NOTES TO THE FINANCIAL STATEMENTS

1. General information

Grupa LOTOS Spółka Akcyjna ("Grupa LOTOS S.A.", the "Company", the "Parent"), was established on September 18th 1991. The Company's registered address is: ul. Elbląska 135, 80-718 Gdańsk, Poland.

The principal business activity of Grupa LOTOS S.A.'s Group (the "LOTOS Group" or the "Group") consists in the production and processing of refined petroleum products and their wholesale and retail sale. The Group's business also includes acquisition of crude oil and natural gas deposits and oil and gas production. Based on the classification applied by the Warsaw Stock Exchange, Grupa LOTOS S.A. is included in the fuel sector.

2. Composition of the Group and its changes

The LOTOS Group comprises: Grupa LOTOS S.A. (the Parent), a number of production, service and trading companies which are direct or indirect subsidiaries of Grupa LOTOS S.A., and the foundation.

Information on the registered addresses and business activities of the aforementioned entities, as well as on the Group's ownership interests in those entities, is presented below.

Name	Registered office	Business profile	The Group's ownership interest	
			Dec 31 2019	Dec 31 2018
Parent				
Refining and marketing segment				
• Grupa LOTOS S.A.	Gdańsk	Production and processing of refined petroleum products (mainly fuels) and their wholesale	Not applicable	Not applicable
Direct fully-consolidated subsidiaries				
Exploration and production segment				
• LOTOS Upstream Sp. z o.o. (parent of another group: LOTOS Upstream Group)	Gdańsk	Activities of head offices and holdings	100.00%	100.00%
• LOTOS Petrobaltic S.A. (parent of another group: LOTOS Petrobaltic Group)	Gdańsk	Acquisition of crude oil and natural gas deposits, extraction of hydrocarbons	99.99%	99.99%
Refining and marketing segment				
• LOTOS Paliwa Sp. z o.o.	Gdańsk	Wholesale and retail sale of fuels and light fuel oil, management of the LOTOS service station network	100.00%	100.00%
• LOTOS Oil Sp. z o.o.	Gdańsk	Manufacturing and sale of lubricating oils and lubricants, and sale of base oils	100.00%	100.00%
• LOTOS Asfalt Sp. z o.o.	Gdańsk	Production and sale of bitumens	100.00%	100.00%
• LOTOS Kolej Sp. z o.o.	Gdańsk	Railway transport	100.00%	100.00%
• LOTOS Serwis Sp. z o.o.	Gdańsk	Maintenance of mechanical and electric operations and controlling devices, overhaul and repair services	100.00%	100.00%
• LOTOS Lab Sp. z o.o. (parent of another group: LOTOS Lab Group)	Gdańsk	Laboratory testing	100.00%	100.00%
• LOTOS Straż Sp. z o.o.	Gdańsk	Fire service activities	100.00%	100.00%
• LOTOS Ochrona Sp. z o.o.	Gdańsk	Security services	100.00%	100.00%
• LOTOS Terminale S.A. (parent of another group: LOTOS Terminale Group)	Czechowice-Dziedzice	Storage and distribution of fuels	100.00%	100.00%
• LOTOS Infrastruktura S.A. (parent of another group: LOTOS Infrastruktura Group)	Jasło	Storage and distribution of fuels, renting and operating of own or leased real estate	100.00%	100.00%
• LOTOS Gaz S.A. w likwidacji (in liquidation)	Kraków	Dormant	100.00%	100.00%
Non-consolidated direct subsidiaries (1)				
• Infrastruktura Kolejowa Sp. z o.o. w likwidacji (in liquidation)	Gdańsk	Dormant	100.00%	100.00%
• LOTOS Foundation	Gdańsk	Public benefit activities within the scope of public tasks defined in the Act on Public Benefit and Volunteer Work. The Foundation does not conduct any business activity.	100.00%	100.00%

Name	Registered office	Business profile	Group's ownership interest	
			Dec 31 2019	Dec 31 2018
Indirect fully-consolidated subsidiaries				
Refining and marketing segment				
LOTOS Lab Group				
• LOTOS Vera Sp. z o.o.	Warsaw	Manufacture of cars	100.00%	100.00%
LOTOS Infrastruktura Group				
• RCEkoenergia Sp. z o.o.	Czechowice-Dziedzice	Production and distribution of electricity, heat and gas	100.00%	100.00%
LOTOS Terminale Group				
• LOTOS Biopaliwa Sp. z o.o.	Czechowice-Dziedzice	Production of fatty acid methyl esters (FAME)	100.00%	100.00%
Exploration and production segment				
LOTOS Upstream Group				
• LOTOS Exploration and Production Norge AS	Norway, Stavanger	Crude oil exploration and production on the Norwegian Continental Shelf, provision of services incidental to oil and gas exploration and production	100.00%	100.00%
• AB LOTOS Geonafta (parent of another group: AB LOTOS Geonafta Group)	Lithuania, Gargždai	Crude oil exploration and production, drilling services, and purchase and sale of crude oil	100.00%	100.00%
• UAB Genciu Nafta	Lithuania, Gargždai	Crude oil exploration and production	100.00%	100.00%
• UAB Manifoldas	Lithuania, Gargždai	Crude oil exploration and production	100.00%	100.00%
• LOTOS Upstream UK Ltd.	United Kingdom, London	Crude oil and gas exploration and production	100.00%	100.00%
LOTOS Petrobaltic Group				
• B8 Sp. z o.o.	Gdańsk	Support activities for extraction and quarrying operations	99.99%	99.99%
• B8 Spółka z ograniczoną odpowiedzialnością BALTIC S.K.A.	Gdańsk	Crude oil and gas exploration and production	99.99%	99.99%
• Miliana Shipholding Company Ltd. (parent of another group: Miliana Shipholding Company Group)	Cyprus, Nicosia	Storage and transport of crude oil, other sea transport services	99.99%	99.99%
• Technical Ship Management Sp. z o.o. (parent of another group: Technical Ship Management Group)	Gdańsk	Sea transport support activities, ship operation advisory services	99.99%	99.99%
• SPV Baltic Sp. z o.o.	Gdańsk	Provision of sea transport and related services	99.99%	99.99%
• SPV Petro Sp. z o.o.	Gdańsk	Support activities for oil and gas production, sea transport	99.99%	99.99%
• Miliana Shipmanagement Ltd.	Cyprus, Nicosia	Provision of sea transport and related services	99.99%	99.99%
• Bazalt Navigation Company Ltd.	Cyprus, Nicosia	Ship chartering	99.99%	99.99%
• Granit Navigation Company Ltd.	Cyprus, Nicosia	Ship chartering	99.99%	99.99%
• Kambr Navigation Company Ltd.	Cyprus, Nicosia	Ship chartering	99.99%	99.99%
• St. Barbara Navigation Company Ltd.	Cyprus, Nicosia	Ship chartering	99.99%	99.99%
• Petro Icarus Company Ltd.	Cyprus, Nicosia	Ship chartering	99.99%	99.99%
• Petro Aphrodite Company Ltd.	Cyprus, Nicosia	Ship chartering	99.99%	99.99%
• Miliana Shipping Group Ltd.	Cyprus, Nicosia	Management of own assets	- (2)	99.99%
• Energobaltic Sp. z o.o.	Władysławowo	Production of electricity, heat, LPG and natural gas condensate	99.99%	99.99%

(1) The companies were excluded from consolidation due to immateriality of the amounts disclosed in their financial statements as at December 31st 2019 (IFRS 10 *Consolidated Financial Statements*).
(2) In 2019, Miliana Shipholding Company Ltd. (the acquirer) and Miliana Shipping Group Ltd. (the acquiree) were merged. Following the merger, Miliana Shipholding Company Ltd. assumed all rights and obligations of the acquiree, while Miliana Shipping Group Ltd. was deleted from the register. Miliana Shipping Group Ltd. was the parent of another group, comprising the following companies: Bazalt Navigation Company Ltd., Granit Navigation Company Ltd., Kambr Navigation Company Ltd., St. Barbara Navigation Company Ltd., Petro Icarus Company Ltd. and Petro Aphrodite Company Ltd.

