 69.2 million boe, of which 83% was crude oil and 17% natural gas. The structure of 2P reserves was as follows:

- Norway 33.3%,
- Poland 63.4%,
- Lithuania 3.3%.

Refining & Marketing Segment

The function of this area is the manufacture, processing of refined petroleum products, as well as their wholesale and retail sale and auxiliary, transportation and service activities.

/102-2/ /102-6/

The LOTOS Group's commercial activities in 2021 were conducted within Grupa LOTOS and its subsidiaries: LOTOS Paliwa, LOTOS Oil, LOTOS Asfalt, LOTOS-Air BP. It is characterized by high efficiency - the new technologies which are used in production processes make it possible to obtain as much as 86% of the so-called white products, i.e. high-margin fuel, from crude oil, while additional 8% is made up of heavy products sold to business partners, such as bitumen, petroleum coke and heavy fuel oil.

Grupa Lotos S.A.'s refinery processed approximately 9.9 million tons of crude oil and produced 11 million tons of products in 2021. The main element in the production structure was diesel fuel. About 6 million tons of this product were produced, 3.8% more than in the previous year. Its share in the product structure was 54.1%. The products obtained as a result of crude oil processing are sold in Poland and abroad, in the wholesale channel and to retail customers through the Group's own network of service stations. At the end of 2021, the LOTOS service station network consisted of 520 facilities (increase by 7 compared to the end of 2020. Among them are 327 the so-called CODO (Company Owned Dealer Operated) stations - including: 30 MOP stations, the remaining 297 own stations, and 193 DOFO (Dealer Owned Franchise Operated) stations.

13.2.2 Products and services

/102-2/ /102-4/ /102-6/ /102-7/

LOTOS Group's products are sold primarily in Poland and mainly in European countries, such as Germany, Netherlands, Belgium, Sweden, United Kingdom, France, Czech Republic, Denmark and Norway.

The LOTOS Group offers the whole range of products and services such as:

- Top quality fuels (including marine and aviation fuel);
- A wide range of oils of the highest technological parameters - for the automotive business, agriculture and industry, but also for ships or even military technology vehicles;
- Bitumen roads, modified MODBIT (including MODBIT HIMA highly modified bitumen), WMA (for production of mineral-bitumen mixes) or industrial bitumen;
- Rail transportation.

Products and health and safety

/103-1/ /103-2/ /103-3/ */416-1/*

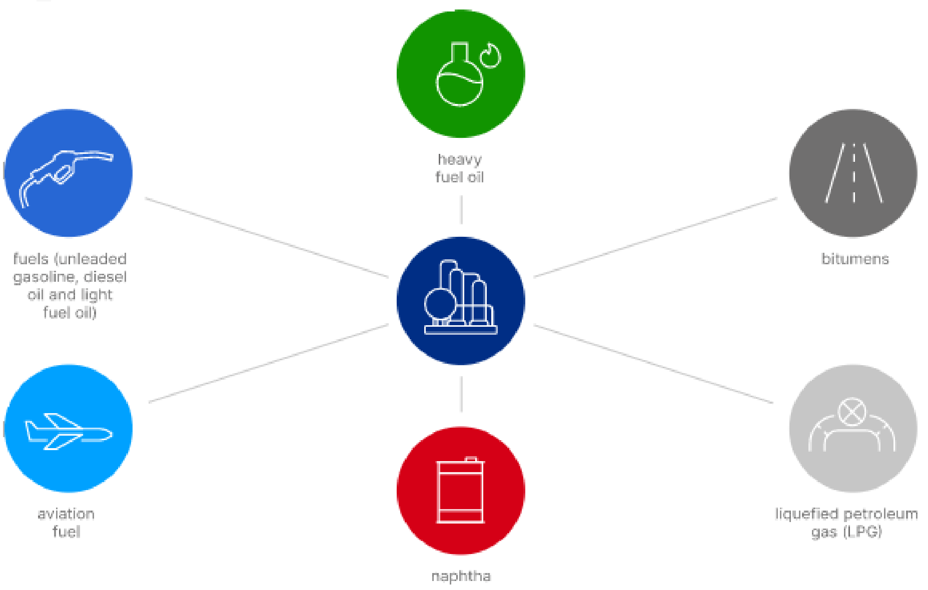
Each LOTOS Group customer has the possibility to get acquainted with information concerning safe use of products in an electronic form, also directly at the point of sale. LOTOS Group companies fulfill the obligation to provide product information in accordance with the guidelines arising from the provisions of law.

Therefore, all products manufactured in Group companies have Product Information or Safety Data Sheets, which are prepared on the basis of applicable international requirements. All activities are carried out in accordance with EU REACH and CLP regulations. In addition, up-to-date registration documentation is maintained for each substance included in the products offered.

The documentation includes, among others, data on physical and chemical parameters, and health and environmental effects.

Also hazard classification is extremely important. The content of particularly hazardous substances is also checked on an ongoing basis.

Chart 5.**Products achieved as a result of crude oil processing:**



Source: Company

Chart 6.**LOTOS Group brands:**

Source: Company

Approach to environmental issues

Grupa LOTOS realizes how important for the climate and the environment is to transform the operating model to a greener one. One of the elements of this transformation is the 12 charging stations for electric vehicles located along A1 and A2 motorways between Warsaw and Gdańsk. They form the so-called Blue Route.

The next element will be the production of purified hydrogen. Then LOTOS will become the first producer of this fuel in Poland and will build two stations offering this fuel. At the end of 2018, the Company was awarded EU funding for the Pure H2 project, i.e. a hydrogen purification and distribution plant.

Also LOTOS Lab and LOTOS Kolej are continuing environmentally conscious modernization.

Grupa LOTOS makes every effort to ensure safety at every stage of the value chain. This applies to both its current operations and the products it offers. LOTOS Lab meticulously examines the semi-finished products, finished products, components and additives used in the production of fuels, oils and bitumens, as well as the water used in the production of energy media and wastewater.

13.2.3 Taxonomy

On 18 June 2020, *Regulation 2020/852/EU of the European Parliament and of the Council on the establishment of a framework to facilitate sustainable investment*, referred to as the Taxonomy, was enacted. The Taxonomy defines which business activities, if additional criteria, including technical and social, are met, can be considered environmentally friendly. The LOTOS Group is obliged to publish non-financial information under Directive 2014/95/EU (NFRD) and must also disclose in its statement on this topic how and to what extent its activities are related to business activities that qualify as environmentally sustainable. The scope of responsibilities in this regard will gradually increase starting with the 2021 reports. The Taxonomy is complemented by the provisions of Commission Delegated Regulation (EU) 2021/2178 of 6 July 2021, which clarify the content and presentation rules for information on environmentally sustainable economic activities disclosed under the provisions of the Taxonomy, and Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 which establish technical eligibility criteria for determining the conditions under which an economic activity qualifies as making a significant contribution to climate change mitigation or adaptation, and whether that economic activity does not cause serious harm to any other environmental objective.

In fulfilling the requirements for this Statement, Grupa LOTOS has identified its business activities that are eligible as environmentally sustainable. In the next step, it analyzed:

- the percentage of turnover derived from products and services related to these activities in the total turnover of Grupa LOTOS,
- the percentage of capital expenditures and operating expenditures of the Group corresponding to the assets or processes related to the said activities.

In 2021, 7.9% (PLN 81.6 million) of the LOTOS Group's capital expenditures were environmentally sustainable and no more than 0.04% (PLN 10.5 million) of the corresponding operating costs were recognized. Revenue from activities eligible for the EU classification of sustainable economic activities accounted for 0.3% (PLN 88 million) of the Group's total turnover in 2021. These indicators were calculated excluding mainly those parts of Taxonomy-eligible activities that were related to the extraction, storage, transportation or production of fossil fuels.

Table 46: **Capital expenditures (CapEx) qualified according to the EU Taxonomy for 2021**

DNSH criteria

Economic activities	Code or codes	Climate change mitigation	Climate change adaptation	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity and ecosystems	CapEx absolute value	CapEx share in 2021

		Satisfies / Does not satisfy			Yes / No (Y/N)					PLN million	%
A.1. Types of environmentally sustainable activities (consistent with the taxonomy and meeting minimum guarantees)											
Rail transport	H49.20 N77.39	Satisfies in respect of the transport of goods other than petroleum products	Does not satisfy		T	T	T	T	T	74.0	7.2%
PURE H2	H49.50 C20.11 H49.50 H52.21 H52.24 H52.29 M71.12 M72.19	Satisfies	Satisfies			T	T	T	T	5.2	0.5%
Hydrogen Recovery Unit	C20.11	Satisfies	Satisfies			T	T	T	T	2.3	0.2%
VETNI	M71.12 M72.19	Satisfies	Satisfies			T	T	T	T	0.06	0.001%
Pumping of CO_2 into the Sleipner deposit	F42.21 H49.50 E39.00	Satisfies	Satisfies			T	T	T	T	0	0%
Total CapEx from environmentally sustainable activities (consistent with the taxonomy) (A.1)										**81.6**	**7.9%**
Other capital expenditures (CapEx)										966.3	92.1%

Source: Company

Table 47: Operating expenditures (OpEx) qualified according to the EU Taxonomy for 2021

				DNSH criteria							
Economic activities	**Code or codes**	**Climate change mitigation**	**Climate change adaptation**	**Climate change mitigation**	**Climate change adaptation**	**Water and marine resources**	**Circular economy**	**Pollution**	**Biodiversity and ecosystems**	**OpEx absolute value**	**OpEx share in 2021**
		Satisfies / Does not satisfy			Yes / No (Y/N)					PLN million	%
A.1. Types of environmentally sustainable activities (consistent with the taxonomy and meeting minimum guarantees)											
Rail transport	H49.20 N77.39	Satisfies in respect of the transport of goods other than petroleum products	Does not satisfy		T	T	T	T	T	10.5	0%
Total OpEx from environmentally sustainable activities										**10.5**	**0%**
Other operating expenditures (OpEx)										28,773.6	100%

Source: Company

Table 48: Percentage of turnover qualified according to the EU Taxonomy for 2021

DNSH criteria

Economic activities	Code or codes	Climate change mitigation	Climate change adaptation	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity and ecosystems	Turnover absolute value	Turnover share in 2021
		Satisfies / Does not satisfy		Yes / No (Y/N)						PLN million	%
A.1. Types of environmentally sustainable activities (consistent with the taxonomy and meeting minimum guarantees)											
Rail transport	H49.20 N77.39	Satisfies in respect of the transport of goods other than petroleum products	Does not satisfy		T	T	T	T	T	87.7	0%
Turnover from environmentally sustainable activities										**87.7**	**0.3%**
Turnover from other activities										33,035.9	99.7%

Source: Company

As required by the regulations, further disclosures related to sustainable business activities will be included in subsequent annual non-financial reports, including, among other things, verification of material contribution to the various environmental objectives defined in the regulation and of not harming others, as well as verification of compliance with the technical criteria adopted for the Taxonomy and the minimum social and labor guarantees.

13.2.4 Value chain

/102-9/

Grupa LOTOS, in its cooperation with suppliers, relies on transparent principles developed within the Group relating to the procedures for the purchase of goods and services and procedures that support systematic management of the customer base (CRM) and strictly adheres to the principles of business partner verification. The Group's supplier base currently comprises several thousand vendors, and cooperation with many of them has been continued for many years. The supplies range from refinery feedstock, production components, energy fuels, and services, office supplies and consulting.

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LOTOS Group's activities include the following processes:

- Oil and gas prospecting and mining

This activity is carried out in three countries: Poland, Lithuania and Norway (the largest player in the region). Bulk of the mining (64%) comes from Norway. The Group's 2P reserves are mostly located beneath the seabed of the Baltic Sea (63%) and the Norwegian Sea (33%).

Grupa LOTOS, as one of the leading suppliers of fuels and petroleum products for the domestic and foreign markets, widely cooperates with both domestic suppliers and renowned international companies. Approx. 50% of the value and volume of raw materials and components purchased is oil and natural gas. Crude oil is purchased from the leading, largest trading firms in the market. However, the main supplier of natural gas is PGNiG. A significant item in component purchases are biocomponents. In 2021, as in 2020, the share of domestic suppliers of biocomponents for fuels (bioethanol and fame) accounted for more than 70% by volume.

This cooperation and the implemented internal purchasing procedures ensure constant and uninterrupted supplies of crude oil, energy and blending components.

- Crude oil processing

The LOTOS Group has one of the most modern and youngest refineries in Europe, located in Gdańsk. Its nominal capacity is approx. 10.5 million tons of oil per annum. It is characterized by a unique interconnection of raw material supply channels by land, from the East via the PERN pipeline network, and by sea via Naftoport. Access to supply channels allows for diversification of feedstock supplies, as well as smooth response to fluctuating prices of oil products and crude oil grades. The dominant type of oil processed in Gdańsk is Russian Urals. The remainder of the raw material is imported from other countries, including Saudi Arabia, and from fields operated by companies from the LOTOS Group. As a result of crude oil processing, the refinery produces such products as fuels (unleaded gasoline, diesel, light diesel), jet fuel, bitumens, and heavy fuel oil. The Gdańsk plant has the highest processing complexity coefficient (Nelson Complexity Index) in Poland and one of the highest in Europe.

- Distribution and sales

Fuels produced at the LOTOS Group refinery in Gdańsk are sold on the domestic retail market exclusively through the network of own and partner service stations. On the wholesale market, however, the buyers of the products include multinationals, the Material Reserves Agency and the Military Property Agency, domestic wholesale buyers, and independent operators. At the end of 2021, there were 520 service stations with the LOTOS logo operating in Poland. As part of this network, the LOTOS Group also had 30 Service Areas (MOP) at the A1, A2, A4 and A6 motorways and S3 and S7 expressways. In this area the Group cooperates with a third-party partner, the Subway restaurant chain, on a corporate franchise basis. The LOTOS Group also supplies its products to customers via railroads through its company LOTOS Kolej.

Apart from transporting LOTOS Group's products, LOTOS Kolej also provides transport of other goods, including hazardous ones. Among others, the Company has a contract with the Polish Armed Forces to transport F34 aviation fuel. As regards fuel distribution, Grupa LOTOS also uses a modern fuel terminal for road tankers located in Czechowice-Dziedzice and fuel depots in Poznań, Piotrków Trybunalski and Rypin.

In 2021 the most important event associated with structural changes was the transfer of an organized part of Grupa LOTOS S.A.'s enterprise to LOTOS Asfalt sp. z o.o. The direct cause of the transfer of the organized part of the enterprise from Grupa LOTOS S.A. to LOTOS Asfalt Sp. z o.o. is an internal reorganization of the existing refinery assets carried out through the contribution, by Grupa LOTOS S.A. to LOTOS Asfalt Sp. z o.o., of a set of intangible and tangible assets, including liabilities, previously intended to be carried out by Grupa LOTOS S.A. The change was also an implementation of one of the European Commission's conditions stipulated in the decision on conditional approval of the concentration involving the acquisition of control over Grupa LOTOS S.A. by PKN ORLEN S.A. with its registered office in Płock.

13.2.5 Development strategy

/102-14/ /102-15/

The main objective of the strategy of Grupa LOTOS S.A. for 2017-2022 is to stabilize and safely develop the Group. Grupa LOTOS S.A. is one of the leading companies in Poland and an important energy concern, whose development vision is to achieve the position of:

- an optimally vertically integrated manufacturer of high quality fuels and chemical products,
- a provider of specialized logistics and maintenance services,
- a leader in the implementation of innovations within its core business, to ensure stable growth of the Group's shareholder value.

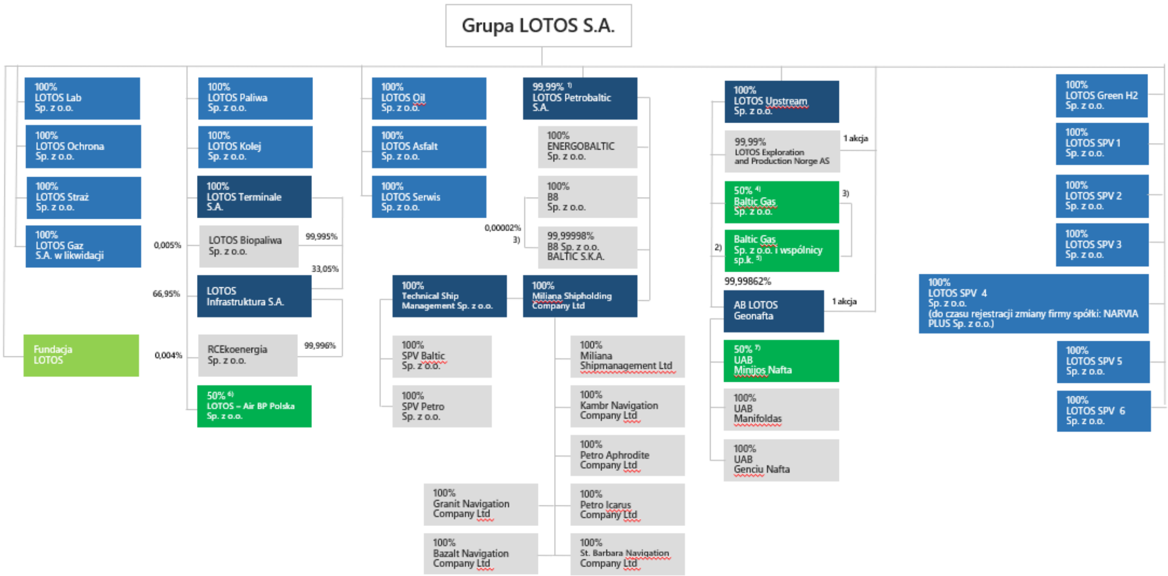
As part of the strategy, the Company has set five major strategic objectives:

- efficient use of the mining concessions, further technological optimization of the refinery, introduction of new products and alternative fuels and attention to quality standards,
- successive and replicable reduction of operating costs and margin optimization along the entire value chain,
- readiness to develop and implement innovations thanks to a dedicated fund, a modern model of cooperation with scientific centers and creative involvement of employees,
- flexibility in responding to emerging risks which the Company also views through the lens of business opportunities,
- care for and development of talents in the organization, improvement of broadly understood safety (work, infrastructure and information systems) and growing social responsibility.

Grupa LOTOS S.A. has divided the implementation of its strategy into two time horizons. The main goals for 2017-2018 were to stabilize cash flow, reduce debt, and effectively execute the investment projects that have been started.

In the strategic outlook for 2019-2022, the Company has assumed the implementation of a new investment portfolio based on selected development projects of production assets, the construction of an efficient portfolio of mining assets, and the further development of the service station network and the implementation of innovative projects. The Company's strategy is presented in more detail in Section 4 Strategy of Grupa LOTOS S.A. for 2017-2022.