For information on the Group's interests in equity-accounted joint ventures, see Note 14.

3. Basis of preparation

These consolidated financial statements ("consolidated financial statements", "financial statements") have been prepared in accordance with the International Financial Reporting Standards ("IFRS") endorsed by the European Union and in effect as at December 31st 2019.

These consolidated financial statements have been prepared on the assumption that the Group companies will continue as going concerns in the foreseeable future. As at the date of authorisation of these financial statements for issue, no circumstances were identified which would indicate any threat to the Group companies' continuing as going concerns.

4. New standards and interpretations

The following new standards, amendments to existing standards and interpretations have been endorsed by the European Union (the "EU"):

- Amendments to various standards introduced as part of the Annual Improvements to IFRS Standards 2015–2017 Cycle – amendments made to IFRS 3, IFRS 11, IAS 12 and IAS 23 primarily to correct conflicts and clarify wording (effective for annual periods beginning on or after January 1st 2019),
- Amendments to IAS 19 *Employee Benefits – Plan Amendment, Curtailment or Settlement* (effective for annual periods beginning on or after January 1st 2019),
- Amendments to IAS 28 *Investments in Associates and Joint Ventures – Long-term Interests in Associates and Joint Ventures* (effective for annual periods beginning on or after January 1st 2019),
- Amendments to IAS 1 *Presentation of Financial Statements* and IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors – Definition of Materiality* (effective for annual periods beginning on or after January 1st 2020),
- Amendments to References to the Conceptual Framework in IFRS Standards (effective for annual periods beginning on or after January 1st 2020),
- Amendments to IFRS 9 *Financial Instruments*, IAS 39 *Financial Instruments - Recognition and Measurement*, IFRS 7 *Financial Instruments: Disclosures - IBOR Reform* (effective for annual periods beginning on or after January 1st 2020).

New standards, amendments to existing standards and interpretations which have not been endorsed by the European Union:

- IFRS 17 *Insurance Contracts* (effective for annual periods beginning on or after January 1st 2021),
- Amendments to IFRS 3 *Business Combinations − Definition of a Business* (effective for business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1st 2020 and to asset acquisitions that occur on or after the beginning of that period),
- Amendments to IFRS 10 *Consolidated Financial Statements* and IAS 28 *Investments in Associates and Joint Ventures - Sale or Contribution of Assets between an Investor and its Associate or Joint Venture*, and subsequent amendments (the effective date of the amendments has been postponed until the research project on the equity method has been concluded),
- IFRS 14 *Regulatory Deferral Accounts* (the effective date of the amendments is deferred),
- IAS 1 *Presentation of Financial Statements - classification of liabilities as current or non-current* (effective for annual periods beginning on or after January 1st 2022).

The effective dates are stated in relevant standards issued by the International Accounting Standards Board. The dates of application of standards in the EU may differ from the effective dates stated in those standards and are announced upon their endorsement by the EU.

The Group has not elected to early adopt any of the standards, interpretations, or amendments endorsed by the EU which were not effective as at December 31st 2019.

Effect of applying new standards

The accounting policies applied in the preparation of these consolidated financial statements are consistent with the policies applied in the preparation of the consolidated financial statements for 2018 (see Note 7 to the consolidated financial statements for 2018), except for the policies which were introduced following the adoption, as of January 1st 2019, of the new standard IFRS 16 *Leases*. For a discussion of the effect of the new standard on the Group's accounting policies, see Note 4 to the consolidated financial statements for 2018 and below.

Overview of the standard

IFRS 16 *Leases*

IFRS 16 is effective for annual periods beginning on or after January 1st 2019 and has been endorsed by the European Union. It replaces the previously applied IAS 17 as well as IFRIC 4, SIC-15 and SIC-27.	The new standard introduces a single lease accounting model in the lessee's accounting books, which is similar to the recognition of finance leases under IAS 17. Under IFRS 16, a contract is a lease or contains a lease component if it transfers the right to control the use of the identified asset for a given period for consideration. An essential element that differentiates the definitions of lease under IAS 17 and IFRS 16 is the requirement to exercise control over a specific asset used, identified in the contract explicitly or implicitly. The right-of-use is conveyed where the lessee has both the right to direct the identified asset's use and to obtain substantially all the economic benefits from that use in the period. If the definition of lease is satisfied, the lessee recognises a right-of-use asset and a lease liability, initially measured at the present value of the lease payments to be made over the lease term. Expenditure related to the use of leased assets, previously largely included in cost of services, is now classified as depreciation and interest expense. Right-of-use assets are depreciated using the straight-line method, while lease liabilities are accounted for using the effective interest rate.

Effect of IFRS 16 on the financial statements

The Group carried out an analysis aimed at identifying the agreements under which it uses assets owned by third parties. Each of the agreements so identified was reviewed in terms of satisfying the criteria to be classified as a lease in accordance with IFRS 16. Based on the review, the effect of IFRS 16 on the individual items of the Group's financial statements was calculated.

The Group also made appropriate changes to its accounting policies and operational procedures. It developed and implemented methodologies for correct identification of agreements which are leases as well as for collection of data necessary to correctly account for such transactions.

The Group decided to implement the standard starting from January 1st 2019. In accordance with the transitional provisions of IFRS 16, the new policies were adopted retrospectively: the cumulative impact of applying IFRS 16 was accounted for as an adjustment to equity as at January 1st 2019. Accordingly, the comparative data for the financial year 2018 has not been restated (modified retrospective approach).

IFRS 16 introduces a new definition of lease. However, the Company used a practical expedient for transition and did not re-assess whether the contracts previously classified included leases. Therefore, the definition of lease compliant with IAS 17 and IFRIC 4 will continue to apply to lease contracts, concluded or amended before January 1st 2019.

Below are presented the individual adjustments made due to the implementation of IFRS 16.

Recognition of lease liabilities

Upon adopting IFRS 16, the Group recognised lease liabilities related to agreements previously classified as operating leases in accordance with the requirements of IAS 17. These liabilities have been measured at the present value of lease payments outstanding at the start of application of IFRS 16, discounted using the interest rate implicit in the lease, calculated on the basis of the Company's incremental borrowing rate as at the date of adoption of the standard (January 1st 2019).

Lease liability	Jan 1 2019
Operating lease liabilities as at December 31st 2018	**1,372.0**
Effect of discounting using the Group's incremental borrowing rate as at January 1st 2019	(486.5)
Short-term leases recognised as expense in the period	(37.0)
Leases of low-value assets recognised as expense in the period	(0.4)
Other(1)	243.5
Total lease liabilities recognised as at January 1st 2019	**1,091.6**
Financial liabilities under finance leases recognised as at December 31st 2018	180.0
Total lease liabilities	**1,271.6**

(1) Applicable mainly to perpetual usufruct of land not classified as operating lease as at December 31st 2018.

Lease payments included in initial measurement of the lease liability comprise the following types of lease payments for the right to use the leased asset over the lease term:

- fixed lease payments net of any lease incentives,
- variable lease payments that depend on market indices,
- amounts expected to be payable by the lessee under residual value guarantees,
- the exercise price of a purchase option if the lessee is reasonably certain to exercise that option,
- lease termination penalties if the lessee is entitled to exercise the option to terminate the lease.

To calculate discount rates for the purposes of IFRS 16, the Group assumed that the discount rate should reflect the cost that it would have to pay to borrow the funds necessary to purchase the leased asset. In order to estimate the discount rate, the Group took into account the following parameters of a potential borrowing agreement: agreement type, duration and currency, as well as the margin it would have to pay to the financial institution to obtain the financing.

As at the date of first-time application of the standard, the average discount rate calculated by the Group was 6.15%.

Use of practical expedients

When first applying IFRS 16, the Group applied the following practical expedients available under the standard:

- application of a single discount rate to a portfolio of leases with similar characteristics,
- treatment of operating leases whose remaining term as at January 1st 2019 was less than 12 months as short-term leases,
- exclusion of initial direct costs from the measurement of the right-of-use assets at the date of initial application, and
- use of hindsight in determining the lease term if the contract contains options to extend or terminate the lease.