Chart 7.**Structure of the LOTOS Group**
As at 31 December 2021



1) State Treasury - 0.01% 2) Limited partner 3) General partner
4) CalEnergy Resources Poland Sp. z o.o. – 50%
5) CalEnergy Resources Poland Sp. z o.o. – limited partner
6) BP Europa SE – 50%
7) Odin Energi A/S – 50%

Companies classified as joint ventures, not belonging to the LOTOS Group

In addition, Grupa LOTOS S.A. holds:
- 8.97% stake in the share capital of P.P.P. "Naftoport" Sp. z o.o. (a company belonging to the PERN Group from Płock)
- 17.3% stake in Grupa Azoty Polyolefins S.A.

Source: Company

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The implementation of the strategy is the responsibility of Grupa LOTOS Management Board. For details on the structure of the management and supervisory bodies, see Chapter 11. Corporate Governance.

13.3 Environment

/103-1/ /103-2/ /103-3/

13.3.1 Approach to sustainable development

The LOTOS Group's strategy takes into account sustainable development, i.e. reducing the environmental impact. The Company is committed to responsible environmental management. Consequently, the LOTOS Group reduces its consumption of energy, materials and raw materials, controls and reduces gas and wastewater emissions, reduces the amount of waste produced and cares for biodiversity. Being aware of the fact that its activity affects various components of the ecosystem, the LOTOS Group conducts monitoring and analysis of its impact on the environment on an ongoing basis.

Year by year, the LOTOS Group has become increasingly effective in controlling air pollutant emissions and, in the mining area, it strives to produce less waste and wastewater and to pollute water as little as possible. Reducing energy consumption is just as important to the Company, therefore it measures energy consumption at every stage of the value chain. It inspects the technical condition of the equipment, optimizes processes that cause unnecessary energy losses, and analyzes all these aspects even in new projects.

The LOTOS Group also cares about its impact on local communities, which is further discussed in Section 4.4.

/307-1/

In 2021, no penalties or non-financial sanctions have been imposed on the LOTOS Group for non-compliance with environmental laws and regulations.

Due diligence procedures and policies

Below is a list of procedures, regulations, rules, instructions and policies implemented in the LOTOS Group to ensure responsible management of environmental issues (as at 31 October 2021):

- IMS policy,
- Waste management,
- Waste management plan,
- Noise management plan,
- Environmental monitoring plan,
- Environmental and energy goals and objectives,
- Inventory of environmental and energy goals,
- Identification of environmental aspects,
- Environmental aspects,
- Monitoring of processes and activities impacting the environment,
- Rules of environmental sampling and measurements,
- Monitoring of CO_2 emissions from Grupa LOTOS S.A.'s production installations,
- Preventing and preparing for emergencies and accidents at work,
- Responding to emergencies,
- Conducting investigations after emergencies,
- Practical exercises to prepare for proper response to emergencies and other hazards,
- Directive on the rules of communication in the area of environmental activities of Group companies and Grupa LOTOS S.A. with the Environmental Protection Department of Grupa LOTOS S.A.,
- Rules of conduct regarding environmental impact - instructions for third-party companies carrying out works under the EFRA project,
- Rules of waste management on the premises of Grupa LOTOS S.A. - information for third-party companies.

13.3.2 Approach to climate change

Climate aspects remain an important issue also for oil and energy companies. In its operations, the LOTOS Group focuses on improving energy efficiency.

Thanks to these efforts, as well as the introduction of natural gas to fuel the refinery, LOTOS Group's emission benchmark, expressed in terms of CO_2/CWT emissions, is at the level of 10% of the best European refineries.

The LOTOS Group is developing dynamically, looking for new, more environment-friendly energy solutions, which it conducts research on.

The Company relies on natural gas, which is widely used in its plants due to its low carbon footprint. It has replaced fuel oil in the CHP plant - it has become the main energy fuel in the steam production process. It is also the main ingredient of the fuel gas in the refinery. It is used also as a feedstock for hydrogen production (previously, more emission-intensive LPG and pyrolysis gasoline were used in hydrogen production). Thanks to these changes, the LOTOS Group maintains its carbon dioxide emissions at a constant, relatively low level.

/TCFD: Governance Disclosure A, B/

The LOTOS Group executes many projects that support the reduction of the organization's negative impact on the environment and the use of opportunities arising from climate change.

The Management Board of Grupa LOTOS S.A. monitors and supervises the progress of the most important projects on an ongoing basis.

Additionally, on a monthly basis at the Management Board meeting, a report is discussed including the status of key initiatives and projects, and identified risks.

Both the Company's Management Board and Supervisory Board are involved in the operation of the risk management system aimed at identifying risks and opportunities and reducing threats to the Group's operations.

In the LOTOS Group, in connection with the climate change, in accordance with the division of powers in the Management Board, Vice-President of the Management Board, Refining & Marketing is responsible for the area of environmental protection, which includes climate impact management, emissions and energy use.

The LOTOS Group is currently implementing its strategy adopted for 2017-2022, in which changes in climate policy have been identified as one of the key challenges in the long term, and has launched activities in this respect. One of the goals of this strategy is to pursue the market of innovations associated with, among others, hydrogen and CNG/LNG, as well as new business areas such as electromobility (for more details, see Section 4 Strategy).

/TCFD: Metrics Targets Disclosures C/

Under climate risks, the Company is required to meet targets for the minimum share of other renewable fuels and biocomponents contained in the fuels used in all modes of transport in the total volume of liquid fuels and liquid biofuels consumed during the calendar year in road and rail transport, calculated by calorific value. This obligation, referred to as the National Indicative Target (NIT), results from the Act of 25 August 2006 on bio-components and liquid biofuels.

Targets and nominal values over a 5-year horizon have been defined. Below are the requirements set for 2021-2024:

- 8.7 percent - for 2021
- 8.8 percent - for 2022
- 8.9 percent - for 2023
- 9.1 percent - for 2024

So far the LOTOS Group has met the national indicative target in accordance with the applicable regulations (taking into account the reduction factor and the substitution fee).

Another indicator is the reduction of lifecycle greenhouse gas emissions of fuels per unit of energy. This reduction should amount to at least 6% compared to the EU average lifecycle greenhouse gas emissions per unit of energy from fossil fuels in 2010. This obligation, referred to as the National Reduction Target (NRT), stems from the Act of 25 August 2006 on the fuel quality monitoring and control system.

The LOTOS Group also takes its own measures to improve energy efficiency. In 2021, a dedicated organizational unit - the Energy Efficiency Department identified and, in cooperation with the production area, implemented 23 production process optimizations with a total value of achieved savings exceeding PLN 3.5 million.

Reviews of the implementation of the LOTOS Group Strategy for 2017-2022 are carried out by the Management Board on a quarterly basis. The reviews discuss the most important issues related to the implementation of the current strategic objectives, as well as the circumstances, including climate issues, that may affect the operations of the LOTOS Group in the future.

Due to the fact that the LOTOS Group is undergoing a process aimed at ownership change, at the time of preparing this information, no strategy has been developed for how the organization will proceed after 2022 under different scenarios related to climate change.

/201-2/

/TCFD: Strategy Disclosure A/

/TCFD: Risk Management Disclosures A, B, C/

/TCFD: Metrics and Targets Disclosure A/

13.3.3 Opportunities and risks associated with climate change

Climate-related risks and opportunities are one of the elements of a comprehensive Enterprise Risk Management (ERM) system in the LOTOS Group. As part of this system there is a Corporate Risk Committee chaired by the President of the Management Board of Grupa LOTOS S.A. The Committee's role is to ensure that corporate risk management activities are carried out in a manner consistent with the functioning of the entire LOTOS Group. The Committee monitors the implementation and assesses the effects of the actions undertaken to manage the most important corporate risks in the LOTOS Group, including those related to climate change.

In addition, after the end of each quarter, the Compliance and Risk Department prepares for the Management Board and Supervisory Board reports on risk management in the Group, which cover the most important issues related to threats and opportunities, including those related to climate and regulatory changes in this area.

A review of the up-to-dateness and assessment of all risks, including climate risks identified within the ERM system, is conducted at least twice a year. From 2020, the LOTOS Group has defined the so-called climate risks. This is aimed to highlight their importance and facilitate the development of an approach to comprehensive management of this risk category. The key risks following from climate change that could result in significant changes to the organization's operations, revenues, or costs are transformational (not physical) risks.

Within the framework of the Integrated Management System, which includes, among others, the Environmental Management System, the LOTOS Group has an Environmental Monitoring Plan in place, monitoring, among other things:

- emission of gaseous and particulate pollutants discharged in a channeled manner into the air from the LOTOS Group emitters,
- hydrocarbon emissions and weather conditions,
- the volume and quality of deep-water intake,
- the volume and level of intake of the Motława River and the retention reservoir, and the quality of surface water abstracted for industrial purposes,
- the level of near-surface groundwater around the retention reservoir in Przejazdowo,
- the quantity and quality of discharged water and wastewater,
- measurement of the quality of rainwater and snowmelt,
- the quality of water in the Rozwójka and the Martwa Wisła rivers,
- • the amount and type of waste generated,
- the quality of land in the LOTOS Group sites,
- the noise level.

Within the framework of corporate risk management in the LOTOS Group, risks are identified and assessed in two time horizons: annually (short-term perspective) and in the horizon of the implementation of the current strategy of the LOTOS Group, i.e. currently until the end of 2022 (medium-term perspective).

The process also included risks whose characteristics and assessment extend beyond 2022 and which are long-term in nature up to 2030.

To determine the level of materiality for individual climate risks a corporate risk assessment matrix is used. Each risk is measured in terms of its likelihood of materialization and potential impact based on the following criteria:

- financial impact, mainly in terms of EBITDA of the LOTOS Group,
- impact on safety of people, the environment, and reputational issues.

The risks that are currently likely to have a significant financial impact on the organization relate to the medium and long term. This is mainly related to the planned changes in the legal regulations at the national and EU level. These regulations will translate into the need to incur higher costs associated with meeting targets for, among others, NIT, NRT, energy efficiency, including the cost of investments in projects supporting a low-carbon economy.

Table 49. **Key risks for the LOTOS Group arising from climate change.**

Risk factors	Threats	Opportunities	Risk management methods	Risk impact level		
				Short-term	Medium-term	Long-term
The National Indicative Target (NIT) defines the minimum share of renewable energy in transport and is an implementation of the amended RED Directive (the so-called RED II Directive) through amending the Act on biocomponents and liquid biofuels						
The RED II Directive provides for, among other things, increase of the obligation regarding the minimum share of renewable energy in transport to 14% (as compared to 10% at present) and the minimum share of advanced biofuels at the level of 3.5% by 2030.	- increased operating costs as a result of increased renewable energy requirements for transportation (e.g. need for more expensive advanced biofuels, possible penalties)	+ entry into a new market for advanced biofuels, the demand for which in the EU is expected to grow	Striving for the maximum reasonable level of achievement of the NIT target through purchase and use of biocomponents. In addition, if economically justified, it is possible to use co-hydrogenation. In addition, analytical work on the use of biohydrogen from biomethane is underway. Ongoing contact with the national regulator, presenting results of analyses and positions, proposing regulatory solutions favorable to the LOTOS Group.	HIGH	N/D from 2025, the goals following from RED II directive should be replaced with the RED III directive	
Revision of the directive on the promotion of the use of energy from renewable sources (RED III)						
Increase in the obligation regarding the share of renewable energy in transportation, resulting in increased use of low-carbon fuels, including advanced biofuels, synthetic liquid and gaseous fuels, and hydrogen.	- increased costs associated with the purchase and production of biofuels and potential penalties for not meeting renewable energy targets for transportation	+ opportunity to enter new markets for advanced biofuels or hydrogen + opportunity to attract dedicated support for low-carbon projects and the opportunity for new investments in a sector for whose products there may be increased demand in the EU	Undertaking investment projects (e.g. in the area of advanced biofuels, hydrogen) to reduce emissions and increase the share of renewable energy. Monitoring and active participation in the legislative process (presenting results of analyses and positions, proposing regulatory solutions favorable to the LOTOS Group), both at the EU and national level.	MARGINAL	VERY HIGH	VERY HIGH
Revision of the Energy Taxation Directive (ETD)						

The contemplated changes to the fuel and energy taxation system will result in an increase in the minimum tax thresholds and their differentiation in such a way as to make low-emission alternative fuels as cheap as possible relative to petroleum-based fuels.	- possible gradual decline in demand for traditional fuels - increasing tax burdens on traditional fuels, disturbing the current relationship between taxation of diesel, gasolines and LPG	+ increased interest in low-emission alternatives such as electricity, hydrogen or fuels with higher content of advanced biocomponents + potentially higher profitability of projects related to the production and use of alternative fuels in transport due to their preferential taxation	Undertaking investment projects in the area of alternative fuels and biofuels that will be subject to preferential taxation. Monitoring and active participation in the legislative process (presenting results of analyses and positions, proposing regulatory solutions favorable to the LOTOS Group), both at the EU and national level.	MARGINAL	HIGH	VERY HIGH
Introduction of EU regulations on sustainable aviation fuels, the so called "ReFuelEU Aviation"						
The initiative involves the development of Sustainable (low-carbon) Aviation Fuels (SAF) - various options are being considered, including a commitment for the refining industry to produce a certain volume of low-carbon aviation fuels.	- high costs of compulsory production of SAF (if this option is eventually found in the regulations) - due to, inter alia, limited availability of raw materials and the costly certification procedure for such fuels; it is estimated that the cost of introducing SAF is several times higher than for traditional fuels	+ entry into the emerging, prospective and likely high-margin sustainable aviation fuel market	Analysis of opportunities to enter the emerging sustainable aviation fuels market. Monitoring and active participation in the legislative process (presenting results of analyses and positions, proposing regulatory solutions favorable to the LOTOS Group), both at the EU and national level.	MARGINAL	HIGH	VERY HIGH
Revision of the directive on alternative fuels infrastructure						
The initiative pertains to setting mandatory targets for the development of alternative fuels infrastructure at the EU level - the aim is to increase the number of electric car charging stations, hydrogen, CNG and LNG refueling stations and liquefied natural gas (LNG) refueling stations in ports for the needs of LNG-fuelled ships.	- the growing number of electric vehicles may consequently contribute to a decline in demand for traditional fuels, especially gasoline - the need to incur costs related to the construction of the new infrastructure	+ development of the electromobility segment creates opportunities related to the offering of charging services and development of non-fuel business (longer charging time for electric vehicles in relation to combustion engine cars means more time spent by customers in the station's commercial space) + development of the alternative fuels market and earning revenues from the sale of these fuels (electricity, hydrogen, CNG/LNG gas)	Investments in projects related to the alternative fuels infrastructure, e.g. construction of fast charging networks: LOTOS Blue Route and Pure H2 hydrogen filling stations. Monitoring and active participation in the legislative process (presenting results of analyses and positions, proposing regulatory solutions favorable to the LOTOS Group), both at the EU and national level.	MARGINAL	HIGH	HIGH

Revision of the EU ETS system

The planned amendments to the ETS system are aimed at accelerating the rate of growth of CO_2 emission allowance prices and, consequently, at stimulating greater investment in emission-free technologies.	- higher operating costs of Grupa LOTOS S.A. as a result of an increase in the price of emission allowances and a decrease in the number of free allowances	+ increased profitability of innovative decarbonization projects (e.g. Green H2)	Investments in projects improving energy efficiency and reducing CO_2 emissions, e.g. emission-free production of hydrogen in electrolysis process for refineries (LOTOS Green H2, Vetni project). Monitoring and active participation in the legislative process (presenting results of analyses and positions, proposing regulatory solutions favorable to the LOTOS Group), both at the EU and national level.	MOD ERATE	HIGH	HIGH

EU Hydrogen Strategy and legislative acts on the promotion of hydrogen use						
The strategy aims to identify barriers to increasing the production and use of clean hydrogen, define actions to remove these barriers, and support large-scale production and use of clean hydrogen, or the development of the hydrogen market and the necessary cost-efficient infrastructure. *Proposed legislation, comprehensively regulating the production and use of hydrogen in the economy should appear in 2021.*	- setting too strict criteria for considering energy for hydrogen production as renewable - the introduction of binding targets for the share of hydrogen, without adequate tools on the demand side	+ opportunity to enter the prospective green hydrogen market + opportunity to meet the (growing) targets imposed on Grupa LOTOS S.A. related to the share of renewable energy in transport + access to preferential financing models for hydrogen projects	Investments in projects related to zero emission production and use of hydrogen (LOTOS Green H2, Pure H2, Vetni). Monitoring and active participation in the legislative process (presenting results of analyses and positions, proposing regulatory solutions favorable to the LOTOS Group), both at the EU and national level	MARGINAL	MODERATE	HIGH
Introduction of a legislative package on sustainable financing (the so-called taxonomy)						
The legislative package introduces a general framework that will allow for gradual development of a classification system for environmentally sustainable business activities. This classification will be used to redirect capital flows from private market and EU programs to investments classified as climate sustainable	- increase in the costs of financing and possible difficulty in financing investments not qualified as sustainable ("green") - increase in the cost of insuring activities that do not conform to the taxonomy	+ preferential funding for projects that are consistent with the taxonomy, i.e. designed to reduce emissions, such as green hydrogen production, advanced alternative fuels, or renewable energy generation	Implementation of projects that are consistent with the taxonomy, i.e. designed, among other things, to reduce greenhouse gas emissions or increase the use of renewable energy. Monitoring and active participation in the legislative process (presenting results of analyses and positions, proposing regulatory solutions favorable to the LOTOS Group), both at the EU and national level	MODERATE	HIGH	VERY HIGH

Fuel emission standards

A legislation package that sets emissions standards for light passenger cars and trucks, as well as emissions targets for new vehicles. The amendment requires new vehicles to reduce emissions by 100% by 2035, which means a de facto ban on the sale of internal combustion vehicles.	- indirect impact on the LOTOS Group through a decrease in demand for refinery products due to the growing number of zero-emission vehicles at the expense of those running on traditional fuels (if the proposed mechanisms prove to be effective)	+ increase in profitability and decrease in risk of transportation electrification and hydrogenization projects + competitive edge and a new source of revenue provided they have an adequate network of EV charging and hydrogen refueling stations (if the designed mechanisms prove successful)	Undertaking investment projects in the area of alternative fuels (EV charging and hydrogen refueling network) Monitoring and active participation in the legislative process (presenting results of analyses and positions, proposing reasonable regulatory solutions)	MAR GINA L	LOW	MODE RATE

Source: Company

13.3.4 Projects and initiatives that minimize the negative impact on the climate and environment

The LOTOS Group conducts research and development projects on environmentally friendly fuels of the future, i.e. electricity and gaseous fuels: CNG, i.e. compressed natural gas, and LNG, i.e. liquefied natural gas, and above all hydrogen, which can be used in transport as well as for energy production and storage.