Effect on the statement of financial position

Estimated effect of implementation of IFRS 16 on the recognition of additional right-of-use assets and related financial liabilities:

	IAS 17 Dec 31 2018	Effect of accounting policy change	IFRS 16 Jan 1 2019
ASSETS			
Non-current assets			
Property, plant and equipment of the refining and marketing segment	8,742.4	1,024.0	9,766.4
Property, plant and equipment of the exploration and production segment	3,044.0	67.6	3,111.6
Total	**11,786.4**	**1,091.6**	**12,878.0**
EQUITY AND LIABILITIES			
Non-current liabilities			
Borrowings, other debt instruments and lease liabilities	2,345.3	885.6	3,230.9
Current liabilities			
Borrowings, other debt instruments and lease liabilities	1,538.7	206.0	1,744.7
Total	**3,884.0**	**1,091.6**	**4,975.6**

Effect on the statement of comprehensive income

The table below presents the estimated amounts which affect the consolidated statement of comprehensive income in the current reporting period following the application of IFRS 16 as compared with IAS 17 and the related interpretations that had been effective prior to the change.

	2019		
	Amounts recognised in accordance with IFRS 16	Adjustment	Amounts not affected by application of IFRS 16*
Revenue	29,493.3	-	29,493.3
Cost of sales	(25,649.1)	(11.6)	(25,660.7)
Gross profit	**3,844.2**	**(11.6)**	**3,832.6**
Distribution costs	(1,425.6)	(13.0)	(1,438.6)
Administrative expenses	(490.8)	(1.2)	(492.0)
Other income	134.6	(2.6)	132.0
Other expenses	(92.7)	21.6	(71.1)
Operating profit	**1,969.7**	**(6.8)**	**1,962.9**
of which: depreciation and amortisation	(909.3)	173.4	(735.9)
Finance income	70.1	(0.2)	69.9
Finance costs	(351.8)	57.2	(294.6)
Share in net profit/(loss) of Equity-accounted joint ventures	4.2	-	4.2
Profit before tax	**1,692.2**	**50.2**	**1,742.4**
Corporate income tax	(539.3)	(8.0)	(547.3)
Net profit	**1,152.9**	**42.2**	**1,195.1**

*The column presents the amounts determined in such a manner as if IAS 17 and the related interpretations applied in the current reporting period.

Effect on equity

The implementation of IFRS 16 had no effect on retained earnings or equity as at January 1st 2019 due to the fact that the right-of-use assets and lease liabilities were recognised in the same amount.

Effect on financial ratios

Given the fact that practically all leases were recognised in the consolidated statement of financial position, the implementation of IFRS 16 by the Group affected its balance sheet ratios, including the debt to equity ratio. In addition, the implementation of IFRS 16 resulted in changes to the profit metrics (e.g. operating profit, EBITDA) and to cash flows from operating activities. The Group analysed the implications of these changes for the fulfilment of covenants contained in its credit facility agreements. No risk of default was identified.

5. Use of accounting assumptions, estimates and judgements

The preparation of financial statements in accordance with the International Financial Reporting Standards requires a number of assumptions, judgements and estimates which affect the value of items disclosed in these financial statements.

Although the assumptions and estimates are based on the management's best knowledge of the current and future events and developments, the actual results might differ from the estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Any change in an accounting estimate is recognised in the period in which it was made if it refers exclusively to that period, or in the current period and future periods if it refers to both the current period and future periods. Material assumptions used in making the estimates are described in the relevant notes to these financial statements.

While making assumptions, estimates and judgements, the Company's Management Board (Management Board) relies on its experience and knowledge and may take into consideration opinions, analyses and recommendations issued by independent experts.

Critical assumptions and estimates

Employee benefit obligations

Employee benefit obligations are estimated using actuarial methods. For information on the actuarial assumptions and valuation of employee benefit obligations, see Note 24.3.

Depreciation and amortisation

Depreciation and amortisation of the assets of onshore and offshore oil and gas extraction facilities is calculated (using the units-of-production method) based on 2P hydrocarbon reserve estimates (proved and probable reserves), evaluated, revised and updated by the Group, as well as forecast production volumes from the individual oil and gas fields based on geological data, test production, subsequent production data and the schedule of work adopted in the long-term strategy.

Depreciation and amortisation charges on refining and other non-current assets are determined based on the expected useful lives of property, plant and equipment and intangible assets. The Group reviews the useful lives of its assets annually, based on current estimates. The relevant estimate update which had an effect on the Group's financial statements for 2019 applied in the first place to the Parent, which recorded a PLN 1.4m increase in depreciation/amortisation of these assets.

Fair value of financial instruments

The fair value of financial instruments for which no active market exists is determined by means of appropriate valuation methods. In selecting the methods and assumptions appropriate for these objectives, the Group relies on professional judgement.

For more information on the assumptions adopted for the measurement of fair value of financial instruments, see Notes 7.20 and 7.22.

Deferred tax assets

The Group recognises deferred tax assets if it is assumed that taxable income will be generated in the future against which the assets can be utilised. If taxable profit deteriorates in the future, this assumption may prove invalid. The Parent's Management Board reviews its estimates regarding the likelihood of recovering deferred tax assets taking into account changes in the factors on which such estimates were based, new information and past experience.

For information on deferred tax assets, see Note 10.3.

Impairment of cash-generating units, individual items of property, plant and equipment, and intangible assets

If there is any indication of impairment, the Group estimates the recoverable amounts of assets and cash-generating units. While determining the recoverable amount, such key variables as discount rates, growth rates and price indices are taken into account.

As at December 31st 2019, following an analysis of cash flows for individual cash-generating units and the required impairment tests for assets, the Group made necessary adjustments to assets and disclosed detailed information on the test assumptions and results in Note 13.

Provision for decommissioning of the exploration and production segment's facilities and site restoration

As at the end of each reporting period, the Group analyses the costs necessary to decommission oil and gas extraction facilities and the expenditure to be incurred on future site restoration. As a result of those analyses, the Group adjusts the value of the site restoration provision recognised in previous years to reflect the estimated amount of necessary future costs. Any changes in the estimated time value of money are also reflected in the amount of the provision. For information on the rules for recognition of those provisions and information on provisions disclosed in these financial statements for 2019, see Note 7.24.1 and Note 25.1, respectively.

Lease discount rate

For each type of contract, the Group estimates the discount rate which will affect the final value of the contracts. The Group takes into account characteristics of the contract, the duration of the contract, the currency of the contract and the potential margin it would have to pay to external financial institutions if it wanted to enter into such a transaction on the financial market.

The process of determining a current incremental borrowing rate consists of the following steps:

- analysis of the lessee's current financing structure (e.g., the debt instruments held by the lessee and their terms);
- determination of the appropriate reference rate – assuming specific currency, economic conditions and lease term;
- analysis of other material lease terms, including the nature of the underlying assets.

To calculate discount rates for leasing purposes, the Group assumes that the discount rate should reflect the cost that it would have to pay to borrow the funds necessary to purchase the leased asset.

The Group enters into lease contracts based on the three principal currencies to which it has assigned the base discount rate. These are PLN at the WIBOR base rate for short-term periods and interest rates on government bonds for long-term periods, EUR at the EURIBOR base rate for short-term periods and interest rate on government bonds for long-term periods, and USD at the LIBOR base rate for short-term periods and interest rate on government bonds for long-term periods.

Determination of current discount rates is performed cyclically every quarter, and the discount rates so determined are then used for lease calculations in accordance with IFRS 16 for the period lasting until the next determination of the discount rates.

Professional judgement in accounting

Joint control of an investee or operation

The Group and all other investors collectively control an investee when they must act together to direct the relevant activities. In such cases, because no investor can direct the activities without the cooperation of other investors, no investor individually controls the investee. The Group assesses whether it shares control of an arrangement, which – in accordance with IFRS 11 *Joint Arrangements* – may be defined either as a joint venture or a joint operation, taking into consideration whether all parties to the arrangement have control of it, whether they share exposure, or rights, to variable returns from their involvement with the investee, and whether they have the ability to jointly use their power over the investee to affect the amount of their returns.

As at the end of the reporting period, the Group was involved in joint operations under projects carried out in the Heimdal fields in Norway, and in joint ventures (see Note 14), as defined in IFRS 11, and in that respect, considering all facts and circumstances, it had joint control.

As at December 31st 2019, the Group also held interests in the Sleipner gas fields in Norway. Upon their acquisition in December 2015 (see Note 13.1.3 in the Consolidated financial statements for 2015), the Group entered into an agreement with the other holders of the Sleipner, Gungne, Loke, Alfa Sentral and PL046D licences. Considering the IFRS 11 criteria, the Group's operations in those fields do not constitute joint arrangements as defined in the standard, and the Group does not have joint control of the operations, as there is more than one combination of parties that can agree to decisions about the relevant activities. Therefore, for the purpose of correct recognition and measurement of transactions related to the operations in the Sleipner fields, the Group applies other relevant IFRSs taking into account its interest in the fields, which ensures that there are no material differences in the accounting recognition and measurement of transactions related to these operations and the manner of recognising operations which are carried out jointly with the Heimdal licence interest holders and meet the definition of joint operations within the meaning of IFRS 11.

Classification of natural gas and crude oil assets in financial statements

The Group classifies its natural gas and crude oil assets as exploration and evaluation assets, development assets or production assets, relying on its professional judgement.

Once the size of a deposit is confirmed and its production plan is approved, the expenditure on natural gas and crude oil assets is transferred from exploration and evaluation assets to appropriate items of property, plant and equipment or intangible assets classified as development or production assets.

The decision to present natural gas and crude oil assets in the financial statements under development assets or production assets is made taking into account all conditions and circumstances related to the upstream project and the subsequent production from the field.

For information on accounting policies concerning natural gas and crude oil assets, see Note 7.11. For presentation and details of those assets in these financial statements, see Note 13.2.

6. Change of information presented in previous reporting periods and correction of errors

In the statement of comprehensive income, the Group changed the presentation of a provision to cover the deficit of carbon dioxide emission allowances (CO_2) by transferring the provision from other activities to core activities (Taxes and charges). As a result of the change in the statement of comprehensive income for 2018, other expenses decreased (see Note 9.4) and cost of sales increased by PLN 26.3m. The comparative data presented in Note 9.1 Expenses by nature was also changed under: Taxes and charges and Cost of sales. These items increased by PLN 26.3m.

7. Accounting policies

These consolidated financial statements have been prepared in accordance with the historical cost principle, with the exception of those financial instruments which are measured at fair value.

The key accounting policies applied by the Group are presented below.

7.1 Consolidation

These consolidated financial statements have been prepared on the basis of the financial statements of the Parent and financial statements of its subsidiaries and jointly-controlled entities, prepared as at December 31st 2019.

All significant balances and transactions between the related entities, including material unrealised profits on transactions, have been eliminated in their entirety. Unrealised losses are eliminated unless they are indicative of impairment.

Subsidiaries are fully consolidated starting from the date when the Group assumes control over them and cease to be consolidated when the control is lost. According to IFRS 10 *Consolidated Financial Statements*, the Group controls an investee when it is exposed or has rights to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee.

The Group and all other investors collectively control an investee when they must act together to direct the relevant activities. In such cases, because no investor can direct the activities without the cooperation of other investors, no investor individually controls the investee. Interests in joint ventures held by the Group (see Note 14) are accounted for with the equity method (see Note 7.28).

7.2 Revenue

Revenue from contracts with customers is recognised when the Group satisfies a performance obligation by transferring a promised good or service to a customer (which is when the customer obtains control of that good or service). In the statement of comprehensive income, revenue from contracts with customers is recognised as revenue from the Group's day-to-day operations (i.e., revenue from sales of products, services, merchandise and materials), adjusted for the result on settlement of derivatives hedging future cash flows. Contracts with customers are presented in the Group's statement of financial position as a contract asset or a contract liability, depending on the relationship between the Group's performance and the customer's payment. Only the Group's unconditional rights to receive consideration are presented on a separate basis as trade receivables (e.g., where an invoice has been issued to a customer or where it received another legal title requiring it to make payment by a specified deadline). Conditional rights (where the passage of time is not the only condition for payment) are presented as contract assets. If several obligations arise under a single contract with respect to which both contract assets and contract liabilities have been recognised, such assets and liabilities are presented in net amounts in the statement of financial position. Contract assets are recognised and measured in accordance with IFRS 9 *Financial Instruments*.

Identifying contracts with customers

The Group carries out an analysis to determine whether the following criteria have been met before a contract is considered a 'contract with a customer':

- The contract between two or more parties has been concluded in writing, orally or in accordance with other customary business practices and has been approved by the parties;
- The contract identifies each party's rights and obligations regarding the goods or services and payment terms – the contract should clearly indicate the point in time when control over the goods sold or services provided is passed to the customer. In the case of sale of goods, the point in time when control is passed is usually the time when goods are transferred to the customer. In the case of provision of services, especially over a longer period of time, the point in time at which control passes may not be readily identifiable. If the point in time at which control is passed has not been not specified in the contract or is not a customary business practice, then the contract fails to meet the criterion as the seller is unable to determine the time when revenue is recognised. The contract must also specify the payment method, amount and date;

- Each party expects to perform its contractual obligations and it is probable that for the transferred goods or services consideration will be collected which the Group is able to determine. When assessing the probability of payment at this stage, the Group considers only the customer's ability and intention to pay the consideration when it is due, and does not evaluate the amount of consideration to be received from the customer (such amount may differ from the contract price as a result of future discounts, rebates or other elements of variable consideration);
- The contract has commercial substance, which means that upon its performance, the risk, time and amount of the Group's future cash flows will change. If these parameters are not expected to change, it is rather unlikely that the contract has commercial substance. Planned cash flows do not have to change only through additional cash flows received from the customer, but also through decreasing outgoing cash flows from the seller, for example by receiving non-cash consideration from the customer;
- It is probable that the Group will receive the consideration to which it will be entitled in exchange for the goods or services that will be transferred to the customer.

Identifying performance obligations

At the inception of the contract, the Group assesses the goods or services that have been promised to the customer and identifies as a performance obligation any promise to transfer to the customer a good or service (or bundle of goods or services) that is distinct or a series of distinct goods or services that are substantially the same and that have the same pattern of transfer to the customer.

A good or service is distinct if both of the following criteria are met:

- the customer can benefit from the good or services on its own or in conjunction with other readily available resources; and
- the Group's promise to transfer the good or service to the customer is separately identifiable from other promises in the contract.

Determination of transaction price

In determining the transaction price, the Group takes into account not only fixed consideration, but also other components of consideration, such as variable consideration (i.e. the consideration amount that is contingent on the occurrence of a future event), non-monetary consideration, consideration due to the customer, and a significant financing arrangement. The price does not include amounts collected on behalf of another entity, i.e. VAT and other sales taxes (excise duty, fuel charge).

Variable consideration

Some contracts with customers may contain variable remuneration amounts because of discounts, rebates, refunds, credits, incentives, performance bonuses, penalties, price concessions or other similar items.

The Group includes variable consideration in the transaction price if, and to the extent that, it is highly probable that its inclusion will not result in a significant revenue reversal in the future (prudence principle) and makes an estimate applying one of the following methods, depending on which one will make it possible to more accurately predict the amount of consideration to which it is entitled:

- the expected value method (the sum of the products of consideration amounts and the probabilities of their occurrence), which is applied if a large number of similar contracts are concluded and the contract may have more than two possible outcomes;
- the most likely outcome method (i.e. the most likely amount) if the contract has only two possible outcomes (e.g. with or without a bonus).

The selected method is consistently applied to the contract. The estimate is remeasured as at each reporting date. Adjustments to recognised revenue are disclosed in the period in which the remeasurement takes place (cumulative catch-up) – the total amount of recognised revenue should be equal to the amount which would have been recognised if the new information had been known to the Group from the beginning.