The characteristics of the projects and initiatives are outlined below:

- RES at service stations

The LOTOS Group conducts analyses on the implementation of various technologies related to renewable energy sources (RES). The Company is primarily leaning towards developing projects to meet the National Indicative Target. The Company is also implementing solutions based on RES at its service stations.

- Biohydrogen

The LOTOS Group is also conducting conceptual work on hydrogen production. It involves not only steam reforming of natural gas, but also using renewable sources to produce hydrogen. One option is to use biogas as a feedstock for hydrogen production, which after purification produces biomethane with a composition similar to natural gas. The biohydrogen produced from biomethane will be able to be used as a self-contained hydrogen fuel in the future or as biohydrogen embedded in liquid fuel molecules and be a component of classic fuels. This project has great potential to meet EU targets for the use of advanced biocomponents and biofuels in Poland that do not carry the ILUC risk, as the feedstock would primarily be gas produced in biogas plants from agricultural or municipal waste, rather than raw materials used in the food industry.

The LOTOS Group will provide a comprehensive innovative IT-BIOGAZ Platform, which will enable the contracting of specific volumes of green fuels, including biogas and biohydrogen, ongoing supervision of the contracted installations' production processes, fuel sales and promotional and informational communication with the environment of potential technology suppliers, financing institutions or business partners. The internet auction platform will constitute an innovative business solution allowing the LOTOS Group to effectively acquire significant volumes of alternative fuels. In the auction and trading layer, the system will have functionalities similar to those used by the Capacity Market Users Platform.

- New generation fuels

As part of its strategy, the LOTOS Group aims to become a leader in the area of new-generation fuels. To make these plans a reality, it constantly initiates research and development activities in cooperation with the scientific community.

In 2021, the LOTOS Group continued to implement the Pure H2 project, which aims to build and commission infrastructure for the production and sale of high-purity (99.999%) hydrogen that meets the requirements of standards for hydrogen fuel intended to power fuel cells used in road transport. In Gdańsk, on the premises of the refinery, a hydrogen purification installation will be built to meet the relevant requirements. A pure hydrogen distribution station, i.e. an installation for filling the so-called battery trucks (vehicles for the transportation of compressed hydrogen) - will be built from scratch on the site of the current storage yard located in the immediate vicinity of the refinery at Benzynowa Street. In addition, the Pure H2 project also involves the construction of two installations for refueling vehicles at 350 bar (e.g. buses) and 700 bar (passenger vehicles). These installations will be built within the existing fuel stations owned by LOTOS Paliwa in Gdańsk and Warsaw.

LOTOS supports the construction of the hydrogen economy

The LOTOS Group is also active in the area of building awareness of hydrogen use. LOTOS participates in the Clean Transport Package and the Ministry of Climate's work on a national hydrogen strategy. In late 2021, the government adopted the "Polish Hydrogen Strategy until 2030 with an Outlook until 2040" which aims to create a Polish hydrogen industry and its development to achieve climate neutrality and maintain the competitiveness of the Polish economy.

The development of the hydrogen sector in the next decade may significantly contribute to the reduction of greenhouse gas emissions and other pollutants into the atmosphere by Poland, especially from the transport sector.

In addition, hydrogen use in district heating is expected to increase, thanks to the development of power-to-gas/liquid technology.

The hydrogen strategy sets goals up to 2030:

- Installed capacity of the installations for low-carbon hydrogen production: 50 MW by 2025 and 2 GW by 2030.
- Number of hydrogen stations: min. 32 by 2025; creating a Hydrogen Valleys Innovation Ecosystem.
- Developing a hydrogen legislative package in 2022 and 2023 - legislation that defines the details of how the market will operate, implements EU law in this area, and implements a system of incentives for low-carbon hydrogen production.
- In total, in the period 2021-2030, the necessary investment expenditures related to the implementation of hydrogen technologies in public transport together with the necessary infrastructure and achieving the assumed capacity of installations from low-emission sources at the level of 2GW will amount to approx. PLN 11 billion.

The LOTOS Group has launched an investment program to build a large-scale installation for the production of green hydrogen. According to the assumptions of the Green H2 project, hydrogen will be produced by electrolysis, i.e. breakdown of water using electricity. If renewable energy is used to produce it, such hydrogen will qualify as the so-called green hydrogen. The hydrogen produced will be used in refinery processes, making traditional petroleum-based fuels more environmentally friendly. At the same time, no greenhouse gases are produced in the electrolysis process. Green H2 will build a large-scale plant consisting of electrolyzers, hydrogen storage facilities and fuel cells. The whole system is to produce zero-emission hydrogen for the needs of the refinery and at the same time support the Polish power system. The first step in the program is a pilot project to create a smaller scale electrolysis plant. The installation so designed will be the target configuration for a large scale project.

The Company is also actively cooperating with Polish scientific institutions on projects to increase the efficiency of pure hydrogen production. In parallel, the Company submits applications for their financing under both national and EU competitions, including the National Center for Research and Development (NCBiR) and the National Reconstruction Plan.

At the end of September 2021 the LOTOS Group, in a consortium with the Institute of Energy and the AGH University of Science and Technology in Kraków, launched a new hydrogen project worth nearly PLN 10 million. Its aim is to construct a pilot plant in Jasło based on solid-oxide electrolyzers (SOE). The aim of the VETNI project is to develop a highly efficient plant based on solid-oxide electrolysers powered by electricity from renewable sources. These devices will enable high-purity, high-efficiency hydrogen production. The project will involve research and development work focused on the design, construction and testing under real operating conditions of a system with an electrolyzer integrated into the refinery process, which will supply process steam for hydrogen production. The electrolyzer's parameters will allow for production of approx. 16 kg of hydrogen with 99.999% purity per day, which will make it possible to refuel several hydrogen-powered cars.

The project perfectly fits into the assumptions of the "Polish Hydrogen Agreement" project. It is an expression of the will of public administration, representatives of business and science, and business environment entities to take joint efforts to develop the hydrogen economy in Poland. The agreement will be a key implementing instrument of the "Polish Hydrogen Strategy until 2030 with an Outlook until 2040".

- Hydrogen as a way to clean air in cities

"Hydrogenation" of public transportation is another challenge facing the Lotos Group. For several years LOTOS Group representatives have been regularly participating in working meetings with local carriers and supporting them in their preparations for the hydrogen transition. As part of the signed agreements, LOTOS will provide hydrogen and the related infrastructure for fuel cell vehicles in Gdynia, Wejherowo, Tczew and Rzeszów, among others. By 2024, hydrogen-powered buses are expected to hit the streets of these cities.

The LOTOS Group is also involved in the development of the Pomeranian Hydrogen Valley, which aims to introduce hydrogen for bus transport, rail transport and marine transport (short sea passenger transport - Tri-City - Hel connection). Thanks to the support of the LOTOS Group, a consortium of local governments from Pomerania has received 100% EU support for comprehensive consulting on the implementation of hydrogen vehicles in public transport. This alternative energy source is expected to help reduce air pollution caused by exhaust gas emissions from vehicles equipped with conventional engines, especially in urban agglomerations.

LOTOS Group SA has started activities aimed at building demand for the hydrogen for transportation purposes produced and planned to be produced at the new production facilities. Therefore, the LOTOS Group, together with PESA, has signed a framework agreement on cooperation in the implementation of investment and development projects and the development of commercial terms and conditions for hydrogen supply for the purposes of tenders for the supply of railroad hydrogen infrastructure and hydrogen supply to power trains, which are planned for the near future.

The cooperation of all participants of this value chain means real actions and influence on acceleration of the hydrogenization of transport in Poland.

13.3.5 Atmospheric emissions

/103-1/ /103-2/ /103-3/

The emission of gases to the atmosphere results from LOTOS Group's core activity. Therefore, minimizing the environmental impact is a priority for the Company. Consequently, LOTOS applies the best available techniques and practices to processes that result in air emissions. Direct GHG emissions from the LOTOS Group's installations (including those that do not participate in the emissions trading system) are determined based on the methodology set out in Commission Implementing Regulation (EU) 2018/2066. The amount of fuels burned or feedstock processed is multiplied by the appropriate calculation factors (calorific value, emission factor, oxidation factor), resulting in total greenhouse gas emissions. Indirect emissions are determined on the basis of the amount of electricity and heat purchased from outside the group, multiplied by the relevant emission factors, which are published periodically by the National Center for Emissions Balancing and Management.

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Reducing greenhouse gas emissions is an important part of the group's operations. The reduction of CO_2 emissions in 2021 was achieved thanks to pro-efficiency measures carried out in the LOTOS Group.

Table 50. **Reductions of greenhouse gas emissions by emissions type in metric tons of CO_2 equivalent**

Reduction of greenhouse gas emission by emission type — **in metric tons of CO_2 equivalent**

Grupa LOTOS	2021
Indirect (scope 1)	3,924
Indirect (scope 2)	0
Other indirect (scope 3)	0
Total	**3,924**

Source: LOTOS Asfalt Sp. z o.o.

LOTOS Group companies do not monitor emission reductions within Scope 3 GHG limits.

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Direct greenhouse gas emissions in the LOTOS Group (Scope 1)

Table 51. **Gross direct greenhouse gas emissions**

Gross direct greenhouse gas emissions in metric tons of CO_2 equivalent	2020	2021
CO2	2,090,947	2,050,620
CH4	0	0
N2O	0	0
HFC	0	1,806
PFC	0	0
SF6	0	0
NF3	0	0
Total	**2,090,948**	**2,052,426**

Source: LOTOS Asfalt Sp. z o.o.

Installations participating in the EU ETS (LOTOS Group, LOTOS Asfalt, Energobaltic) calculate emissions in accordance with the methodology set out in EU Regulation 2018/2066. The methodology is consistent with the GHG Protocol methodology in a vast majority of areas.

The other companies in the LOTOS Group calculated their direct emissions by multiplying the amount of fuel consumed in boilers, furnaces and generators by the emission factors published regularly by the National Center for Emissions Balancing and Management (KOBiZE).

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Table 52. **Gross indirect greenhouse gas emissions (Scope 2) calculated using the location-based method**

	2020	2021
Gross indirect greenhouse gas emissions (Scope 2) calculated using the location-based method in metric tons of CO_2 equivalent.	475,560	475,388

Source: LOTOS Asfalt Sp. z o.o.

Only electricity and heat purchased and consumed within the group were taken into account for the calculation. Indirect emissions were calculated by multiplying the electricity and heat purchased and consumed by the factors published periodically by the National Center for Emissions Balancing and Management.

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Table 53. **Greenhouse gas intensity 2020 and 2021**

Grupa LOTOS		2020	2021
Greenhouse gas emissions (scope 1+2) per ton of oil processed	Mg CO_2e /Mg	0.220	0.219
Greenhouse gas emissions (scope 1+2) according to the CWT methodology	kg CO_2e /CWT	27.3	28.2

Source: LOTOS Asfalt Sp. z o.o.

/OG6/

Table 54. **Volume of hydrocarbons flared in the open air and released to the atmosphere in the LOTOS Group [thousand m3].**

	Volume of gases directed for combustion [thousand m^3]	Volume of gases released to the atmosphere [thousand m^3]

Location	2020	2021	2020	2021
Poland	17,564	13,142	0	0
International waters, Poland's Exclusive Economic Zone(LOTOS Petrobaltic platform and BB Platform)	17,087	10,203	0	0
Lithuania	164	-	0	-
Total	**34,815**	**23,345**	**0**	**0**

Source: LOTOS Asfalt Sp. z o.o.

Other air emissions (other than greenhouse gases)

Data on the emissions of other substances to the atmosphere are reported at the consolidated level, i.e. the entire LOTOS Group.

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Table 55. **Emissions of other substances to the atmosphere in the LOTOS Group**

Air emissions Volume (t)	2020	2021
Nitrogen oxides (NO_X)	1,029.41	1,088.95
Sulfur oxides (SO_X)	998.51	1,109.70
Volatile organic compounds	154.94	93.87
Particulate matter (PM)	37.88	42.14
Other categories - CO	249.98	222.79
Metals	0.17	
Total	**2,470.90**	**2,557.45**

Source: LOTOS Asfalt Sp. z o.o.

LOTOS Group companies emit gases and dust into the air in connection with a wide range of activities. Under national regulatory requirements, companies that emit the most energy pollutants conduct measurements - either continuously or periodically. Continuous measurements allow emissions to be calculated directly from the signals transmitted continuously from the measuring equipment. The emissions measured during periodic measurements are related to the fuel consumed during the measurements and from this, coefficients are determined that are used to calculate the emissions for the rest of the year. Companies that do not conduct measurements emit pollutants into the air most often through the operation of boilers.

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In 2021 emissions of substances that deplete the ozone layer (ODS or HCFC) in the LOTOS Group amounted to 569.9 kg.

13.3.6 Energy generation and consumption

/103-1/ /103-2/ /103-3/

After purchasing the raw material, the cost of energy is the second highest variable cost in the refining industry. Therefore, continuous optimization of energy costs of crude oil processing and improvement of energy efficiency of production facilities is an important aspect of managing refinery operations. Due to market and environmental factors, optimization of energy consumption is becoming increasingly important. Therefore, a specially established unit within the organization - Energy Efficiency Department, together with the production plants and process engineers, focus primarily on searching for and implementing measures to improve the energy efficiency of the production installations, which also translates into the possibility of obtaining white certificates, i.e. energy efficiency certificates issued by the Energy Regulatory Office. This measure reduces environmental costs incurred by the refinery.

In 2021, 23 optimizations were identified and implemented. The effect of implementing 22 optimizations from 2020 was maintained. It is also worth noting that once again the LOTOS Group refinery was ranked among the most energy efficient refineries in the region according to the Solomon Associates ranking. This ranking lists refineries around the world and evaluates their performance in many aspects such as technology, and costs of energy and operations.

The total energy consumption of the LOTOS Group in 2021 was 9 042 362,72 MWh.

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Thanks to the optimizations implemented at the LOTOS Group refinery installations, energy consumption of almost all energy carriers has been reduced (reduction calculated in relation to the base state - before optimization).

Table 56. **Energy reductions** achieved directly as a result of consumption reduction and energy efficiency initiatives in 2021

Energy reductions achieved directly as a result of consumption reduction and energy efficiency initiatives [MWh]	42 952

Source: LOTOS Asfalt Sp. z o.o.

Data on energy generation and consumption are reported only at the consolidated level, for the entire LOTOS Group.

Energy consumption reductions are for steam, electricity and process furnace fuel. The energy consumption reductions are a direct result of implementing 16 refinery optimization measures in 2021. Additionally, the effects of optimizations implemented in 2020 reported in the prior year were maintained.

Among the activities completed by the LOTOS Group in 2021, further optimization of steam consumption accounts for a large share. Eight of the 22 measures involved reducing steam demand for heating purposes (maintaining constant temperatures of agents and media) and processes (maintaining proper operation and flow of physical and chemical processes). One of the producers of the steam that powers the refinery's facilities is a combined heat and power plant. The reduction in steam consumption also translates into a reduction in fuel demand in the boilers of the cogeneration unit. Electricity is also an important medium in the optimization process. In this case, 9 of 22 measures involved restricting the operation of electrical equipment, mainly pumps and compressors.

The identified areas for improvement and implemented changes are continuously monitored and verified by the Energy Efficiency Department, which identifies significant potential for optimization of energy utilities. Care for environmental protection and reduction of utilities and equipment operating costs is achieved by searching for, testing and implementing optimization solutions.

In 2021, the organization received white certificates in the amount of 1,626 toe, from the post-completion measure - announcement under Article 15 of the Law on Energy Efficiency (Journal of Laws 2021, Item 468) reported to the ERO.

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Energy consumption within the organization

Table 57. **Total energy consumption** from non-renewable sources (from the purchased sources and own sources - generated within the organization's own operations) and types of fuels used

Total energy consumption from non-renewable sources (from the purchased sources and own sources - generated within the organization's own operations)	Consumption (MWh)	
	2020	2021
Coal	73,117.80	78,125.36
Natural gas	2,461,762.77	2 566 088,70
Diesel oil	28,084.56	33 293,33
Heating gas	4,129,895.06	3 395 573,05
Tail gas, special	1,106,442.82	958 011,35
Light fuel oil	16,472.05	72 886,11
LPG	8,131.08	9 523,33
Diesel	55,572.45	55 518,78
Refinery fuel oil	-	158 172,22
Gasoline	2,954.01	2 986,57
Total energy consumption	**7,882,432**	**7 357 278,81**

Source: LOTOS Asfalt Sp. z o.o.

Table 58. **Primary energy purchased from other entities**

Energy purchased from entities outside the LOTOS Group	MWh 2020	2021
Electricity	1,825,485.42	1 743 937,66
Thermal energy	27,345.48	24,673.04
Total consumption	**1,852,830.9**	**1 768 610,70**

Source: LOTOS Asfalt Sp. z o.o.

Table 59. **Energy sold to other entities**

Energy sold to entities outside the LOTOS Group:	MWh 2020	2021
Electricity	21,537.57	21 818,41
Steam	34,588.18	32,142.22
Heat (in water)	28,992.66	29,566.15
Total	**85,118.42**	**83 526,79**

Source: LOTOS Asfalt Sp. z o.o.

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Energy intensity ratios

The decrease in the energy intensity indicators was influenced in 2021 by the half-overhaul, which included 10+ Program installations, i.e. relatively new part of the refinery. Despite the cost optimization involving withdrawal of natural gas from the 250 and 270 hydrogen installations as of August 2021 (due to high natural gas prices) it was possible to reduce primary energy demand by 10%.

Table 60. **Energy intensity ratios in Grupa LOTOS**

Grupa LOTOS	*2020*	*2021*
Primary energy consumption per ton of crude oil processed in MWh/t	0.90	0.84
Primary energy consumption per ton of product in MWh/t	1.18	1.11

Source: LOTOS Asfalt Sp. z o.o.

13.3.7 Materials

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The Company's production and mining activities are conducted in accordance with environmental protection requirements. High-quality products are manufactured on the basis of minimizing the negative impact on the environment, also at the stage of their production. The development plans of the LOTOS Group include innovative technological projects that provide for rational utilization of natural resources. Raw material consumption is reported at the consolidated level, for the entire LOTOS Group.

Feedstock used in production processes

Table 61. **Volume of crude oil processing in the refinery in thousand tons**

	2020	2021
Volume of crude oil processing	10,197	9,914

Source: LOTOS Asfalt Sp. z o.o.

Other feedstock for refinery production.

Table 62. **Other feedstock for refinery production**

	2020		2021		Difference 2021-2020
	Quantity (t)	Share (%)	Quantity (t)	Share (%)	
Demineralised water	298,123	16.72%	276,335	14.05%	- 21,788.81
FAME (fatty acid methyl ester)	300,444	16.85%	319,077	16.22%	18,632.41
Diesel oils	75,822	4.25%	446,110	22.68%	370,288.09
ETBE (ethyl tert-butyl ether)	11,770	0.66%	1,543	0.08%	- 10,227.38
Ethanol	65,607	3.68%	69,651	3.54%	4,043.37
MTBE (methyl tert-butyl ether)	49,880	2.80%	48,201	2.45%	- 1,679.08
Natural gas	350,823	19.68%	295,124	15.00%	- 55,698.64
Additives	3,037	0.17%	2,973	0.15%	- 63.55
LPG - EFRA component	20,406	1.14%	19,781	1.01%	- 625.68
off-spec LPG - EFRA	1,069	0.06%	335	0.02%	- 734.25
pyrolysis gasoline - EFRA component	98,293	5.51%	85,154	4.33%	- 13,138.52

off-spec pyrolysis gasoline - EFRA	3,008	0.17%	1,418	0.07%	- 1,589.29
LCGO - EFRA	240,837	13.51%	192,982	9.81%	- 47,855.05
HCGO - EFRA	171,266	9.61%	147,087	7.48%	- 24,179.46
Other	92,393	5.18%	61,223	3.11%	- 31,170.20
Total	**1,782,779**	**100.00%**	**1,966,993**	**100.00%**	**184,214**

Source: LOTOS Asfalt Sp. z o.o.

Consumption of materials and raw materials within the refinery.

Table 63. **Other feedstock for refinery production**

Refinery's internal consumption	2020		2021		Difference 2021-2020
	Quantity (t)	Share (%)	Quantity (t)	Share (%)	
Fuel gas	353,085	39.90%	316,916	37.41%	- 36,169.06
Tail gas	423,496	47.86%	404,389	47.73%	- 19,106.87
Fuel oil	422	0.05%	13,566	1.60%	13,143.16
Other	107,885	12.19%	112,297	13.26%	4,411.74
Total	**884,888**	100.00%	**847,167**	100.00%	-37,721

Source: LOTOS Asfalt Sp. z o.o.

Consumption of finished products

Table 64. **Consumption of finished products**

Finished products	2020		2021		Difference 2021-2020
	Quantity (t)	Share (%)	Quantity (t)	Share (%)	
Gasoline (including reformates)	1,587,760.18	14.25%	1,491,267.10	13.58%	- 96,493.08
Kerosene	567,401.48	5.09%	450,106.97	4.10%	- 117,294.51
Xylenes	81,105.55	0.73%	51,466.02	0.47%	- 29,639.53
Diesel oil	5,755,433.86	51.67%	5,972,002.99	54.38%	216,569.14
Diesel oil	234,978.40	2.11%	266,767.57	2.43%	31,789.18
Fuel oil	184,596.40	1.66%	129,701.36	1.18%	- 54,895.04
MGO fuel	74,108.04	0.67%	74,390.58	0.68%	282.54
Jet fuel	217,224.64	1.95%	341,366.96	3.11%	124,142.32
Bitumen components	811,917.53	7.29%	759,163.93	6.91%	- 52,753.60
LPG	205,123.38	1.84%	219,057.84	1.99%	13,934.46
Base oils	262,194.42	2.35%	259,472.90	2.36%	- 2,721.52
Slack waxes	60,637.54	0.54%	39,678.33	0.36%	- 20,959.21
Plasticizers	24,808.76	0.22%	24,479.89	0.22%	- 328.87
Sulfur	111,211.72	1.00%	107,321.35	0.98%	- 3,890.37
Fuel raw material from EFRA	869,161.50	7.80%	712,256.83	6.49%	- 56,904.66
Others, including fuel gas sold to L. Asfalt	90,963.03	0.82%	84,311.72	0.77%	- 6,651.31
Total	**11,138,626**	**100.00%**	**10,982,812**	**98.60%**	**-155,814**

Source: LOTOS Asfalt Sp. z o.o.

13.3.8 Waste

/103-1/ /103-2/ /103-3/ */306-3/*

The Company has been managing waste in the most environmentally beneficial way for years. It prefers waste management methods such as recycling and recovery and limits less environmentally friendly methods such as incineration without energy recovery, landfilling and other forms of disposal.

In LOTOS Group companies, waste management is carried out in accordance with the circular economy concept. LOTOS companies prepare annual reports delivered to the Marshall of the Pomorskie Voivodeship and the National Center for Emissions Balancing and Management (KOBIZE).

In the case of LOTOS Group, these are waste handling issues. The refinery generates a small amount of petroleum waste. Waste from wastewater treatment plants (sediment and sludge) and waste from water decarbonization is generated in by far the largest quantities. The Company does not manage this waste on its own. It transfers it to specialized and authorized external companies, which subject them to recovery and recycling processes.

Table 65.**Total volume of waste generated in 2021 [t]**

	LOTOS Group	
	2020	2021
Hazardous waste	11,150	13,054
Non-hazardous waste	9,338	10,307
Total volume of waste generated [t]	**20,488**	**23,361**

Source: LOTOS Asfalt Sp. z o.o.

The data presented is a summary of the waste volumes generated by all refinery production facilities in 2021. The on the volume of generated waste was obtained from the records of generated waste in the BDO register. In accordance with the waste management hierarchy at LOTOS Asfalt/ GL S.A., in 2021, industrial waste, after its generation, has been transferred to authorized waste companies which, in accordance with relevant procedures, manage it using the R - recovery or D - disposal process. 99% of the refinery waste is recycled. The total volume of waste produced in 2021 is an aggregate value for GL S.A. and LOTOS Asfalt due to structural changes that have taken place since 02 November 2021.

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Drilling conducted within the mining segment in 2021.

- LOTOS Petrobaltic: branch of the B3/13C well was drilled (B3 field)
- LOTOS Norge: the company, as a concession partner, participated in the drilling of the following 4 wells: Liatarnet, Sleipner infill, Grefsenkolen and Ost Frigg.
- LOTOS Geonafta: no drilling in 2021.
- LUPS: no field operations, no drilling.

LOTOS Geonafta and LUPS did not drill and therefore did not generate any drilling waste in 2021.

13.3.9 Water and effluents

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The Company's use of water resources is based on water rights and integrated permits. The use of these resources does not significantly affect the functioning of protected and naturally valuable areas, and the amount of water withdrawn is kept well below the permissible amounts, which is confirmed by analyses of the impact of water withdrawal on the environment.

As required by its permits, the Company continuously monitors the impact on water resources in connection with water withdrawals and wastewater discharges - both in terms of quantity and quality. The LOTOS Group regularly reports to the authorities on its water usage. The Company also makes sure that as much as possible of the water used in production processes is reused. This ensures that the amount of water ultimately withdrawn from the environment is reduced.

LOTOS Group companies do not operate in areas at risk of water shortages (according to WWF Water Risk Filter).

The LOTOS Group refinery has its own waste water treatment plant, which receives wastewater from both the plant itself and from smaller companies operating in the area. In addition to the wastewater generated in production processes (the so-called process wastewater), the plant treats drainage water, clean rainwater (from roads and yards) and oily wastewater (from production areas), as well as sanitary wastewater.

After treatment water and wastewater are discharged through one of two discharges. Clean drainage and rainwater is discharged into the canal of the Rozwójka river flowing along the southern boundary of the plant. The remaining streams, i.e. process wastewater, oily wastewater and sanitary wastewater, after treatment, are discharged to the Martwa Wisła river running along the northern border of the plant.

The LOTOS Group monitors its impact on the condition of water purity by continuously controlling both the volume of water abstraction and checking the environmental parameters in the affected areas. Each project is conducted on the basis on a dialogue with the stakeholders, and no report or complaint remains unaddressed. Suppliers and contractors signing contracts with LOTOS Group companies undertake to act responsibly, lawfully and with respect for the environment. They are regularly audited from this perspective.

Each of the LOTOS Group's production plants is properly prepared for failures and spills.

Procedures are in place at the sites with the primary goal of preventing spills effectively and responding appropriately when necessary. This is also supported by the Chemical Rescue service, a specialist team operating within the LOTOS Group. Possible waste resulting from a spill (e.g. soil contaminated with oil substances) is transferred to specialized companies which deal with their management in accordance with the law.

Data on water usage and wastewater discharged are reported at the consolidated level, i.e. the entire LOTOS Group.

Continuous Emission Monitoring System (CEMS)

In 2020, the LOTOS Group formally completed a major expansion project of its Continuous Emission Monitoring System (CEMS). The system helps analyze the work of the refinery in processing different grades of crude oil. This allows the Group to see how different production regimes affect environmental emissions. Grupa LOTOS upgrades its infrastructure and enables remote work, thanks to which the Company's employees are able to monitor the refinery's operations with pinpoint accuracy.

Thanks to CEMS, employees have real-time access to information about the quality of wastewater flowing into the Martwa Wisła river. The condition of liquids is monitored for chemical oxygen demand (an indicator of water and wastewater pollution) and contents of total nitrogen, petroleum hydrocarbons, and total suspended solids.

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Table 66. **Water withdrawal and use by source and type in 2021**

Water withdrawal by source and type	From all areas (in megalitres)	
	2020	2021
Surface waters:	5,220	5,648
Low-mineralized water (total mineral content below 1000 mg/l)	5,220	5,648
Other water (total minerals above 1000 mg/l)	0	0
Groundwater:	329	333
Low-mineralized water (total mineral content below 1000 mg/l)	329	333
Other water (total minerals above 1000 mg/l)	0	0
Seawater:	393	725
Low-mineralized water (total mineral content below 1000 mg/l)	0	0
Other water (total minerals above 1000 mg/l)	393	725
Water produced:	414	234
Low-mineralized water (total mineral content below 1000 mg/l)	0	0
Other water (total minerals above 1000 mg/l)	414	234
Water from another organization:	299	384

Low-mineralized water (total mineral content below 1000 mg/l)	299	384
Other water (total minerals above 1000 mg/l)	0	0
Total water withdrawal from another organization	299	25
Total water withdrawal (surface water, groundwater, seawater, produced water, water from another organization)	**6,654**	**7,324**

Source: LOTOS Asfalt Sp. z o.o.

13.3.10 Biodiversity

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In the vicinity of the LOTOS Group refinery there is a Ptasi Raj nature reserve belonging to a Natura 2000 site "Ostoja w Ujściu Wisły" (PLH220044), therefore the Group's activities take into account its neighborhood and respect the existing ecosystem.

The area of the refinery is 235 ha and the reserve is 1015 ha. The most numerous group of birds in the reserve are different species of dabbling ducks and diving ducks, swans and white-fronted geese. The spit provides habitat primarily for various species of gulls, terns and plovers, as well as cormorants, ducks, geese and swans. Oystercatchers and plovers also nest in the reserve.

The environmental impact mitigation standards implemented by the Company allow it to take care of the safety of the neighboring nature reserve.

However, the concession areas held by LOTOS Petrobaltic, which specializes in exploration and production of oil and gas, are located outside the so-called Baltic Protected Areas and do not affect the biodiversity of the Baltic Sea.

One of the most important tasks as regards the LOTOS Group's activity in the Baltic Sea is the implementation of the best solutions in the field of environmental protection, thus maintaining the biodiversity of this region. LOTOS Petrobaltic strives to implement the already undertaken actions, consisting in the implementation of the assumptions of the Baltic Sea Action Plan, setting the "zero discharge" requirement for offshore platforms.

13.4 Social aspects

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13.4.1 People first

For the LOTOS Group, people always stand at the center. It is the people, the Company's stakeholders that influence how its economic as well as social and environmental value is produced. In making decisions, the Company respects these values and strives to build good and lasting relationships with its environment. Within the organization and in contacts with business partners or customers, the LOTOS Group cares about the safety and respect for human dignity. This applies both to LOTOS Group employees and those with whom the Company cooperates in operational and communication activities.

The quality of the relationship is a mutual benefit, which is why a fruitful dialogue with both the social and the market environment is so important.

The most important activities in this area include:

- systematic survey of customer and business partner satisfaction,
- regular exchange of information with capital market participants (using the Investor Relations service and during press conferences and meetings with analysts and investors),
- contacts with regulators and inspection and monitoring organizations, dialogue with employees beyond day-to-day work matters, and systematic
- discussions with the trade unions and the Workers' Council,
- regular measurement of job satisfaction among the employees.

13.4.2 Corporate social responsibility values

The Company's responsibility to society and the environment reflects the conduct of production activities with respect for the natural and social capital. The LOTOS Group takes responsibility for its products and respects the needs of all the Company's stakeholders: including: the state, the market, partners, customers and employees.

The four core values of LOTOS Group's social responsibility are:

- 1. Cleanliness

The Company is committed to the highest environmental and ecological standards and pledges ethical and fair competition, as well as prevents human rights violations.

- 2. Openness

It is open to change, the needs of the world and the expectations of people.

- 3. Innovativeness

It takes an innovative approach to solving social and environmental problems and, acting in accordance with the principles of sustainable development, gains business benefits and a competitive edge in the market.

- 4. Liability

It is the fundamental value of the Company. It concerns responsibility towards people, the environment, the country and its security.

The Company follows international standards, such as ISO 26000, in the area of organizational governance, human rights, labor practices, environment, fair operating practices, consumer issues, social engagement and local community development.

Strategic pillars of LOTOS Group's approach to sustainable development

The LOTOS Group operates in line with the challenges defined by the 17 Sustainable Development Goals (SDGs) until 2030, the Vision of Sustainable Development for Polish Business until 2050 and the 10 principles of the UN Global Compact.

In line with the vision of sustainable development for Polish business until 2050, the LOTOS Group has committed to:

- base its activities on broad cooperation, innovative thinking, and education of both employees and the public;
- conduct business based on trust and dialogue;
- undertake cooperation with academic centers and schools in the field of education of future employees;
- create conditions and opportunities for employees to grow;
- promote and support the implementation of new technological solutions;
- build infrastructure and make investments based on dialogue and in compliance with the principles of sustainable development;
- take action to reduce our negative impact on the environment; introduce solutions to reduce energy consumption, both in terms of implementing new technological solutions, process optimization and education;
- engage in dialogue with the government and share its experience on issues relevant to business and the economy;
- improve business ethics, including relationships with all stakeholder groups.

13.4.3 Employees

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13.4.3.1 Personnel policy

In LOTOS Group companies the issues related to the HR policy have been regulated in the internal sources of labor law (Company Collective Bargaining Agreements, Labor Regulations, Remuneration Regulations) and in procedures and instructions.

Each company implements its own procedures for HR management, which are reviewed by Grupa LOTOS S.A. The most common documents concern: recruitment and employment execution, adaptation program, training and development, organization of internships and apprenticeships, and termination of employment contracts. The common documents are: Code of Ethics, Policy for Prevention of Mobbing, Harassment and Discrimination in the LOTOS Group, Standards for Conducting Recruitment and Selection Process in the LOTOS Group, Principles of the Internal Labor Market in the LOTOS Group.

We assume the organization will develop through continuous improvement and leveraging employee potential. The basic assumption of the human resources management strategy is to treat employees as the most important capital of the company, hence the care for continuous development of their competencies and building commitment. The HR policy is pursued in a comprehensive and strategic manner. In its implementation we are guided by the principles of accessibility for employees, consistency of all systems and solutions, flexibility in relation to business needs and, above all, responsibility for the results of the work.

The Group monitors: staff fluctuation, departures, absenteeism, overtime, training costs and time, and effectiveness of recruitment processes.

HR processes are reviewed and evaluated during internal audits conducted by the Process Management Department and the Internal Audit Department, as well as by external units.

The Company implements the principles of diversity management and equal treatment policy, with respect for a diverse, multicultural society and places special emphasis on equal treatment based on gender, age, disability, health status, race, nationality, ethnic origin, religion, creed, irreligiousness, political belief, trade union membership, gender identity, family status, lifestyle, etc. Putting these principles into practice contributes to a fuller use of the employees' potential, their diverse skills, experiences and talents in an atmosphere of respect and cooperation.

Example - the so-called 50+ employees support new employees in adaptation processes, this relationship benefits both parties. 50+ employees bring experience, expertise, experience-based ideas, responsibility and commitment to the team. On the other hand, younger generations have a strong toolkit and a new, often out-of-the-box, approach. Hence, the opportunity for mentoring relationships and mutual benefits.

We apply the principles of equal treatment and diversity management in the workplace, starting with the recruitment process - we are a member of the Coalition for Friendly Recruitment, through universal access to training and promotion, transparent remuneration system, flexible working hours allowing for reconciling work duties with private and family life, and protection against mobbing or discrimination.

13.4.3.2 Employment structure in the organization

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As at the end of 2021 the total number of employees employed on the basis of employment contracts was 5,472.

Table 67.**Total number of employees by contract type and gender**

	women	men	total
Type of employment contract:			
definite term	143	425	568
indefinite term	1,130	3,774	4904
Total number of full-time employees	**1,273**	**4,199**	**5,472**

Source: Company

Table 68. **Total number of employees by employment type and gender**

	women	men	total
full-time	1,250	4,166	**5,416**
part-time	23	33	**56**
Total	**1,273**	**4,199**	**5,472**

Source: Company

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Table 69. **Total number of new employee hires by gender and age**

	women	men	total
under 30 years old	**40**	115	155
30-50 years old	**78**	204	282
over 50 years old	**11**	52	63
Total	**129**	**371**	**500**
Employment rate	2%	7%	5%

Source: Company

Table 70. **Total number of employee departures by gender and age**

	women	men	total
under 30 years old	**10**	61	71
30-50 years old	**67**	204	271
over 50 years old	**28**	179	207
Total	**105**	**444**	**549**
Employee turnover rate	**2%**	8%	5%

Source: Company

13.4.3.3 Occupational health and safety

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Employee safety is a key issue for the LOTOS Group. Worker health and safety protection is a value that is placed at the forefront of the organization.