Non-cash consideration is measured at fair value and where it is not possible to make a reasonable estimate – directly by reference to the standalone selling price of the promised goods or services.
Consideration due to the customer reduces the transaction price unless it is a payment for the goods or services purchased from the customer. Revenue will be reduced upon the occurrence of the latter of the following events:

- the Group recognises revenue from the transfer of related goods or services to the customer; and
- the Company pays or undertakes to pay consideration (even if such payment is contingent on the occurrence of a future event).

At the end of each reporting period occurring during the term of the contract, the Group updates its estimates affecting the transaction price. Any change in the transaction price is allocated to all performance obligations unless the variable consideration relates to only one or more than one (but not all) such obligations.

Allocating the transaction price to performance obligations

The Group allocates the transaction price to each performance obligation (or to a distinct good or service) in an amount that reflects the amount of consideration to which the Group expects to be entitled in exchange for transferring the promised goods or services to the customer.

Satisfaction of performance obligations

If a performance obligation is satisfied at a point in time, revenue is recognised as control over a product, good or service is passed (i.e., when the ability to direct the use and obtain substantially all benefits from that product, good or service is passed).

Factors that may indicate the point in time at which control passes include, but are not limited to:

- the Group has a present right to payment for the asset,
- the customer has legal title to the asset,
- the customer has physical possession of the asset,
- the customer has the significant risks and rewards related to the ownership of the asset,
- the customer accepted the asset.

Revenue from sale of products, merchandise and materials is recognised in profit or loss on a one-off basis at a point in time being the time when the performance obligation is satisfied (defined, in particular, on the basis of INCOTERMS).

In the case of contracts for continuing services, under which the Group is entitled to receive from a customer a consideration in an amount that corresponds directly to the value of the services which the customer has received so far, the Group recognises the revenue in the amount it is entitled to invoice.

Principal versus agent considerations

When another party is involved in providing goods or services to a customer, the Group determines whether its performance obligation is to provide the good or service itself (i.e., the Group is a principal) or to arrange for another party to provide the good or service (i.e., the Group is an agent).

The Group is a principal if it controls the promised good or service before transferring it to the customer. However, the entity is not acting as a principal if it obtains legal title to a specified good only momentarily before legal title is transferred to a customer. A principal may satisfy its performance obligation to provide the specified good or service itself or it may engage another party (e.g. a subcontractor) to satisfy some or all of the performance obligation on its behalf. In such circumstances, the Group recognises revenue in the gross amount to which it expects to be entitled in exchange or the specified goods or services transferred.

The Group is an agent if its performance obligation is to arrange for the provision of the specified good or service by another party. In such a case, the Company recognises revenue in the amount of any fee or commission to which it expects to be entitled in exchange for arranging for the specified goods or services to be provided by the other party.

Significant financing component

With regard to contracts with customers for whom the interval between transfer of the promised goods or services and payment by the customer is expected to be more than one year, the Group determines whether the contracts include a significant financing component. In order to determine the transaction price, the Group adjusts the promised amount of consideration for a significant financing component using the discount rate that would be reflected in a separate financing transaction between the entity and the customer at contract inception.
The Group has decided not to adjust the promised amount of consideration for the effect of a significant financing component if the Group expects, at contract inception, that the period between when the Group transfers a promised good or service to the customer and when the customer pays for that good or service will be one year or less. Therefore, the Group does not identify a significant financing component for short-term advance payments.

Non-cash consideration

Where a customer promises consideration in a form other than cash, in order to determine the transaction price the Group measures the non-cash consideration (or promise of non-cash consideration) at fair value. Where the fair value of the non-cash consideration cannot be reasonably estimated, the consideration is measured indirectly by reference to the stand-alone selling price of the goods or services promised to the customer (or class of customer) in exchange for the consideration.

Guarantees

The Group provides a guarantee for sold products, ensuring that a product conforms to the specifications agreed upon by the parties. The Group recognises such guarantees in accordance with IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*.
Some non-standard contracts with customers may contain extended guarantees. Such guarantees form a separate service which is recognised as a performance obligation and to which part of the transaction price is allocated.

Capitalised costs to obtain a contract

The Group recognises additional costs to obtain a contract with a customer as an asset if the costs are expected to be recovered. The additional costs to obtain a contract are those costs incurred by an entity to obtain a contract with a customer which the entity would not have incurred if the contract had not been concluded. Costs to obtain a contract that would have been incurred regardless of whether the contract was obtained are recognised as an expense when incurred, unless the costs are explicitly chargeable to the customer regardless of whether the contract is obtained. The Group recognises incremental costs to obtain a contract as an expense when they are incurred if the amortisation period of the asset that would otherwise be recognised by the Group is one year or less. An asset is amortised on a systematic basis that is consistent with the transfer to the customer of the goods or services to which the asset relates. The Group updates the amortisation period to reflect a significant change in the expected period of delivering the goods or services to which the asset relates to the customer.

Contract assets

As contract assets, the Group recognises the right to consideration in exchange for goods or services transferred to a customer when that right is conditioned on something other than the passage of time (for example, the entity's future performance). The Group assesses whether there is any impairment of a contract asset in the same way as in the case of a financial asset in accordance with IFRS 9.

Receivables

Under receivables, the Group recognises the right to consideration in exchange for goods or services transferred to a customer if the right is unconditional (only the passage of time is required before payment of that consideration is due.). The Group recognises a receivable in accordance with IFRS 9. On initial recognition of a contract receivable, any difference between the measurement of the receivable in accordance with IFRS 9 and the corresponding amount of revenue previously recognised are recognised as an expense (impairment loss).

Contract liabilities

Under contract liabilities, the Group recognises such consideration received or receivable from a customer which relates to the obligation to transfer goods or services to the customer.

Right of return assets

Under right of return assets, the Group recognises the right to recover products from customers on settling the refund liability.

Refund liabilities

The Group recognises a refund liability if, having received consideration from a customer, the Group expects to refund a part or all of that consideration to the customer. A refund liability is measured as the amount of consideration received (or receivable) to which the Group does not expect to be entitled (i.e. amounts not included in the transaction price). The refund liability (as well as a corresponding change in the transaction price and the related change in the contract liability) is updated at the end of each reporting period for changes in circumstances.

7.3 Dividend income

Dividend is recognised as finance income as at the date on which the appropriate governing body of the dividend payer resolves on distribution of profit, unless the resolution specifies another dividend record date. Although this classification policy does not follow directly from IAS 18, the Group decided to disclose dividend income under finance income since this is a common practice among entities, other than financial institutions, applying IFRSs. The Group applies this classification policy in a consistent manner.

7.4 Interest income

Interest income is recognised as the interest accrues (using the effective interest rate), unless its receipt is doubtful. The Group recognises interest income under finance income, following a common (and commonly accepted) practice among entities, other than financial institutions, applying IFRSs. The Group applies this classification policy in a consistent manner.

7.5 Income tax

Mandatory decrease in profit/(increase in loss) comprises current income tax (CIT) and deferred income tax. The current portion of income tax is calculated based on net profit/(loss) (taxable income) for a given financial year. Net profit/(loss) for tax purposes differs from net profit/(loss) for accounting purposes due to temporary differences between revenue amounts calculated for these two purposes, including income which is taxable and costs which are tax-deductible in a period other than the current accounting period, as well as permanent differences attributable to income and cost which will never be accounted for in tax settlements. Tax expense is calculated based on tax rates effective in a given financial year.

For the purposes of financial reporting, tax liabilities are calculated taking into account all temporary differences existing as at the end of the reporting period between the tax base of assets and liabilities and their carrying amounts as disclosed in the financial statements.
Deferred tax liability is recognised for all taxable temporary differences:

- except to the extent that the deferred tax liability arises from the initial recognition of goodwill or the initial recognition of an asset or liability in a transaction which is not a business combination and which, at the time of its execution, affects neither accounting pre-tax profit nor taxable income or tax loss, and
- in the case of taxable temporary differences associated with investments in subsidiaries, jointly-controlled entities or associates and interests in joint ventures, unless the investor is able to control the timing of reversal of temporary differences and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets are disclosed in relation to all deductible temporary differences, unused tax assets, and unused tax losses brought forward, in the amount of the probable taxable income which would enable these differences, assets and losses to be used:

- except to where the deferred tax assets related to deductible temporary differences arise from the initial recognition of an asset or liability in a transaction which is not a business combination and which, at the time of its execution, affects neither accounting pre-tax profit nor taxable income or tax loss, and
- in the case of deductible temporary differences associated with investments in subsidiaries, jointly-controlled entities or associates and interests in joint ventures, the related deferred tax assets are recognised in the statement of financial position to the extent it is probable that in the foreseeable future the temporary differences will be reversed and taxable income will be generated which will enable the deductible temporary differences to be offset.