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According to the law, the LOTOS Group, as an employer with more than 250 employees, appoints an occupational health and safety committee as its advisory and opinion-making body. The committee consists of both employer's representatives, including OHS staff and a physician providing preventive health care, and employee representatives, i.e. trade unions. The committee is chaired by the employer's representative, the Employee Representation Officer. The task of the committee is to review working conditions, periodically assess the state of occupational health and safety, give opinions on measures taken by the employer to prevent accidents at work and occupational diseases, formulate proposals to improve working conditions and cooperate with the employer in the implementation of its obligations in the area of occupational health and safety. The meetings are held during business hours. In cases agreed upon with the Employer, the committee uses the expert studies and opinions of specialists from outside the work establishment, performed at the Employer's expense.

The LOTOS Group, in accordance with the provisions of law, is obliged to consult employees on all activities related to occupational health and safety, in particular those concerning changes in work organization and equipment of work stations, introduction of new technological processes and chemical substances and preparations if they may pose a threat to the health or life of employees, assessment of occupational risk occurring in the performance of specific tasks and informing employees thereof, allocation of personal protective equipment and protective clothing and footwear to employees, employee training on occupational health and safety.

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Occupational health and safety management systems cover all employees of the LOTOS Group and other persons performing temporary work on the premises of the Group's units.

All LOTOS Group employees as well as contractors' employees are subject to occupational safety management system.

The Group conducts occupational health and safety audits of external companies performing work on LOTOS Group's premises.

In 2021, external chemical audits were also conducted among external companies as part of the ongoing external chemical audit.

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The scope of activities carried out by the occupational health and safety service is based on the applicable laws in this respect. In order to identify and eliminate threats and minimize risks, the LOTOS Group applies a number of tools to improve this area, e.g. through OHS inspections and reviews, OHS training, direct talks with employees, and the incentive programs in place. Inspections of working conditions (thematic, ad hoc, checklist-based) are aimed at verifying the compliance of the actual working environment conditions with the OHS regulations and principles. On the basis of systematic inspections carried out in the LOTOS Group, i.a.: threats to employee's health and life which may result in accidents at work or occupational diseases are identified and assessed; particularly onerous positions and ergonomic irregularities are assessed; occupational health and safety conditions in the work premises are assessed; the causes of threats, shortcomings and irregularities are identified; and actions are taken to eliminate threats and irregularities and to reduce them. The OHS service systematically strengthens its competencies and qualifications through participation of its employees in dedicated training courses, benchmarking meetings and exchange of experience with other production plants. The education process of the OHS service is also supported by the LOTOS Group's employee training initiative, i.e. LOTOS Academy, as well as by projects and activities implemented by the OHS service for employees, e.g. as part of educational campaigns or OHS Days organized every year. The implementation of such additional above-standard preventive actions for employees, especially in new areas of safety, also contributes to further education and self-development of OHS employees.

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In the LOTOS Group, threats at the workplaces are systematically identified. The Group checks hazards such as, among others, noise, electromagnetic radiation, non-ionizing radiation, chemicals and mechanical vibration. If it is possible, the threats are eliminated. When the cost is too high to eliminate a hazard, the workplaces are organized and secured to reduce the impact of the hazards on the workers' health and safety.

An occupational risk assessment is conducted for LOTOS Group employees as well as for trainees, apprentices, new hires and contractors. Every employee, visitor or contractor is informed about the potential hazards in the LOTOS Group, receiving information on chemical and physical agents, hazard prevention methods, health requirements at the workplace or emergency response methods. This is exemplified by organizing training for subcontractors during maintenance shutdowns, where all of the aforementioned issues are discussed, as well as giving instructions on how to prepare a safe workstation. Additionally, each Company prepares additional health and safety training related to their job specifications.

In connection with the COVID-19 pandemic caused by the SARS-CoV-2 coronavirus, all employees are kept informed of the status of infections in the LOTOS Group as well as in individual Companies. The LOTOS Group observes the sanitary regime and recommends remote work (if there is a possibility of providing remote work at the given position).

Work-related hazardous situations are reported by employees is done in accordance with the relevant IMS procedure in force. The procedure describes how to report, analyze, handle and monitor hazardous situations for all company employees. Unsafe situations reported by employees are eliminated on an ongoing basis, and when they require in-depth analysis and appropriate human and financial resources, they are implemented as part of the so-called Working Conditions Improvement Plan. At the same time, Grupa LOTOS has in place the so-called Employees Incentive Scheme (the Incentive Scheme is also used by other Companies to report threats in their respective areas - these reports are analyzed and passed on to the relevant persons from the given Company). The aim of the Program is to promote the values resulting from the observance of the principles of occupational health and safety by awarding prizes to those who submit the most interesting works concerning the observance of the principles of occupational health and safety, in particular those reflecting the influence of safely performed work on its effect. Employees also report noticed hazardous situations and propose improvements that should be implemented at workplaces. As a result, they have a real impact on improving the working conditions. Employees are keep to report dangerous situations thanks to our incentive program and our engagement and motivation procedure. Information on this topic is provided to them during training sessions on broadly understood safety and health prevention.

The LOTOS Group Strategy for 2017-2022 includes, as one of its key strategic pillars, the goal "Strong team, consistent CSR and safety" and Initiative 5.3 - High Safety Culture accompanying the safety area. This is an expression of the Management Board's care for the safe working conditions of employees and emphasizes that work safety is a priority and a value in itself. This approach to the question of safety allows employees to walk away from a workstation in a situation that they believe threatens health or could cause an injury. Provisions concerning this employee's right can be found, among others, in the Risk Assessment Charts for all workstations and in occupational safety training procedures. Information about the employees' rights is also provided to them, among others, during OHS training.

The process of identifying risks is executed through the LOTOS Group's employees (employees willingly report hazards through the Incentive Program) and OHS department employees (specialists, inspectors, process safety engineers). Threats are eliminated on an ongoing basis. If they require financial expenditures, they are reported to the Working Conditions Improvement Plan (PPWP), and appropriate preventive measures are taken. In order to improve the occupational health and safety management system in the LOTOS Group, work is under way to improve the communication of occupational health and safety employees of LOTOS Group companies through systematic meetings and the involvement of the Companies' employees in the Incentive Program and the organization of OHS Days.

A hierarchy of controls is a system of rules aimed at improving occupational health and safety, eliminating hazards and minimizing risks. By clearly articulating how to respond, employees can control potential threats. Each control in the hierarchy is considered less effective than the previous one. The priority is to eliminate the hazard, which is the most effective way to control the risk.

The International Labour Organization (ILO) Guidelines on Occupational Health and Safety Management Systems 2001 I ISO 45001: 2018 list the following preventive and protective measures in the following order of priority:

- eliminate the hazard/risk;
- replace the hazard/risk with less hazardous processes, operations, materials or equipment;
- control the hazard/risk at source, through the use of engineering controls or organizational measures;
- minimize the hazard/risk by the design of safe work systems, which include administrative control measures;
- where residual hazards/risks cannot be controlled by collective measures, the employer should provide for appropriate personal protective equipment, including clothing, at no cost, and should implement measures to ensure its use and maintenance.

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One of the key elements contributing to safety in the workplace is a responsible and fully aware employee. Therefore, the LOTOS Group places great emphasis on preventive and informative measures. The Company organizes training and implements preventive programs aiming at minimizing the effects of diseases among the company employees. Employees, trainees and apprentices receive initial OHS training in accordance with the content and subject matter specified in the training programs.

Initial and periodic training

Employees of the LOTOS Group, regardless of their position and type of work, receive introductory initial and periodic training. During the periodic occupational health and safety training, in addition to a theoretical course, they also participate in practical firefighting drills using firefighting equipment (fire training simulator) and first aid drills. Depending on the professional group, employees undergo periodic training in the form of e-learning (administrative, engineering and technical, and managerial groups). Periodic OHS training sessions for a specific worker group, as required by law, are conducted in a stationary form. Since the majority of workers in blue-collar positions perform particularly hazardous work, this training is done annually. The system of employee occupational safety training involves not only compulsory OHS training required under the law.

Fire training simulator

In order to improve practical skills and increase safety of practical exercises in the use of fire extinguishers and firefighting, a fire training simulator is used. The device has a remote flame control function and a system of continuous replenishment of extinguisher simulators, which greatly improves the performance of training. The fire simulated by the device is more realistic than in the older version of the simulator. In addition, thanks to the mock-ups it is possible to simulate engine, bookcase, monitor, wood and trashcan fires.

Safety and fire training During reserve days

Educating production employees during reserve "R" days is an important element of improving employee skills. Each cycle includes training on various topics, e.g. cross-channel, fire protection, use of scaffoldings (conducted by PIGR), confined spaces, effects of smoking (LUXMED), accidents at work during operation of pressurized and non-pressurized equipment (UDT), practical use of a defibrillator (EMERGENCY). During these meetings, the OHS service also conducts training on topics related to new standards of conduct at the LOTOS Group, implemented procedures, analysis of accidents at work or identified hazardous situations. The topics are selected as needed, including those indicated by the employees themselves.

Dedicated e-training

An e-learning platform has been launched for the employees of the LOTOS Group. Thanks to it employees have access to a range of mandatory as well as optional courses. As part of mandatory training, LOTOS Group employees were required to undergo instruction on the Golden Rules of Occupational health and safety implemented in the LOTOS Group, periodic OHS training, and safety culture training. As part of optional courses, employees have access to sessions on preventive health, stress or OHS when working remotely.

Risk analysis training for engineers associated with the production area

The training sessions were designed to systematize the knowledge of risk analysis methods for engineers who are associated with the production area (such as e.g. production coordination, process safety, occupational safety or risk management). This knowledge will allow for efficient and effective risk analysis.

Joint external and internal emergency plan exercises

Organized jointly by the Pomeranian Regional Headquarters of the State Fire Service and the LOTOS Group on the premises of the refinery in Gdańsk. During the exercises, various scenarios are implemented for dealing with the occurrence of an industrial breakdown.

Emergency response - practical exercises

Held systematically in the production area, with the participation of, among others, plant operations/crew, contractors, LOTOS Guard and LOTOS Security units. The exercises are aimed at practical verification of the knowledge and analysis of scenarios of possible emergency events, ways of proceeding and reacting in case of a potential threat e.g.: chemical spill and leak, fixed roof tank fire.

OHS training for contractors

Informing contractors through face-to-face or e-learning training on "General safety rules on the LOTOS Group premises" and "OHS rules for business partners during maintenance shutdowns". Due to the observed growing number of contractors (foreigners), e-training is prepared in five language versions. This facilitates communication and contributes to more effective training.

Other dedicated training

A number of additional training courses are provided to supplement knowledge. These include, among others, webinars on health prevention, work safety and organization, training for the first-aid rescuer team of the production division, training on the proper use of AED defibrillators available in Grupa Lotos S.A.

Out of concern for the health of their employees and to provide them with easy access to a wide range of medical services, Grupa LOTOS S.A. Group companies have established cooperation with LUX MED clinics, and PROMEDIS and Medycyna Rodzinna outpatient clinics. The medical service package is available to each employee who has a subscription which entitles them to free doctor appointments.

The value of the medical subscription paid for by the employer is added to the employee's income each month and is subject to taxation and deduction of social security contributions. The use of additional medical care is voluntary. There is also the possibility of medical cover for the employee's family.

As part of employee health prevention, the LOTOS Group organizes preventive events, such as OHS Days. The coronavirus pandemic left many people without access to health care and various types of tests, which is why the 12th OHS Days focused on health prevention. LOTOS Group employees had the opportunity to check their health by performing glucose, cholesterol, cancer markers, spirometry, bone density testing, mammography and ankle-brachial index (ABI) testing. Participants also took advantage of consultations with a physiotherapist and nutritionist and relaxed their tense muscles during office massages. In addition, the 2nd Refinery Run was held during the event. 151 participants tested their strength by running a 3.8 km course. 12th OHS Days also included webinars, workshops with a physiotherapist and a paramedic.

During this year's edition, participants also had the opportunity to meet a special guest, sailor Piotr Myszka, who gave a lecture entitled "The way to success and good habits".

In an effort to minimize the threat associated with the COVID-19 pandemic, Group companies refer their employees for Covid-19 diagnostic testing so that employees returning from isolation or quarantine feel safe and assured of a complete recovery.

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In accordance with the current Business Strategy, occupational health and safety protection for our own and our cooperating employees is one of the priorities of the LOTOS Group. Particularly high priority is given to activities aimed at maintaining a high level of safety, minimizing existing hazards, reducing accident incidence, preventing/mitigating significant adverse effects on health and safety in the workplace, which are directly related to the operations, products and services. We achieve these goals by, among other things, ensuring proper organization of the work environment and ergonomics at workstations, systematic performance of environmental surveys, application of the best possible collective and individual protection measures at workstations, application of the best possible process and technical protection measures (BAT), improvement of the hazard identification system and risk assessment in the man-machine-environment system, conducting systematic advisory, supervisory and controlling activities, organizing practical training courses and thematic workshops improving professional qualifications of employees as well as raising awareness and involvement of employees, all of which contribute to the growth of the occupational safety culture.

We treat Occupational Safety as an investment. By investing in people and property, we achieve benefits that translate into, among other things: improvement of working conditions, minimization of accidents at work, reduction of the value of safety indicators, reduction of costs related to accidents at work and occupational diseases, elimination of onerous, harmful and hazardous factors in the work environment, elimination of hazards and emerging irregularities, increased awareness and involvement of employees, improvement of employees' qualifications and skills, positive increase in employee satisfaction - "comfort of safe work", reduction of costs of running the company and disturbances at work, increased level of confidence of investors and insurers, as well as increased trust of employees in the employer, strengthening the image and value of the brand, positive influence on the company's reputation, reduction of exposure to criminal or civil lawsuits, possibility of comparing with the best (HSE leaders) in the refinery industry - "benchmarking".

Within the framework of specific corporate risks of the LOTOS Group, risks related to occupational safety as well as prevention of occupational diseases have been determined. The main risk concerns the occurrence of occupational diseases due to harmful factors in the working environment, resulting in loss of image and additional costs. This risk is estimated according to the adopted methodology, is subject to systematic monitoring, and a number of tasks are launched to mitigate it.

/403-9/

In 2021, there were 47 accidents in the LOTOS Group. All accidents were individual accidents. Most had to do with operating machinery and equipment and walking.

There were no serious, collective or fatal accidents among either GL S.A. employees or contractors in 2021. There were also no accident that led to serious injuries. All incidents were thoroughly analyzed to identify root causes and determine actions to eliminate them in the future.

/403-10/

In 2021, there were no new reports of suspected or recognized occupational disease among LOTOS Group employees.

13.4.3.4 Human rights in employee relations

/103-1/ /103-2/ /103-3/

The employer-employee relationship requires special care. The LOTOS Group places a strong emphasis on respecting human rights among its employees.

Values important to the organization have been enshrined in the LOTOS Group Code of Ethics.

From 2019, the protection of employee rights has been strengthened thanks to the "Policy for Prevention of Mobbing, Harassment and Discrimination in the LOTOS Group" adopted in the LOTOS Group. The document contains information on identification of unacceptable phenomena, as well as the mechanisms to be used in cases of irregularities that threaten such values as respect for human dignity, norms of social coexistence and the principles of mutual respect.

In accordance with the "Policy for Prevention of Mobbing, Harassment and Discrimination", irregularities should be reported to the Ethics Officer by selecting one of the available communication channels.

The Company is also planning training on how to correctly identify behaviors that have the features of mobbing, harassment and discrimination.

In 2021, the Ethics Officer reviewed 9 reported cases, 1 of which is still pending. No violations of the Code of Ethics were confirmed in the closed reports.

13.4.3.5 Diversity management

/103-1/ /103-2/ /103-3/

The LOTOS Group values diversity - it is an integral part of both its business activities and its hiring and promotion policy. We place special emphasis on equal treatment based on gender, age, disability, health status, race, nationality, ethnic origin, religion, creed, irreligiousness, political belief, trade union membership, gender identity, family status, lifestyle, etc.

The Company provides employees with equal opportunities for professional development and promotion regardless of skin color, religion, gender, age, nationality, sexual orientation, citizenship, marital status, family status, political views or disability. Internal documents issued apply to all employees, with no exclusions in this regard.

Verification of adherence to the diversity policy is not formalized; it is, for example, part of employee interviews during the annual employee evaluation and Stay Interview meetings with employees and their managers after 3 months of employment.

/405-1/

Management Board composition by age and gender, as at 31 December 2021.

Table 71. Percentage of employees belonging to management bodies

Breakdown by structure and age:			
Management Board	Women	Men	Total
under 30 years old	0%	0%	0%
30-50 years old	0%	20%	20%
over 50 years old	20%	60%	80%
TOTAL	20%	80%	100%
Supervisory Board	Women	Men	Total
under 30 years old	0%	0%	0%
30-50 years old	14%	29%	43%
over 50 years old	29%	29%	57%
TOTAL	43%	57%	100%

Source: Company

Table 72. Percentage of employees falling into the categories of senior management, middle management and other employees

Breakdown by structure and age:	Women	Men	Total
upper management			
under 30 years old	1%	1%	2%
30-50 years old	22%	50%	72%
over 50 years old	2%	25%	27%
TOTAL	25%	75%	100%
middle management			
under 30 years old	0%	0%	1%
30-50 years old	17%	48%	65%
over 50 years old	4%	30%	34%
TOTAL	22%	78%	100%
other employees			
under 30 years old	3%	10%	13%
30-50 years old	15%	44%	59%
over 50 years old	5%	23%	28%
TOTAL	24%	76%	100%

Source: Company

13.4.3.6 Remuneration and employee benefits

The Company's compensation system provides for:

- paying employees according to the type of work they perform and the qualifications and competencies required to perform that work,
-
- differentiating individual remuneration based on their performance,
- achieving the set goals and objectives at the expected level,
- rewarding employees for outstanding professional achievements resulting in significant, unexpected added value for the Company.

In addition to the base pay, employees are entitled to additional compensation calculated and paid in accordance with generally applicable provisions of labor law, i.e. for overtime and night work.

Employees may also receive an individual annual bonus according to the rules set forth in the internal sources of labor law and a special bonus for outstanding professional achievements. Once a year a periodic payroll review is conducted.

At the same time, the LOTOS Group cares for the professional development of its employees by offering individual training plans and providing promotions and career paths for employees with high development potential. Employees have the opportunity to:

- take advantage of medical and dental benefits for the employee and members of the employee's immediate family,
- take advantage of unit-linked group life insurance in the amount of the premium covered by the LOTOS Group for all employees,
- develop within the LOTOS Academy, which offers training, development programs, the culture of knowledge sharing, co-financing of studies and foreign language courses, and purchase of the MultiSport Card and OK System,
- take advantage of discounts at LOTOS service stations,
- participation in company sports clubs, including: volleyball, sailing, tennis, football, bowling, chess and LOTOS Running Team.

The scope of the fringe benefits for temporary employees (external employees hired under the Temporary Employment Act, e.g. in LOTOS Kolej) may vary.

In 2020, the ratio of the remuneration of the highest earning individual in the LOTOS Group to the median remuneration of the other employees was 7.4 and was 3% lower than in 2019, while in 2021 it was 6.8, 8% lower than in 2020. Salary disparity in the organization was steadily decreasing in 2019-2021, as evidenced by decreasing values of the pay equity and wage spread indices.

Table 73. **Equality and wage spread**

	2020	2021
Wage spread ratio	7.4	6.8
Pay equity ratio	19.67%	17.76%

Source: Company

Wage spread ratio is the ratio of the remuneration of the highest earning individual in the LOTOS Group to the median remuneration of the other employees.

Pay equity ratio is the percentage difference between the average monthly pay (including bonuses, awards and allowances) of women and men for a given year.

Table 74. **Employees by gender and job type**

Blue-collar positions	2020	2021
Women	68	65
Men	2,477	2,456

White-collar positions	2020	2021
Women	1,187	1,215
Men	1,741	1,736

Source: Company

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The compensation system is periodically reviewed on the basis of payroll reports of leading consulting companies and data of the Central Statistical Office (GUS). A new employee pay grade system has been implemented in 2019. As of 11 December 2019, Grupa LOTOS Group has an updated Collective Bargaining Agreement for Grupa LOTOS employees, which covers 100% of employees.

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Under the terms of their employment contracts employees have specific notice periods defined. These periods are also defined in the Labor Regulations and depend on the length of service - in accordance with the Labor Code. They may be more favorable as a result of negotiations with the Employer.

Employers maintain an ongoing dialogue with company trade union organizations and Works Councils. Also, they regularly inform employees of planned operational changes.

In most companies, internal sources of law specify the rules for determining the increment of the average monthly salary in agreement with the company trade union organizations.

/201-3/

LOTOS Group employees have the opportunity to build additional capital for retirement from contributions paid by the employer thanks to a unit-linked group life insurance. From 2019 the LOTOS Group has been implementing Employee Capital Schemes (ECSs).

13.4.3.7 Development and education

/103-1/ /103-2/ /103-3/

/404-2/

The development policy of the LOTOS Group is based on a systemic approach. Its purpose is to ensure the relevance of employee competencies to the requirements of the organization's strategy.

The development system is based on five main pillars: accessibility, consistency, accountability, relevance and diversity. Development is built into every employee's career. Every employee has access to training, the essence of which is consistency in employee development. The formula of multilateral training planning ensures relevance of the provided training to the actual needs of the organization, as well as symmetry and partnership in meeting the needs and objectives, which is important in the context of the importance of human resources. This applies both to the organization, relating the planned training to cascaded downstream strategies and sub-strategies, and to the employee.

Table 75.**Educational programs available to employees in 2021**

Name of program	Scope of program	Who were the recipients?
Open training	Training that meets the specific competency needs of individual employees	All employees
Closed training	Closed training responding to the specific competency needs of a given group of employees	Employees of a given functional area
LOTOS Academy Training Calendar	A program responding to the universal competency needs of all employees (IT competencies - MS Office, soft skills)	All employees

Implementation Doctorate Program	A program involving the implementation of a technological, constructional and design project, responding to a specific problem identified in the organization	All employees
LideRo Program	A program designed to provide holistic, cross-functional knowledge of all manufacturing processes (moving away from knowledge of just one, home manufacturing plant)	Production Division Employees
E-learning training courses	E-learning training courses (off-the-shelf and tailor-made)	All employees
Training courses and examinations	Training courses and examinations related to the acquisition of qualifications necessary for the job and required by law	Production Division employees and others
English	Subsidized English language learning on a course selected by the employee according to his/her preferences	All employees
eTutor	Learning English online	All employees
Upgrading qualifications in school forms and postgraduate studies	Educational subsidies - high school level, undergraduate, engineering, graduate and post-graduate programs	All employees
Lean Six Sigma training	Training path in Process Improvement Methodology and Building a Culture of Continuous Improvement	All employees
Training on simulators	Training to develop and maintain skills in operating production facilities - simulation of refinery processes	Production Division Employees
Management Development Program	Improving management competencies	Management staff

Source: Company

/404-1/

Table 76. **Average hours of training per employee**

Average hours of training per:	2020	2021
employee	10	14
women	13	18
men	9	13

Source: Company

Diversity of development forms is another hallmark of the organization's training policy. This allows the learning process to be tailored to the employee's individual cognitive preferences. The organization develops among its employees both industry-specific competencies - specific for the oil&gas industry, specialized ones - required for a given position, managerial, linguistic, as well as soft skills, enabling and catalyzing the use of hard competencies.

The main pillars of the training policy are:

- The LOTOS Academy and the program implemented under it: Training Calendar developing universal soft and IT competencies (MsOffice package) and development program dedicated to specific target groups, responding to identified, current business challenges
- Closed trainings addressed to the employees of the LOTOS Group, aggregating common training and development needs, including courses and exams related to acquiring the qualifications required by law (especially in the production area)
- Open training responding to specific, individual training and development needs of particular employees
- Subsidies for studies
- Subsidies for development of language skills. The competency development rules for GL employees are governed by Procedure: 62.01.00.00 Employee Training and Development and Directive DY/131/21/DN on ensuring the operation of uniform rules of conduct for the training and professional development of LOTOS Group employees.

The effectiveness of training and development activities undertaken is achieved through a systematic process approach. The training needs identification and analysis that begins the process precedes training planning. Implementation of training and development activities each time ends with training effectiveness assessment based on Kirkpatrick's model.

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In 2020, 91% of women and 97% of men out of all eligible LOTOS Group employees participated in the SOOP assessment.

In Grupa LOTOS S.A. the 2020 periodic evaluation process was carried out according to changed rules (different from the other companies of the LOTOS Group). Starting in 2020, for the first time, the employee evaluation is linked to the employee bonus system and replaces the previous Periodic Employee Evaluation System and the Quarterly Incentive Bonus.

The 2021 annual evaluation, in the form of a structured process, was conducted at two GKL companies (GL S.A. and LOTOS Oil). In the remaining companies, feedback is provided on an ongoing basis, including quarterly in connection with the performance evaluation process under the Quarterly Incentive Bonus.

A qualified, motivated and committed workforce that increases the organization's efficiency and gives it a competitive edge in the marketplace brings value to the entire organization. In order to attract it, we conduct the recruitment and selection of candidates in a transparent and objective manner, based on ethical standards derived from the Code of Best Practice. In addition, in order to standardize the recruitment process in the LOTOS Group, we have developed and apply "Standards for Conducting the Recruitment and Selection Process in the LOTOS Group" for those responsible for coordinating the staff selection process and managers who commission recruitment processes. As part of the LOTOS Academy project, we prepare managers who build development paths in their respective areas in a conscious and responsible manner, in accordance with the needs of the organization and the level of employee development. In 2021, we implemented a proprietary project entitled "Discovering the Power of Teams" using the Extended Disc (ED) tool. The aim of the project is to support managers and their teams in identifying the strengths and pointing out the individual potential of each member, support for teams forming in the conditions of remote work, employees struggling with a sense of isolation and loneliness, enabling them to better understand, more effectively motivate and engage, and thus more effectively achieve business objectives.

13.4.4 Relations with local communities

/103-1/ /103-2/ /103-3/

Corporate social responsibility is an element of management and improvement of the organization in Grupa LOTOS.

The Company builds lasting and positive relationships with its stakeholders and thus seeks to effectively integrate its strategy and actions with social and environmental challenges.

The whole LOTOS Group has a unified social policy which aims to achieve the objectives in the following three areas:

- improving the quality of life (health, road safety, education),
- care for the environment (ecology and environmental protection),
- innovation development.

The Company supports social initiatives and projects. Sponsorship activities focus on sports, culture and arts as well as social and environmental activities carried out mainly in districts and provinces where LOTOS Group plants are located and in places where it conducts its commercial operations, e.g. through its chain of service stations.

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All companies in the LOTOS Group are involved in activities for the benefit of local communities.

In 2021, LOTOS Group companies executed:

- 35 sports sponsorship projects,
- 32 cultural sponsorship projects,
- 22 social and environmental action projects.

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To build trust, the Company maintains a dialogue with its key stakeholders. Through active communication with its stakeholders, it seeks to mitigate the risks and nuisances associated with its day-to-day operations and actively respond to its stakeholders' needs. An example of the dialogue undertaken is the social consultations organized before the launch of important investment projects in the refinery.

The Company also attaches particular importance to projects focused on the development of young people, including equal social opportunities and counteracting exclusion among children and adolescents.

The activities of the LOTOS Foundation in this area are addressed to children and young people who grow up in the direct vicinity of its plants.

Activities for local communities

The relationship with the local communities living within the Company's catchment area is an important element of the LOTOS Group's social responsibility. Many of the group companies are actively working for the benefit of local communities.

Key social programs implemented in 2021:

- "Champions on the Road" is a multi-faceted program designed to educate and engage young drivers in efforts to improve road safety. The program has been implemented since 2020. Additionally, as regards road safety, in 2021 the LOTOS Group launched a new program "LOTOS - Safety Academy", aimed at school children and youth from Pomerania.
- Since 2008 the LOTOS Group has been implementing the "Direction Baltic" program with its partners: University of Gdańsk Development Foundation and the University of Gdańsk Marine Station in Hel. The Program carries out activities related to the protection of the Baltic Sea's biodiversity. In addition, a strong emphasis is placed on environmental education and dissemination of knowledge about the problem of plastic and microplastics in the Baltic Sea.
- Since 2013, the LOTOS Group has been a patron of the E(x)plory Program - Poland's largest initiative supporting talented young people in the implementation of innovative scientific projects and promoting their achievements in the international arena. It is a space that brings together young people, scientific authorities, start-ups and experienced companies, NGOs, media, Polish schools and the best universities, big cities and small towns. The main goal of the program is to popularize science among children and youth.

In each area, the Company works with recognized and proven social partners, in line with competencies and accepted values. In 2021, the LOTOS Group continued cooperation in social and sports projects addressed to children and youths. This mainly concerned football and the projects: "Football Future with LOTOS" and LOTOS Griffin Cup, winter sports - the program "LOTOS Looking for the Champion's Successors" with LOTOS Cup competitions. As part of the cooperation with the Polish Tennis Association, among others, the LOTOS Rackets National Tennis Popularization Program and LOTOS PZT Team, bringing together the best tennis players of the young generation from our country, were continued. In addition the LOTOS Group continued cooperation with 7 independent, promising athletes who have already achieved numerous successes. Among the athletes was Karolina Naja - kayaker, Olympic medalist, who won two medals at the 2021 Summer Olympics. Projects related to training children and youths are investments in young, ambitious and talented athletes who will be the future strength of the Polish sport. The LOTOS Group gives them opportunities and possibilities - it helps them succeed.

The corporate social responsibility policy is also implemented within the framework of the LOTOS Foundation, which supports initiatives in the area of education, safety and ecology. In 2021 Grupa LOTOS and the LOTOS Foundation have not been indifferent to the challenges posed by the coronavirus epidemic in Poland. We have contributed to the improvement of the health situation of Poles by donating funds for, among other things, additional equipment for medical facilities.

Employee volunteerism

In the LOTOS Group, employee volunteerism has been running for many years. We have a large group of socially committed employees. Staff volunteers provide community service using their time, knowledge and skills. Under the Employee Volunteerism Program, employees can, among other things, apply for funding for their original volunteerism projects.

In 2021, our volunteers participated in a variety of activities. Over 200 employees were involved in preparing Christmas parcels for children and seniors from poor families, as part of the annual initiative of the City Centre for Family Support in Gdańsk.

About 50 volunteers from LOTOS were involved in a nationwide Caritas campaign "Schoolbag Full of Smiles". Its purpose was to support children from needy families at the dawn of a new school year.

At the turn of November and December 2021, for the fourth time, the LOTOS Group organized the "Noble Parcel" campaign. Nearly 65 employees joined the initiative.

In 2021, 9 volunteerism projects involving 37 employees received mini-grants from the LOTOS Foundation in the fourth edition of the competition organized under the LOTOS Employee Volunteerism Program. Projects were implemented in 2021 and continued in 2022.

In 2021, a special bus for blood collection visited LOTOS Group's premises five times. 100 employees have signed up. More than 45 liters of blood were collected in total.

About 100 employees of the LOTOS Group took part in the collection for children's Hospice "Pomorze Dzieciom".

LOTOS Group companies are also very much involved in the activities for the local communities. Together with the residents of neighboring towns, they form a community that very often integrates business, local governments and higher education. Such initiatives bring long-term benefits to all participants in the relationship.

LOTOS Terminale

In 2021, a campaign entitled "Tree Bank" was carried out, in which LOTOS Terminale was a partner. A "Tree Bank" was established in Czechowice-Dziedzice. The municipality collected tree and shrub seedlings, which were given to property owners who wished to plant them on their properties. The idea behind the project is to increase the number of trees and shrubs in our community to reduce smog. There were 2 rounds of the campaign in 2021.

LOTOS Terminale was also invited as an expert to work on the preparation of a strategy for the city of Czechowice-Dziedzice until 2030.

LOTOS Kolej

2021 is the European Year of Rail, during which LOTOS Kolej, acting for the benefit of local communities, took part in various actions promoting and supporting the railways through, among others:

- active participation and substantive support of various crisis management exercises involving emergency services and state services,
- organization of another edition of the "Film the Railway with LOTOS Kolej" competition, which was addressed to people passionate about railways and photography,
- As part of its CSR activities, the Company also supports initiatives supporting young people who need help due to their health and financial situation.

LOTOS Paliwa

The Company organized a promotional campaign - "coffee and a hot dog for half price" at several stations located near the border for uniformed services serving there. It also took part in joint projects in which Grupa LOTOS is a partner, e.g. participation in LOTOS GDYNIA AEROBALTIC 2021.

LOTOS Asfalt

In 2021, LOTOS Asfalt continued the project relating to eco-friendly bitumens.

Energy savings, reduced noise and carbon footprint, water neutrality and full recyclability are just some of the benefits of the application of innovative bitumens. Gdańsk-based LOTOS Asfalt has been implementing eco-friendly products for road pavement construction for many years. Currently, together with the Gdańsk University of Technology, the Company is developing a bitumen that will help reduce smog in cities.

In November 2020, LOTOS Asfalt signed a contract with the National Center for Research and Development for the implementation of the project "Eco-friendly bitumens" worth over PLN 5 million. The project is implemented in consortium with the Gdańsk University of Technology. Its goal is to create a bitumen road surface that will reduce air pollution in the lane area. The technology used here is based on innovative hybrid photocatalysts that provide a higher reduction of NOx concentration in bitumen under the influence of solar radiation, and additionally enable degradation of carcinogenic organic compounds to simple and harmless inorganic compounds. Such a solution can improve the quality of life and contribute to the health of city residents in the future.

LOTOS Infrastruktura

In 2021, due to the epidemic situation, the Company implemented its budgeted cultural sponsorship on a limited scale by supporting two projects i.e.:

15th National Competition for Young Instrumentalists and Summer with Culture of the Jasło County.

The Company's activity in the area of supporting culture was awarded by the City of Jasło for its achievements in the field of culture by granting the title of "Patron of Culture 2021". Established in 2003, the award is given to representatives of the economic and business environment who support the culture of Jasło.

In 2021, Jasło continued the "Football Future with LOTOS" program for young players of the "Szóstka" Students' Sports Club. Approximately 70 children currently participate in the program.

In addition, since 2013, the Company has participated together with GL (now LOTOS Foundation) in the organization of a social project that has an educational and developmental nature entitled Jasło Science League with LOTOS. This project lasts throughout the school year and is carried out by children under the supervision of educators from primary schools in Jasło. Currently, the seventh edition of the program is in progress, with about 80 students from 10 primary schools in Jasło carrying out research projects. The 7th edition is scheduled to end in May 2022. The program is very well appreciated by the local community.

In 2021, the following Jasło institutions of significant importance for the local community received support from the LOTOS Foundation:

- Jasielski Sport Club 1910 Jasło - sport activities
- Familiaris" Association of Friends of the Youth Cultural Centre in Jasło - organization of the Children's Day
- Divine Mercy Roman Catholic Parish in Jasło - renovation of the church
- Town of Jasło - financial support for conservation works of the figural sculpture of St. Anthony of Padua with the Infant Jesus - patron of the town of Jasło

13.4.5 Engaging in countering the impact of the coronavirus pandemic

2021 was another year of the coronavirus pandemic, again full of challenges, both in business and social activities. In order to be able to provide customers with continuous access to its services in a safe and responsible manner, the Company has flexibly adapted its operations for a wide range of recipients: customers, business partners and other stakeholders from the local communities.

The Company allocated a total of over PLN 12 million to fight the pandemic and acquired and donated such personal protective equipment as: 500 thousand protective suits, 300 thousand visors and 100 thousand shoe protectors.

With the involvement of the LOTOS Group, a temporary hospital was arranged in the AMBEREXPO exhibition halls in Gdańsk. The facility admitted more than 800 patients in its first period of operation from March to June 2021.

13.4.6 Human rights in the value chain

At every stage of the supply chain, the LOTOS Group works with people. It is people who make the product, transport it or sell it. Consequently, respecting human rights is a natural responsibility of the Company. This commitment requires the Company to work only with legitimate companies and to conduct business in an environment with a legal system in place that regulates human rights issues.

LOTOS Group's business partners are obliged to observe commonly accepted system of values, respect their employees and treat them with dignity. Thanks to these principles, it is possible to create an ethical supply chain.