The carrying amount of deferred tax assets is revised as at the end of each reporting period and is subject to appropriate reduction to the extent it is no longer probable that taxable income sufficient for its partial or full realisation would be generated.

Deferred tax assets and deferred tax liabilities are measured using tax rates expected to be effective at the time of realisation of particular asset or liability, based on tax rates (and tax legislation) effective as at the end of the reporting period or tax rates (and tax legislation) which as at the end of the reporting period are certain to be effective in the future. The effect of deferred tax is recognised in profit or loss for the period, with the exception of taxes arising from transactions or events, which are recognised in other comprehensive income or directly in equity, and taxes arising from business combinations.

Deferred tax assets and deferred tax liabilities are presented in the statement of financial position in the amount obtained after they are offset for particular consolidated entities.

7.6 Value-added tax, excise duty, fuel charge and emission charge

Revenue, costs, assets and liabilities are recognised net of value added tax, excise duty, fuel charge and emission charge, except for:

- where the value added tax (VAT) paid when purchasing assets or services is not recoverable from the tax authorities (in such a case it is recognised in the cost of a given asset or as part of the cost item), and
- receivables and payables which are recognised inclusive of value added tax, excise duty, fuel charge and emission charge.

The net amount of value added tax, excise duty, fuel charge and emission charge recoverable from or payable to tax authorities is carried in the statement of financial position under receivables or liabilities, as appropriate.

7.7 Functional currency, presentation currency and foreign currency translation

The Parent's functional currency and the presentation currency of these consolidated financial statements is the Polish złoty ("złoty", "zł", "PLN"). These consolidated financial statements have been prepared in millions of złoty and, unless indicated otherwise, all amounts are stated in millions of złoty.

The financial statements of foreign entities are translated into the presentation currency of the consolidated financial statements at the following exchange rates:

- items of the statement of financial position – at the mid rate quoted by the National Bank of Poland for the end of the reporting period (NBP's mid rate for the end of the reporting period),
- items of the statement of comprehensive income – at the exchange rate computed as the arithmetic mean of mid rates quoted by the National Bank of Poland for the end of each month in the reporting period (NBP's average mid rate for the reporting period).

The resulting exchange differences are recognised as a separate component in equity and other comprehensive income.

Exchange differences on translating foreign operations comprise exchange differences resulting from the translation into the złoty of the financial statements of foreign companies and groups of companies.

Exchange differences arising on a monetary item that forms a part of a reporting entity's net investment in a foreign operation are recognised in equity and other comprehensive income, and on disposal of the investment they are reclassified to consolidated profit or loss in the statement of comprehensive income.

At the time of disposal of a foreign entity, the accumulated exchange differences recognised in equity and relating to this foreign entity are taken to profit or loss.

Goodwill and fair value adjustments arising on the acquisition of a foreign operation are treated as assets or liabilities of the foreign operation and are translated into the presentation currency of the financial statements at the exchange rate effective for the end of the reporting period.

The following exchange rates were used in the valuation of items of the statement of financial position:

NBP's mid rate quoted for:	Dec 31 2019 (1)	Dec 31 2018 (2)
USD	3.7977	3.7597
EUR	4.2585	4.3000
GBP	4.9971	4.7895
NOK	0.4320	0.4325

(1) NBP's mid rates table, effective for December 31st 2019.
(2) NBP's mid rates table, effective for December 31st 2018.

The following exchange rates were used in the valuation of items of the statement of comprehensive income:

NBP's average mid rate for the reporting period	2019 (1)	2018 (2)
USD	3.8440	3.6227
EUR	4.3018	4.2669
GBP	4.9106	4.8142
NOK	0.4367	0.4432

(1) Based on the arithmetic mean of the mid rates quoted by the NBP for the last day of each full month in the period January 1st–December 31st 2019.
(2) Based on the arithmetic mean of the mid rates quoted by the NBP for the last day of each full month in the period January 1st–December 31st 2018.

7.8 Foreign currency transactions

Business transactions denominated in foreign currencies are reported in the consolidated financial statements after translation into the Group's presentation currency (Polish złoty) at the following exchange rates:

- the exchange rate actually applied on that date due to the nature of the transaction – in the case of sale or purchase of foreign currencies;
- the mid rate quoted for a given currency by the National Bank of Poland (the "NBP") for the day immediately preceding the transaction date – in the case of payment of receivables or liabilities where there is no rationale for using the exchange rate referred to above, and for other transactions.

The exchange rate applicable to purchase invoices is the mid rate quoted by the National Bank of Poland for the last business day immediately preceding the invoice date, and the exchange rate applicable to sales invoices is the mid rate quoted by the National Bank of Poland for the last business day immediately preceding the sale date.

Any foreign exchange gains or losses resulting from currency translation are posted to the statement of comprehensive income (including intercompany foreign currency transactions), except for foreign exchange gains and losses which are treated as a part of borrowing costs and are capitalised in property, plant and equipment (foreign exchange gains and losses on interest and fees and commissions). Non-monetary items measured at historical cost in a foreign currency are translated at the exchange rate effective as at the date of the initial transaction. Non-monetary items measured at fair value in a foreign currency are translated at the exchange rate effective as at the date of determining the fair value.

The Company calculates realised and unrealised foreign exchange gains (losses) separately and recognises the resulting total balance in the statement of comprehensive income under:

- other income or other expenses: in the case of foreign exchange gains and losses related to settlement of trade receivables and payables,
- finance income or finance costs: in the case of borrowings, investment commitments, and cash and cash equivalents.

Exchange differences on end-of-period valuation of short-term investments (e.g. shares and other securities, loans advanced, cash and cash equivalents) and receivables and liabilities denominated in foreign currencies are charged to finance income or costs and operating income or expenses.

7.9 Property, plant and equipment and intangible assets

7.9.1 Property, plant and equipment

Items of property, plant and equipment other than land are measured at cost less accumulated depreciation and impairment losses.

Land is measured at cost less impairment losses.

Initial value of an item of property, plant and equipment comprises its cost, which includes all costs directly related to its acquisition and bringing it to working condition for its intended use. The cost also includes the cost of replacing component parts of plant and equipment, which is recognised when incurred, provided that relevant recognition criteria are fulfilled. Costs incurred on an asset which is already in service, such as costs of repairs and overhauls or operating fees, are expensed in the reporting period in which they were incurred.

The initial value of property, plant and equipment includes borrowing costs (see Note 7.19).

Items of property, plant and equipment (including their components), other than land and property, plant and equipment comprising production infrastructure, are depreciated using the straight-line method over their estimated useful lives.

Items of property, plant and equipment comprising production infrastructure used in crude oil and natural gas extraction are depreciated using the units-of-production method, where depreciation per unit of produced crude oil or natural gas charged to expenses. The depreciation rate is estimated by reference to forecasts of crude oil and gas production from a given geological area. If the estimated hydrocarbon reserves (2P – proved and probable reserves) change materially as at the end of the reporting period, depreciation per unit of produced crude oil or natural gas is remeasured and the revised depreciation rate is applied starting from the new financial year (see Note 5).

Items of property, plant and equipment under construction are measured at the amount of aggregate costs directly attributable to their acquisition or production (including finance costs) less impairment losses, if any. Items of property, plant and equipment under construction are not depreciated until they are ready for their intended use.

	Depreciation method	Depreciation period/useful life
Land (excluding perpetual usufruct rights)	Not depreciated	
Property, plant and equipment under construction	Not depreciated	
Other items of property, plant and equipment:		
Buildings, structures	Straight-line method	From 1 to 80 years
Plant and equipment	Straight-line method	From 1 to 25 years
Vehicles, other	Straight-line method	From 1 to 15 years
Property, plant and equipment comprising production infrastructure used in crude oil and natural gas extraction	Units-of-production method	The depreciation rate is estimated by reference to forecasts of crude oil and gas production from a given geological area (2P – proved and probable reserves).