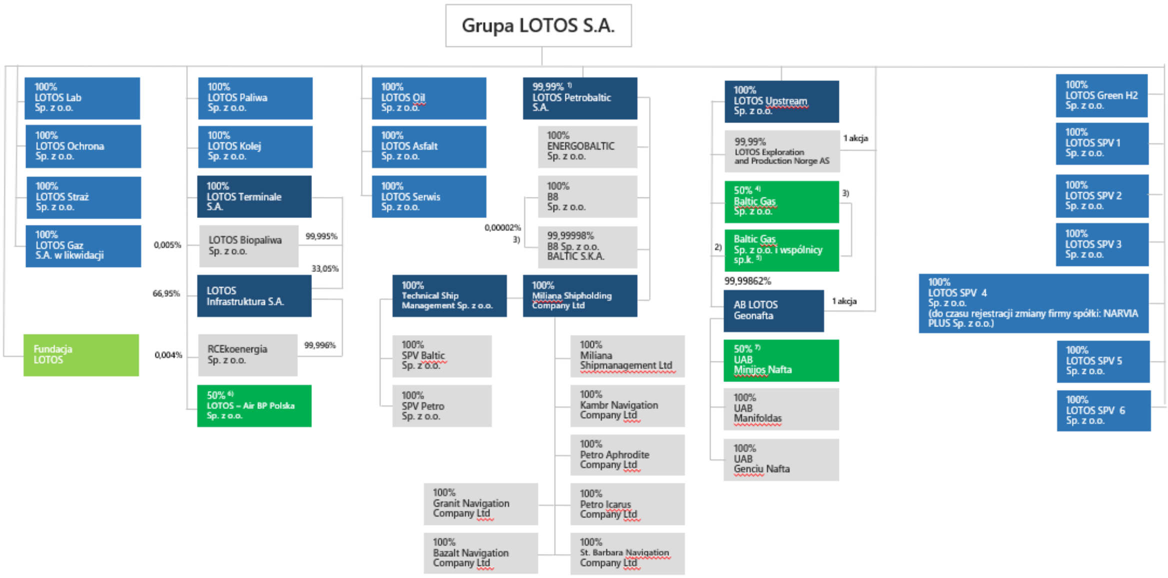
The LOTOS Group strives to ensure that all requests for proposals as part of the business partner selection process and contracts concluded with both new and existing suppliers, include corporate social responsibility (CSR) clauses relating to: OHS, rules and standards of conduct, ethics, no conflict of interest, anti-corruption, environmental protection, respect for human rights and social impact. The use of these clauses in the contracts signed by LOTOS Group companies is mandatory.

13.5 Corporate governance and ethics

13.5.1 Corporate Governance

/102-18/ /102-45/

Chart 8.**Structure of the LOTOS Group**
As at 31 December 2021



1) State Treasury - 0.01% 2) Limited partner 3) General partner
4) CalEnergy Resources Poland Sp. z o.o. – 50%
5) CalEnergy Resources Poland Sp. z o.o. – limited partner
6) BP Europa SE – 50%
7) Odin Energi A/S – 50%

Companies classified as joint ventures, not belonging to the LOTOS Group

In addition, Grupa LOTOS S.A. holds:
- 8.97% stake in the share capital of P.P.P. "Naftoport" Sp. z o.o. (a company belonging to the PERN Group from Płock)
- 17.3% stake in Grupa Azoty Polyolefins S.A.
Source: Company

Stock and shareholding structure

/102-18/ /102-19/ /102-24/

The powers of the Shareholder Meeting include a number of matters the scope of which is described in the Articles of Association of Grupa LOTOS.

All matters are submitted first to the Supervisory Board for review. The Regulations of Shareholder Meetings of Grupa LOTOS S.A. regulate the principles of convening and dismissing the Shareholder Meeting (as well as its course and the manner of holding Supervisory Board elections) and the rules of participation and exercising voting rights.

Supervisory Board

/102-18/ /102-22/ /102-28/ /405-1/

The Supervisory Board exercises permanent supervision over the activities of Grupa LOTOS S.A. in all areas of the Company's operations. The Board performs its duties collectively, but may appoint standing or ad hoc committees to oversee individual areas or to examine individual issues. The Supervisory Board standing committees are: Audit Committee, Strategy and Development Committee, and Organization and Management Committee. The Supervisory Board, based on the applicable laws, selects the auditor who is recommended to the material Group companies to audit their financial statements.

Composition of the Supervisory Board of Grupa LOTOS as at 31 December 2021:

- Beata Kozłowska-Chyła - Chairperson,
- Piotr Ciach - Deputy Chairperson,
- Katarzyna Lewandowska - Secretary,
- Dariusz Figura - Member,
- Katarzyna Maćkowska - Member,
- Grzegorz Rybicki - Member,
- Rafał Włodarski - Member.

Management Board

/102-18/ /102-20/ /102-22/ /102-23/ /405-1/

The Management Board represents Grupa LOTOS S.A. vis-a-vis third parties and manages all corporate matters of Grupa LOTOS S.A. In addition, individual Management Board Members carry out activities in accordance with the division of powers resulting from the operational functions entrusted to them in the Company. At the same time, each Management Board Member is entitled to represent the Company in all judicial and extrajudicial acts associated with the management of the Company's enterprise, except for acts reserved by the provisions of the Commercial Company Code or the Company's Articles of Association for the powers of the Shareholder Meeting or the Supervisory Board, or in matters which exceed the ordinary management of the enterprise, and which require a prior resolution of the Management Board or matters which are within the powers of another Management Board Member.

Composition of the Management Board of Grupa LOTOS as at 31 December 2021:

- Zofia Paryła – President of the Management Board;
- Krzysztof Nowicki – Vice-President of the Management Board, Mergers and Acquisitions;
- Piotr Walczak – Vice-President of the Management Board, Refining & Marketing;
- Jarosław Wittstock – Vice President of the Management Board, Corporate Affairs;
- Jarosław Wróbel – Vice-President of the Management Board, Investments and Innovations

Table 77. Areas of responsibility of Management Board Members

Division of areas of responsibility among Management Board Members of Grupa LOTOS S.A. as at 31 December 2021

President of the Management Board	Vice President of the Management Board, Chief Investment and Innovation Officer	Vice President of the Management Board, Chief Production and Trade	Vice President of the Management Board, Mergers and Acquisitions	Vice President of the Management Board, Corporate Affairs
Support for corporate bodies	Innovation	Domestic sales and purchases of products	Strategy	Organisation building
Human resources	Investments	Trading	Investor Relations	Process management
Physical security and protection	LNG and CNG business	Occupational health and safety	Mergers and acquisitions	Enterprise risk
Corporate supervision	Upstream support	Technology development	Purchases	Compliance
Finance and accounting		Feedstock purchases	Cesury Operation Centre	IT
Legal support		Logistics		Administration
Internal audit		Production and technological activity		
Communication				
Sponsorship and CSR				
Marketing				
Financial management				
Financial control				
Reporting				
Taxes				
Financial risks				
Financial control				

Source: Company

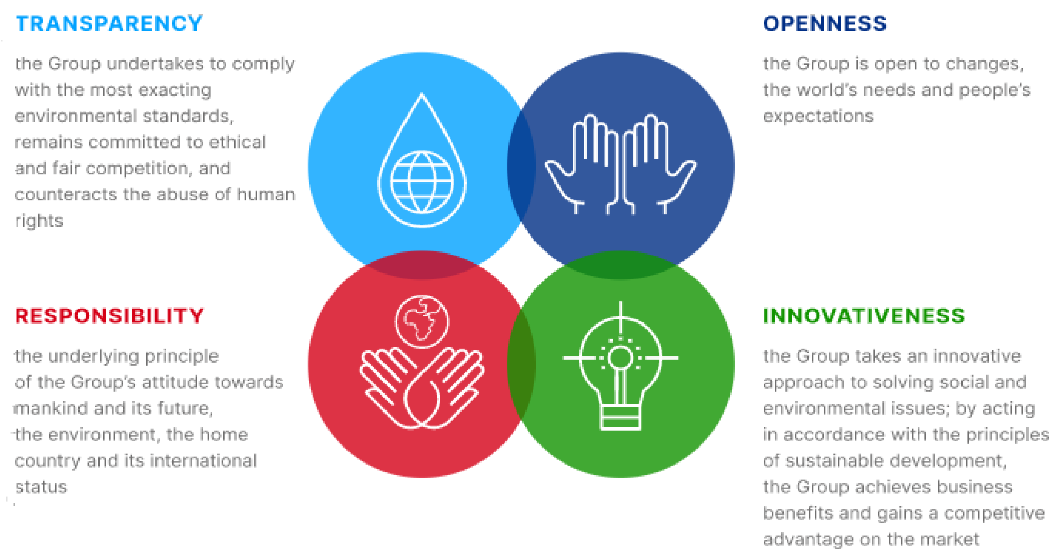
13.5.2 Ethics and combating corruption

/102-16/

Values and Code of Ethics

The LOTOS Group operates in an ethical manner, observing standards in all areas of its activity. The Company has adopted a value system that has respect for the needs of society and the natural environment at its core.

Chart 9. **LOTOS Group's four core social values:**



Source: Company

Ethics Program

The Ethics Program of the LOTOS Group enables effective and ethical management of the organizational culture. It is the foundation of the Group's operations which builds value for employees and external stakeholders.

The Ethics Program includes:

- Code of Ethics,
- Ethics Officer,
- code violation reporting channels,
- employee education,
- easy communication.

The Code of Ethics contains the principles and describes the Company's system of ethical values, which should guide employees in their work and in their relations with key stakeholder groups. Violations of the Code of Ethics are reported to and investigated by the Ethics Officer, who ensures compliance with the code in the LOTOS Group. The Ethics Officer is an instance that can be used by any employee and business partner of the LOTOS Group.

Those interested in contacting the Ethics Officer have such tools as:

- a face-to-face meeting at a time convenient to the employee, arranged in advance by telephone,
- phone call (phone number +48 58 308 89 20),
- sending an email to: → liniaetyki@grupaLOTOS.pl,
- completing a report form on the website: → www.lotos.pl,
- sending a letter with a report by regular mail.

The LOTOS Group operates in accordance with the Code of Best Practice of WSE Listed Companies. Respecting these principles makes it possible to build an ethical culture of the Company, which translates into shaping relationships with the market environment and is an important element in building the market position.

Preventing corruption, fraud and conflicts of interest

By effectively managing the risk of potential fraud in the LOTOS Group, the possibility of its occurrence is minimized. If any risk arises, immediate action is taken to immediately explain the situation, reduce the harmful effects of its occurrence, return the organization to the desired situation and eliminate the recurrence of similar events in the future.

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In 2021, no cases of corruption were identified in the LOTOS Group.

Stakeholders can report any instances of fraud or suspected irregularities and/or abuse through defined and shared communication channels.

Reports can be made through several channels:

- phone call or recorded message (phone number +48 504 181 048);
- sending an email to: zawiadomienia@grupalotos.pl;
- filling out a report form posted → on the website;
- sending a letter to the address: Head of the Internal Control Department, Grupa LOTOS S.A., ul. Elbląska 135, 80-718 Gdańsk, Poland.

Information received through the above channels is addressed directly to the Head of the Internal Control Department and is subject to clarification by way of an investigation or inspection. It is also possible to send notifications of suspected fraud to LOTOS Group employees via the intranet platform → www.lotostrada.pl in the sub-service "Fraud Prevention in the LOTOS Group".

In the LOTOS Group there is no tolerance for any kind of abuse. Among other things, the LOTOS Group is a member of the United Nations Global Compact Call to Action on Anti-Corruption, a global initiative uniting businesses in the fight against all forms of corruption. The Anti-Fraud Policy and other anti-corruption internal regulations are known to all employees of LOTOS Group companies. Each newly hired employee, as part of their training, receives, among other things, information on these regulations and the liability resulting from non-compliance. Additionally, they are reminded repeatedly throughout the course of the employment relationship.

In 2021 the Compliance Department designed and delivered a training course entitled "Compliance in the LOTOS Group" for the management staff of subsidiary companies (over 150 participants took part). Key internal regulations and draft laws relevant to the compliance system were discussed. In the third quarter of 2021, the Compliance Department, in cooperation with the Recruitment and Development Department, designed and implemented an e-learning training course covering the Principles of Granting Powers of Attorney at Grupa LOTOS S.A. The training was dedicated to over 700 employees of Grupa LOTOS S.A., including mandatory training for managers of organizational units. In the reporting period, the Compliance Department conducted extensive information and education activities based on articles published on the internal intranet.

Employee training

In the 2021 reporting year, the Internal Control Department prepared and implemented the "Anti-Corruption and Fraud" training on an e-learning platform. The purpose of the training was to acquire knowledge in the field of avoiding and counteracting fraud, including that of a corruptive nature, in particular to develop the ability to assertively respond to symptoms of corruption and corruptive situations and their negative consequences. The training was successfully completed by 1,184 employees of the LOTOS Group.

/205-2/

Table 78. **Percentage of employees who have received training in the organization's anti-corruption policies and procedures**

Percentage of members of the management bodies who:	Have been informed about anti-corruption policies and procedures	Have undergone anti-corruption training
percentage of employees who have been informed about the organization's anti-corruption policies and procedures and received anti-corruption training by employment type and age:	100%	20%
definite term	100%	25%
indefinite term	100%	21%
full-time	100%	21%

part-time	100%	4%
age under 30	100%	18%
age 30-50	100%	23%
Percentage of the organization's business partners who have been informed about anti-corruption policies and procedures of the organization	100%	

Source: Company

In 2021, there was no case that warranted a dismissal of a LOTOS Group employee because of corruption.

LOTOS Group's anti-corruption policies and procedures are contained on a publicly available website: https://tinyurl.com/3f6u9w2b. The site contains values and principles associated with working with the LOTOS Group's business partners (Code of Ethics, Anti-Fraud Policy).

/205-1/

In 2021, all LOTOS Group companies were assessed for the risk of corruption events.

Corruption risk is an element of fraud risk understood as a culpable action or omission that is in breach of laws or principles in place in the LOTOS Group, as a result of which a person who commits such an action obtains an unauthorized benefit, or which results in unjustified losses for the Company. Benefits and losses can be of financial, tangible or intangible nature.

/206-1/

Ethical conduct and compliance with the highest standards, in areas such as marketing communications, advertising, sales, and market presence, guaranteed safe and proper operations in 2021, and no legal action was taken against the Company for violations of the principles of free competition and monopolistic practices.

Due diligence procedures

In the LOTOS Group (depending on the Company's scope of activity and its needs) due diligence procedures are applied in accordance with prevailing standards and norms, within the framework of the implemented management systems:

(1) Code of Ethics of the LOTOS Group - the document describes the ethical principles Grupa LOTOS S.A. follows in its relations with its suppliers, shareholders, competitors and other participants of the capital market.

(2) LOTOS Group Anti-Fraud Policy - in order to ensure effective protection of the LOTOS Group's reputation and assets and to consistently increase the value of Grupa Lotos S.A., as well as to maintain a high level of the organization's resilience to fraud, the policy sets out a structured approach to the issue of fraud prevention.

(3) GLS.72.11.00.00. Principles of concluding transactions with related parties - the procedure is aimed at protecting the interests of Grupa LOTOS S.A. and its shareholders who are not related parties, including in particular minority shareholders.

(4) GLS.74.07.00.00. Principles of business partner verification - the procedure aims at reducing the risk of irregularities/abuse in business transactions resulting from dishonesty, unreliability or non-compliance with the law by business partners willing to cooperate, or cooperating with LOTOS Group companies.

(5) Procurement policy in the LOTOS Group - the policy aims at defining uniform rules in the area of planning, preparation and execution of procurement procedures i.e. equal treatment of bidders, competitiveness, transparency, impartiality etc.

(6) GLS.74.02.00.00. Purchases of goods and services - the procedure defines the principles for planning and executing purchase procedures by Grupa LOTOS S.A.

(7) GLS.72.02.00.00 Principles of concluding contracts by Grupa LOTOS S.A. - The procedure is aimed at ensuring uniform standards governing the preparation, conclusion, termination and archiving of contracts at Grupa LOTOS S.A., including the principle of recommending the use of CSR clauses in contracts with business partners.

(8) GLS.72.01.00.00. Principles of sales of Grupa LOTOS S.A.'s products and purchase of petroleum products from domestic entities - the procedure is aimed at ensuring efficient and effective principles of sales of Grupa LOTOS S.A.'s products and purchase of petroleum products from domestic entities.

In the LOTOS Group (depending on the Company's scope of activity and its needs) due diligence procedures are applied in accordance with prevailing standards and norms, within the framework of the implemented management systems:

- Best Practices for Companies Listed on the Warsaw Stock Exchange 2021
- PN-EN ISO 9001:2015 – Quality Management Systems;
- PN-EN ISO 14001:2015 – Environmental Management Systems;
- PN-ISO 45001:2018 – Occupational Health and Safety Management Systems;
- PN-EN ISO 27001:2017 – Information Security Management Systems;
- PN-EN ISO 22301:2014 – Business Continuity Management Systems;
- PN-EN ISO 50001:2018 – Energy Management Systems;
- PN-ISO 31000:2018 – Risk Management;
- Internal Control System;
- AQAP 2110 - NATO requirements for quality assurance in design, development and production.

On 1 July 2021, the Code of Best Practice for WSE Listed Companies 2021 came into force(Best Practices of WSE Listed Companies 2021). The Investor Relations Department, in cooperation with the Compliance Department, has made arrangements within the organization for the application of the respective new and amended rules. Grupa LOTOS S.A. informed investors about the application of Best Practices of WSE Listed Companies 2021 within the required deadline.

13.5.3 Ethical supply chain

Being aware of the impact of its activities on many social and environmental aspects, the LOTOS Group takes care of the whole supply chain, from exploration and exploitation of deposits, through production, to the sale of finished products and services.

The LOTOS Group supports value creation throughout the supply chain by:

- striving for efficient use of assets across the value chain,
- active management of opportunities and risks,
- developing technological innovations that increase competitiveness in the market,
- improving processes to ensure the safety of people and the environment.

In 2021, the risk management system reported no risks of incidents of forced or child labor and no risks of violations of the right to freedom of assembly or the assumptions of collective bargaining agreements in the supply chain. Analyses of these risks are carried out by the Group on the basis of available information and potential notifications in accordance with the adopted risk management principles.

/OG13/

The LOTOS Group recorded 13 process safety incidents in 2021.

Improvement activities implemented in 2021 to address substance release incidents:

In terms of the safety culture:

- Development of an e-learning course on "Operational Foundations of Process Safety",
- Communication on process safety on the intranet: publishing safety alerts and lessons.

In terms of risk analysis:

- Launch of the Hazop analysis of production facilities according to the schedule for 2021-2025.

In terms of EDC permit oversight (1 Tier 1 release and two Tier 3 releases):

- Continuation of supervision of EDC tasks and reviews of the effectiveness of risk control measures and operational conditions
- Update of the "EDC Solvent Handling Rules" manual
- Preparation and conduct of an EDC measurement campaign in the work environment

In terms of safe work practices:

- Commissioning of the process cut-off supervision system. Full implementation expected by the end of 2022
- Review of the labeling of pipelines on overpasses, sampling locations, and temporary chemical storage areas.
- Participation in a project implementing labeling on installations.
- Scheduled reviews of work permits and chemical storage sites

In terms of functional safety:

- Launch of a project to create base documentation for a Functional Safety Management System. The process consists of 4 stages: audit, schedule development (these two phases were completed in 2021), training of key personnel, and issuance of a base procedure for the Safety Management System.