The residual values, useful economic lives and depreciation methods are reviewed on an annual basis and adjusted, if required, with effect as of the beginning of the next financial year.

An item of property, plant and equipment may be removed from the statement of financial position if it is sold or if the entity does not expect to realise any economic benefits from its further use. Any gains or losses on derecognition of an asset from the statement of financial position (calculated as the difference between net proceeds from its sale, if any, and the carrying amount of the asset) are disclosed in the statement of comprehensive income in the period of derecognition.

Property, plant and equipment comprising the Group's production infrastructure include assets corresponding to the amount of the provision for decommissioning of oil and gas extraction facilities (see also Note 7.24.1). These assets are recognised in accordance with IAS 16 *Property, Plant and Equipment*, which states: "Cost of an item of property, land and equipment includes […] the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located, the obligation for which an entity incurs when the item is acquired or as a consequence of having used the item during a particular period for purposes other than to produce inventories during that period". The Group's obligation to incur costs of decommissioning of oil and gas extraction facilities results directly from the reasons specified in IAS 16. Under Section 63 of the standard, entities are obliged to review the value of the assets periodically, at least as at the end of each reporting period.

Revaluation of the assets may be caused by:
- change in the estimate of the cash outflow that will be necessary to ensure performance of the decommissioning obligation,
- change in the current market discount rate,
- change in the inflation rate.

Expenditure on property, plant and equipment used in exploration for and evaluation of crude oil and natural gas resources is capitalised until the deposit volume and the economic viability of production are determined; such expenditure is presented in a separate item of property, plant and equipment in accordance with IFRS 6 *Exploration for and Evaluation of Mineral Resources*. Upon confirmation of existence of reserves in the case of which extraction is technically feasible and economically viable, such expenditure is transferred to relevant items of property, plant and equipment classified as development or production assets, and is subsequently depreciated using the units-of-production method (see above) based on the volume of reserves and actual production.

If expenditure on property, plant and equipment under construction does not result in discovery of any reserves in the case of which extraction is technically feasible and economically viable, impairment losses on property, plant and equipment under construction are recognised and charged to profit or loss of the period in which it is found that commercial production from the deposits is not viable.

7.9.2 Goodwill

The acquirer recognises the acquiree's goodwill as at the acquisition date, in the amount equal to the excess of the difference between (A) the amount of consideration transferred, measured at its acquisition-date fair value, including the value of any non-controlling interests in the acquiree, (B) the acquisition-date fair value of the acquirer's previously held equity interest in the acquiree (in the case of a business combination achieved in stages), and (C) the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed measured at fair values as at the transaction date.
Goodwill = (C) - (A) - (B)

In the case of a business combination achieved in stages, the acquirer remeasures its previously held equity interest in the acquiree at its acquisition-date fair value and recognises the resulting gain or loss in the statement of comprehensive income.

Following initial recognition, goodwill is carried at cost less cumulative impairment losses. Goodwill is tested for impairment once a year. It is not amortised.

As at the acquisition date, the acquired goodwill is allocated to each of the identified cash-generating units that may benefit from the synergies of the business combination, provided that goodwill may not be allocated to a cash-generating unit higher than an operating segment. The Group calculates impairment of value by estimating the recoverable amount of a cash-generating unit ("CGU") to which goodwill has been allocated. If the recoverable amount of the CGU is lower than its carrying amount, an impairment loss is recognised. If goodwill is a part of a CGU and the Group sells a part of the CGU's business, the goodwill pertaining to the sold business is included in the carrying amount of the sold business for the purpose of calculating gain or loss on disposal of the part of business. In such a case, goodwill pertaining to the sold business should be measured using the relative value of the sold business, pro-rata to the interest in the retained part of the CGU.

7.9.3 Other intangible assets

Intangible assets other than goodwill comprise oil exploration and production licences in Lithuania acquired as part of a business combination, expenditure incurred on oil and gas exploration licences on the Norwegian Continental Shelf, other production and exploration licences in Poland, software licences, patents, trademarks, acquired CO_2 emission allowances and intangible assets under development.

Intangible assets are initially recognised at cost if they are acquired in separate transactions. Intangible assets acquired as part of a business combination are recognised at fair value as at the transaction date. Subsequent to initial recognition, intangible assets are carried at amounts reflecting accumulated amortisation and impairment losses.

Licences obtained in Lithuania during the step acquisition of the AB LOTOS Geonafta Group companies are disclosed under intangible assets classified as development or production assets and <u>amortised using the unit-of-production method</u>, where amortisation per unit of produced crude oil is charged to expenses. The amortisation rate is estimated by reference to forecasts of hydrocarbon production from a given field. If the estimated hydrocarbon reserves (2P – proved and probable reserves) change materially as at the end of the reporting period, amortisation per unit of produced crude oil or natural gas is remeasured and the revised amortisation rate is applied starting from the new financial year.

Expenditure on oil and gas exploration licences on the Norwegian Continental Shelf is presented as a separate item of intangible assets, as required under IFRS 6 *Exploration for and Evaluation of Mineral Resources*, and <u>is not amortised</u> until the technical feasibility and commercial viability of extraction is demonstrated. For more information on the accounting policies concerning expenditure on exploration for and evaluation of mineral resources, see Note 7.11.1.

Except capitalised development expenditure, expenditure on intangible assets produced by the Group is not capitalised, but is charged to expenses in the period in which it was incurred.

	Amortisation method	Depreciation period/useful life
Development and production assets		
Licences (Lithuania, Poland)	Units-of-production method	The amortisation rate is estimated by reference to forecasts of hydrocarbon production from a given field (2P – proved and probable reserves).
Exploration and evaluation assets		
Oil and gas exploration licences on the Norwegian Continental Shelf	Not amortised until the technical feasibility and commercial viability of extraction is demonstrated	
Other intangible assets		
Software licences, patents and trademarks	Straight-line method	from 2 to 40 years.
Acquired CO_2 emission allowances Intangible assets under development	Not amortised	

The amortisation period and the amortisation method for an intangible asset are reviewed at the end of each financial year. Changes in the expected useful life or pattern of generation of the future economic benefits embodied in an intangible asset are reflected by changing the amortisation period or amortisation method, as appropriate, and are treated as changes in accounting estimates (see Note 5).

7.10 Impairment losses on non-financial non-current assets

As at the end of each reporting period, the Group assesses whether there is an indication of impairment of any of its assets. If the Group finds that there is such indication or if it is required to perform annual impairment tests, the recoverable amount of the asset is estimated.

The recoverable amount of an asset is equal to the higher of:

- the fair value of the asset or cash generating unit in which such asset is used less cost to sell, or
- the value in use of the asset or cash generating unit in which such asset is used.

The recoverable amount is determined for the individual assets unless a given asset does not generate separate cash flows largely independent from those generated by other assets or asset groups. If the carrying amount of an asset is higher than its recoverable amount, the value of the asset is impaired and an impairment loss is recognised, reducing the asset’s carrying amount to the established recoverable amount.

In assessing value in use, the projected cash flows are discounted to their present value (at a pre-tax discount rate) which reflects current market assessments of the time value of money and risks specific to the asset. Any impairment losses on non-financial assets used in operations are recognised under other expenses.

The Group assesses at the end of each reporting period whether there is any indication that previously recognised impairment of an asset no longer exists or should be reduced. If there is such indication, the Group again estimates the recoverable amount of the asset, and the recognised impairment loss is reversed if, and only if, there has been a change in the estimates used to determine the asset’s recoverable amount since the last impairment loss was recognised. In such a case, the carrying amount of the asset is increased up to its recoverable amount. Such increased amount may not exceed the carrying amount of the asset that would have been determined (net of accumulated amortisation or depreciation) had no impairment loss been recognised for the asset in previous years. Reversal of an impairment loss on a non-financial non-current asset is immediately recognised as other income. Following reversal of an impairment loss, in the subsequent periods the amortisation/depreciation charge for the given asset is adjusted so that its revised carrying amount, less residual value, can be regularly written off over the remaining useful life of that asset.