13.6 Legal basis and scope of the document

13.6.1 Materiality of non-financial information

/102-44, 102-46, 102-47/

Table 79. **Significant aspects important to the Company and the environment included in the 2021 report.**

Topic	Company's perspective	Stakeholders' perspective
Financial performance	4.4	4.6
Preventing corruption (training, identification and resolution of possible incidents)	3.8	3.9
Activities for preventing unfair competition and anti-trust measures	3.8	3.8
Raw materials and consumables used by the company	4.1	3.8
Energy consumption, ways to reduce energy use	4.3	4.1
Water intake and consumption, information on waste water discharge	4.1	3.8
Greenhouse gas emissions and ways to reduce them	4.2	3.9
Activities preventing climate change (in a broader perspective, plans, strategies)	3.9	4.0
Environmental compliance	4.0	3.6
Information on waste and ways of waste management	4	3.7
Employment in the company (employee turnover, benefits)	4.2	4.4
Occupational health and safety	4.3	4.2
Employee training and education, and support	4.3	4.3
Diversity and equal opportunities for women and men with regard to access to positions and remuneration	4.1	3.5
Communication with employees (including the Management Board informing employees about issues important to the company)	4.3	4.4
Engagement of the local community in social activities carried out by the company	3.6	3.8
Company's activities for society, local market, infrastructure, etc.	3.7	3.9
Preparation for civil emergencies, including procedures and resources	4	4.1
Health and safety of clients	3.8	3.6

Source: Company

Additional information on the LOTOS Group's business activities, financial results and social and environmental activities is available at www.lotos.pl and www.odpowiedzialny.lotos.pl

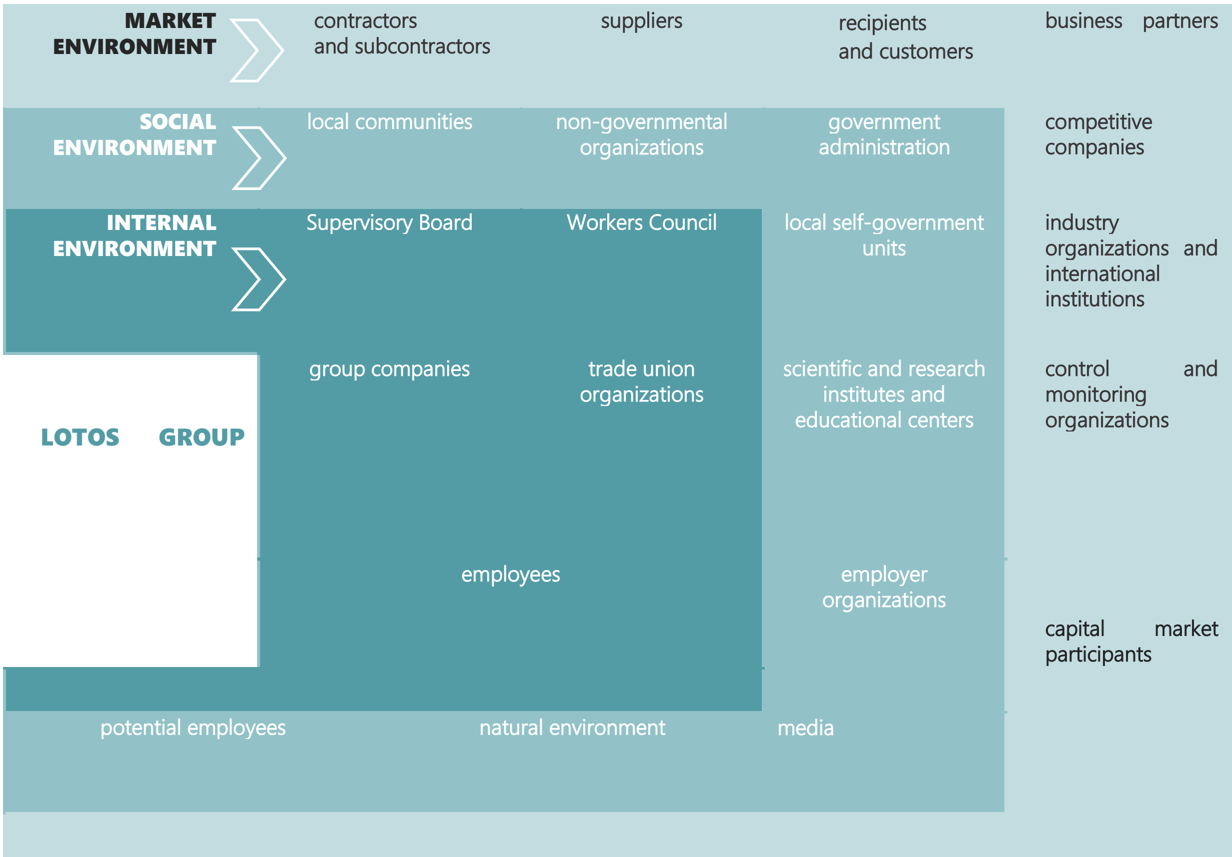
The report is available at: https://raportroczny.lotos.pl/.

To select the indicators, a materiality analysis was conducted taking into account both external and internal stakeholders' opinions. The analysis was conducted in February 2021. The statement includes topics of particular importance to the Company's environment. The Company's stakeholders completed online surveys. The survey made it possible to indicate topics that were particularly important to individual groups. The topics rated highest by the stakeholders were included in the content of the report. Nearly 200 representatives of employees, business partners, analysts, media, and research centers were invited to participate in the survey. Additional information on the LOTOS Group's business activities, financial results and social and environmental activities is available at www.lotos.pl and www.odpowiedzialny.lotos.pl

In addition, in 2022, the materiality analysis was carried out. At the time of preparation of this report, the analysis was still in development. Its results will be released when the Integrated Report is published online.

/102-40/

Map 10. LOTOS stakeholders



Source: Company

13.6.2 Report compliance

/102-48/ /102-49/ /102-54/ /102-56/ /103-1/

The non-financial statement was prepared in accordance with GRI Standards in the Core version and the Accounting Act (Article 49b and Article 55, sec. 2b-2e). The report also takes into account the Task Force on Climate-related Financial Disclosures (TCFD) guidelines on reporting environmental issues. No revisions were made to the content of previous reports in this report. The report has not been externally reviewed.

/102-50/ /102-51/ /102-52/

This report contains information for the period from 1 January to 31 December 2021. The previous non-financial statement of Grupa LOTOS and the LOTOS Group was published on 12 March 2021. The LOTOS Group prepares non-financial reports on an annual basis.

/102-3/

Correspondence should be addressed to the Company's principal office address:

Grupa LOTOS S.A., ul. Elbląska 135, 80-718 Gdańsk

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Questions can be sent to the External Communication Department of Grupa LOTOS S.A. at the following address: media@grupalotos.pl or by phone at: (58) 308 72 29.

Table 80. **Compliance with the Accounting Act**

Accounting Act requirement	Section
Business model (Article 49b sec. 2 item 1)	13.2.1.
Key Non-Financial Performance Indicators (Article 49b sec. 2 item 2)	13.1.
Policies in non-financial areas and their results (Article 49b sec. 2 item 3):	
- environment area	13.3.
- employee area	13.4.3.
- social area	13.4.
- human rights area	13.4.6.
- anti-corruption area	13.5.2.
Due diligence procedures (Article 49b sec. 2 item 4)	13.5.2.
Significant non-financial risks and how they are managed (Article 49b sec. 2 item 5)	13.5.3.

Source: Company

Table 81. **Compliance with TCFD Recommendations**

Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)	Section
CORPORATE GOVERNANCE	
Description of the management board's oversight of climate-related risks and opportunities.	Climate change strategy
Description of the management board's role in assessing and managing climate-related risks and opportunities.	Climate change strategy
STRATEGY	

Description of the climate-related risks and opportunities the organization has identified in the short, medium, and long term.	Opportunities and risks associated with climate change
Description of the impact of climate-related risks and opportunities on the organization's business operations, strategy and finances.	Opportunities and risks associated with climate change
Description of the resilience of the organization's business model and strategy under various climate-related scenarios (including a scenario that includes an increase in average temperatures of two degrees Celsius or less).	Issue not reported
RISK MANAGEMENT	
Description of processes for identifying and assessing climate-related risks.	Opportunities and risks associated with climate change
Description of processes for managing climate-related risks.	Opportunities and risks associated with climate change
Description of how the processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	Opportunities and risks associated with climate change
INDICATORS AND TARGETS	
Indicators used by the organization to assess climate-related risks and opportunities in accordance with its risk management strategy and processes.	Opportunities and risks associated with climate change
Scope 1, 2 and, if relevant, 3 greenhouse gas emissions and description of associated risks.	Atmospheric emissions (for Scope 1 and 2)
Description of the organization's stated objectives for managing climate-related risks and opportunities and the results of meeting those objectives.	Climate change strategy

Source: Company

/102-55/

Table 82. **GRI Index**

Indicator category	Indicator	Description	Section
GRI 102: General disclosures			
1. Organizational profile	102-1	Name of the organization	13.2.
	102-2	Activities, brands, products, and services	13.2.1. 13.2.2.
	102-3	Location of headquarters	13.2.2 13.6.2.
	102-4	Location of operations	13.2.1. 13.2.2.
	102-5	Ownership and legal form	13.2.
	102-6	Markets served	13.2.1. 13.2.2.
	102-7	Scale of the organization	13.2.1. 13.2.2.

Indicator category	Indicator	Description	Section
	102-8	Information on employees and other workers	13.4.3.2.
	102-9	Supply chain	13.2.4.
	102-10	Significant changes to the organization and its supply chain	13.2.4.
2. Strategy	102-14	Statement from senior decision-maker	13.2.5.
	102-15	Key impacts, risks, and opportunities	13.2.5.
3. Ethics and integrity	102-16	Values, principles, standards, and norms of behavior	13.5.2.
4. Governance	102-18	Governance structure	13.5.1.
	102-19	Delegating authority	13.5.1.
	102-20	Executive-level responsibility for economic, environmental, and social topics	13.5.1.
	102-22	Composition of the highest governance body and its committees	13.5.1.
	102-23	Chair of the highest governance body	13.5.1.
	102-24	Nominating and selecting the highest governance body	13.5.1.
	102-26	Role of highest governance body in setting purpose, values, and strategy	13.2.5.
	102-28	Evaluating the highest governance body's performance	13.5.1.
5. Stakeholder engagement	102-40	List of stakeholder groups	13.6.1.
	102-41	Percentage of all employees covered by collective bargaining agreements	13.4.3.6.
	102-43	Approach to stakeholder engagement	13.4. 13.4.4.
	102-44	Key topics and concerns raised	13.6.1.
6. Reporting practice	102-45	Entities included in the consolidated financial statements	13.5.1.
	102-46	Defining report content and topic boundaries	13.6.1.
	102-48	Restatements of information	13.6.2.
	102-49	Changes in reporting	13.6.2
	102-50	Period covered by report	13.6.2.
	102-51	Date of most recent report	13.6.2.
	102-52	Reporting cycle	13.6.2.
	102-53	Contact person	13.6.2
	102-54	Claims of reporting in accordance with the GRI Standards	13.6.2.
	102-55	GRI content index	13.6.2.
	102-56	External assurance	13.6.2.
Specific disclosures on material topics			
Economic aspects			

Indicator category	Indicator	Description	Section
GRI 201: Economic Performance			
GRI 103: Management Approach	103-1	Explanation of the material topic and its boundary	13.4.3.6.
	103-2	The management approach and its components	13.4.3.6.
	103-3	Evaluation of the management approach	13.4.3.6.
	201-3	Defined benefit plan obligations and other retirement plans	13.4.3.6.
GRI 203 Indirect economic impact	103-1	Explanation of the material topic and its boundary	13.2.
GRI 103: Management Approach	103-2	The management approach and its components	13.2.
	103-3	Evaluation of the management approach	13.2.
	203-2	Indirect Economic Impacts	13.2.
GRI 205: Anti-Corruption	103-1	Explanation of the material topic and its boundary	13.5.3.
GRI 103: Management Approach	103-2	The management approach and its components	13.5.3.
	103-3	Evaluation of the management approach	13.5.3.
	205-1	Operations assessed for risks related to corruption	13.5.3.
	205-2	Communication and training about anti-corruption policies and procedures	13.5.3.
	205-3	Confirmed incidents of corruption and actions taken	13.5.3.
GRI 206-1 Anti-Competitive Behavior	103-1	Explanation of the material topic and its boundary	13.5.3.
GRI 103: Management Approach	103-2	The management approach and its components	13.5.3.
	103-3	Evaluation of the management approach	13.5.3.
	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	13.5.3.
Ethical supply chain	103-1	Explanation of the material topic and its boundary	13.5.4.
GRI 103: Management Approach	103-2	The management approach and its components	13.5.4.
	103-3	Evaluation of the management approach	13.5.4.
Environmental aspects			
GRI 301 Materials	103-1	Explanation of the material topic and its boundary	13.3.7.
GRI 103: Management Approach	103-2	The management approach and its components	13.3.7.
	103-3	Evaluation of the management approach	13.3.7.

Indicator category	Indicator	Description	Section
	301-1	Materials used by weight or volume	13.3.7.
GRI 302 Energy	103-1	Explanation of the material topic and its boundary	13.3.6.
GRI 103: Management Approach	103-2	The management approach and its components	13.3.6.
	103-3	Evaluation of the management approach	13.3.6.
	302-1	Energy consumption within the organization	13.3.6.
	302-3	Energy intensity	13.3.6.
	302-4	Reduction of energy consumption	13.3.6.
GRI 303 Water and effluents			
GRI 103: Management Approach	103-1	Explanation of the material topic and its boundary	13.3.9.
	103-2	The management approach and its components	13.3.9.
	103-3	Evaluation of the management approach	13.3.9.
	303-1	Interactions with water as a shared resource	13.3.9.
	303-3	Water withdrawal	13.3.9.
	303-4	Water discharge	13.3.9.
GRI 304 Biodiversity	103-1	Explanation of the material topic and its boundary	13.3.10.
GRI 103: Management Approach	103-2	The management approach and its components	13.3.10.
	103-3	Evaluation of the management approach	13.3.10.
	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	13.3.10.
GRI 305 Emissions	103-1	Explanation of the material topic and its boundary	13.3.5.
GRI 103: Management Approach	103-2	The management approach and its components	13.3.5.
	103-3	Evaluation of the management approach	13.3.5.
	305-1	Direct (Scope 1) GHG emissions	13.3.5.
	305-2	Energy indirect (Scope 2) GHG emissions	13.3.5.
	305-4	GHG emissions intensity	13.3.5.
	305-5	Reduction of GHG emissions	13.3.5.
	305-6	Emissions of ozone-depleting substances (ODS)	13.3.5.
	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other	13.3.5.

Indicator category	Indicator	Description	Section
	OG6	Volume of hydrocarbons flared in the open air and released to the atmosphere	13.3.5.
GRI 306 Waste	103-1	Explanation of the material topic and its boundary	13.3.8.
GRI 103: Management Approach	103-2	The management approach and its components	13.3.8.
	103-3	Evaluation of the management approach	13.3.8.
	306-3	Waste generated	13.3.8.
	OG7	The amount of drilling waste (drilling fluid and drill cuttings) generated and how it is handled and disposed of	13.3.8
GRI 307 Environmental Compliance	103-1	Explanation of the material topic and its boundary	13.3.1.
GRI 103: Management Approach	103-2	The management approach and its components	13.3.1.
	103-3	Evaluation of the management approach	13.3.1.
	307-1	Non-compliance with environmental laws and regulations	13.3.1.
Social aspects			
GRI 401 Employment	103-1	Explanation of the material topic and its boundary	13.4.
GRI 103: Management Approach	103-2	The management approach and its components	13.4.
	103-3	Evaluation of the management approach	13.4.
	401-1	Total number and rate of new employee hires and rate of employee turnover by age group, gender and region	13.4.3.2.
GRI 402 Labor/Management Relations	103-1	Explanation of the material topic and its boundary	13.4.3.6.
GRI 103: Management Approach	103-2	The management approach and its components	13.4.3.6.
	103-3	Evaluation of the management approach	13.4.3.6.
	402-1	Minimum notice periods regarding operational changes	13.4.3.6.
GRI 403 OHS	103-1	Explanation of the material topic and its boundary	13.4.3.3.
GRI 103: Management Approach	103-2	The management approach and its components	13.4.3.3.
	103-3	Evaluation of the management approach	13.4.3.3.
	403-1	Occupational health and safety management system	13.4.3.3.
	403-2	Hazard identification, risk assessment, and incident investigation	13.4.3.3.

Indicator category	Indicator	Description	Section
	403-3	Occupational health services	13.4.3.3.
	403-4	Worker participation, consultation, and communication on occupational health and safety	13.4.3.3.
	403-5	Worker training on occupational health and safety	13.4.3.3.
	403-6	Promotion of worker health	13.4.3.3.
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	13.4.3.3.
	403-8	Workers covered by an occupational health and safety management system	13.4.3.3.
	403-9	Work-related injuries	13.4.3.3.
	403-10	Work-related ill health	13.4.3.3.
GRI 404 Training and Education	103-1	Explanation of the material topic and its boundary	13.4.3.7.
GRI 103: Management Approach	103-2	The management approach and its components	13.4.3.7.
	103-3	Evaluation of the management approach	13.4.3.7.
	404-1	Average hours of training hours per year per employee	13.4.3.7.
	404-2	Programs for upgrading employee skills and transition assistance programs	13.4.3.7.
	404-3	Percentage of employees receiving regular performance and career development reviews	13.4.3.7.
GRI 405 Diversity and Equal Opportunity	103-1	Explanation of the material topic and its boundary	13.4.3.5.
GRI 103: Management Approach	103-2	The management approach and its components	13.4.3.5.
	103-3	Evaluation of the management approach	13.4.3.5.
	405-1	Diversity of governance bodies and employees	13.5.1.
GRI 413 Local Communities	103-1	Explanation of the material topic and its boundary	13.4.4.
GRI 103: Management Approach	103-2	The management approach and its components	13.4.4.
	103-3	Evaluation of the management approach	13.4.4.
	413-1	Operations with local community engagement, impact assessments, and development programs	13.4.3.
GRI 416 Health and Safety of Clients	103-1	Explanation of the material topic and its boundary	13.2.2.
GRI 103: Management Approach	103-2	The management approach and its components	13.2.2.
	103-3	Evaluation of the management approach	13.2.2.

Indicator category	Indicator	Description	Section
	416-1	Assessment of the health and safety impacts of product and service categories	13.2.2.
Process-Related Security			
GRI 416: Customer Health and Safety	OG13	Number of process safety incidents, by type of activity	13.5.4