The Group offsets corresponding items of other income and expenses, including impairment losses and their reversals, in accordance with IAS 1 *Presentation of Financial Statements* (Section 34) and recognises them in the statement of comprehensive income on a net basis.

7.11 Non-current assets comprising production infrastructure used in crude oil and natural gas extraction

7.11.1 Expenditure on crude oil and natural gas exploration and evaluation (exploration and evaluation assets)

Exploration for and evaluation of mineral resources means the search for crude oil and natural gas resources and the determination of the technical feasibility and commercial viability of their extraction.

From the moment of obtaining the right to explore for hydrocarbons in a given area to the moment when the technical feasibility and commercial viability of extracting mineral resources is determined, expenditure directly connected with exploration for and evaluation of oil and gas resources is recognised in accordance with IFRS 6 *Exploration for and Evaluation of Mineral Resources* as a separate item of non-current assets. The expenditure includes the costs of acquisition of exploration rights, costs of exploration rigs, salaries and wages, consumables and fuel, insurance, costs of geological and geophysical surveys, as well as costs of other services.

The Group classifies its hydrocarbon exploration and evaluation assets as property, plant and equipment or intangible assets, depending on the type of the acquired assets, and applies this classification policy in a consistent manner.

Once the size of a deposit is confirmed and its production plan is approved, the expenditure is transferred to appropriate items of property, plant and equipment or intangible assets classified as development and production assets (see also Notes 7.9.1 and 7.9.3).

The Group examines the need to recognise impairment losses on exploration and evaluation assets by considering whether in relation to a specific area:

- the period for which the Group has the right to explore in the specific area has expired during the current financial year or will expire in the near future, and is not expected to be renewed,
- no substantial expenditure on further exploration for and evaluation of mineral resources is anticipated,
- exploration and evaluation of mineral resources have not led to discovery of commercially viable quantities of mineral resources and the Group has decided to discontinue such activities,
- sufficient data exist to indicate that, although development in the specific area is likely to proceed, the carrying amount of the exploration and evaluation asset is unlikely to be recovered in full from successful development or by sale.

If expenditure on property, plant and equipment under construction does not result in discovery of any reserves in the case of which extraction is technically feasible and economically viable, impairment losses on property, plant and equipment under construction are recognised and charged to profit or loss of the period in which it is found that commercial production from the deposits is not viable.

7.11.2 Assets related to development and production of crude oil and natural gas (development and production assets)

Assets related to production of crude oil and natural gas are recognised and measured in accordance with the accounting policies presented in Note 7.9.1 (property, plant and equipment) and in Note 7.9.3 (intangible assets).

Property, plant and equipment comprising the Group's production infrastructure include assets corresponding to the amount of the provision for decommissioning of oil and gas extraction facilities (see Note 7.24.1). Those assets are recognised in accordance with IAS 16 *Property, Plant and Equipment*, which states: "Cost of an item of property, land and equipment includes […] the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located, the obligation for which an entity incurs when the item is acquired or as a consequence of having used the item during a particular period for purposes other than to produce inventories during that period". The Group's obligation to incur costs of decommissioning of oil and gas extraction facilities results directly from the reasons specified in IAS 16. Under Section 63 of the standard, entities are obliged to review the value of the assets periodically, at least as at the end of each reporting period.

Revaluation of the assets may be caused by:
- change in the estimate of the cash outflow that will be necessary to ensure performance of the decommissioning obligation,
- change in the current market discount rate,
- change in the inflation rate.

7.12 Leases

Accounting policies applied since January 1st 2019 (IFRS 16)

The Group as a lessor

Finance leases are disclosed in the statement of financial position as receivables, at amounts equal to the net investment in the lease less the principal component of lease payments for a given financial year calculated based on a pattern reflecting a constant periodic rate of return on the lessor's net investment outstanding in respect of the finance lease.
Finance income from interest on a finance lease is disclosed in the relevant reporting periods based on a pattern reflecting a constant periodic rate of return on the net investment outstanding in respect of the finance lease.

Income from operating leases is recognised in the statement of comprehensive income on a straight-line basis over the lease term.

The Group as a lessee

The Group uses a single accounting model for leases under which the lessee recognises right-of-use assets and lease liabilities for all leases except short-term leases and leases of low-value assets.

Short-term leases are leases with a term of 12 months or less, containing no purchase options. In particular, the Group defines as short-term leases contracts made for an indefinite term which may be terminated on a short notice (up to 12 months) without any significant penalty imposed on the party.

The materiality level defined by the Group to identify low-value leases is PLN 20 thousand for entities whose functional currency is PLN, and the equivalent of USD 5 thousand for entities whose functional currency is other than PLN. The value of the underlying asset is measured based on the value of the asset when it is new, regardless of the age of the leased asset.
An asset is typically identified by being explicitly specified in a contract, but an asset can also be identified by being implicitly specified at the time it is made available for use by the customer. The Group recognises a right-of-use asset and a lease liability upon commencement of a contract under which control of the use of specified assets is transferred for a certain period of time. The date of commencement of a lease contract is the date on which the leased asset is made available to the Group as the lessee.

A right-of-use asset is initially measured at cost which includes:
- the amount of the lease liability initially measured,
- any lease payments made at or prior to commencement, less any lease incentives received,
- any initial direct costs incurred by the lessee,
- the initial estimate of the costs of dismantling and removing the underlying asset and restoring the site on which it is located.

Right-of-use assets are recognised in the statement of financial position as property, plant and equipment (Property, plant and equipment of the refining and marketing segment and Property, plant and equipment of the exploration and production segment). Perpetual usufruct right to land acquired for a consideration or received free of charge is recognised in the same manner as other lease contracts (as right-of-use assets and lease liabilities). To calculate assets and liabilities related to perpetual usufruct, the Group conducts an analysis to determine the anticipated term of perpetual usufruct. Once the anticipated term of perpetual usufruct has been determined, the lease liability is calculated in accordance with general principles. The perpetual usufruct rights to land recognised as at December 31st 2018 have been reclassified as right-of-use assets and recognised based on the amount determined before the date of transition to IFRS 16.

After the lease commencement date, the right-of-use asset is measured at cost less accumulated depreciation and accumulated impairment losses. If there is a lease modification, the right-of-use asset is adjusted to the remeasurement of the lease liability (reflecting changes resulting from the lease modification or revision of the discount rate).

The right-of-use asset is amortised on a straight-line basis over the period corresponding to the estimated useful life of the asset. In the case of perpetual usufruct rights to land for which the amount of right-of-use assets was calculated in accordance with the perpetual usufruct formula, depreciation is not calculated. For other perpetual usufruct rights to land, depreciation is calculated in accordance with the term of the agreement.

If the lease transfers the ownership of an asset to the Company before the end of the lease term, or if the cost of the right-of-use asset reflects that the Company will exercise a purchase option, the Company depreciates the right-of-use asset from the commencement date to the end of the useful life of the underlying asset. In other cases, the Company depreciates the right-of-use assets from the commencement date to the earlier of the end of the useful life of the asset or the end of the lease term.

Decommissioning costs are capitalised as part of the right-of-use asset and amortised over the estimated useful life of the asset. The fair value of decommissioning costs is estimated by the Group in accordance with the methodology specified in IFRIC 1.

When the Group establishes a provision for the contractually required inspection or overhaul of a leased asset (for example, rolling stock), it recognises the value of the established provision as an asset component (rights of use) at the date of its initial recognition. The component should be fully depreciated by the time of the first contracted repair or overhaul (this component is used against the last repair required under the lease contract). If more than one overhaul of the asset is required before the end of the lease contract, the Group capitalizes the costs of the overhaul and amortizes it until the next overhaul. The last overhaul required for a given contract results in the termination of the provision recognised at the commencement of the contract.

A lease liability is initially measured at the present value of lease payments outstanding at that date, including:

- fixed lease payments net of any lease incentives;
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date;
- amounts expected to be payable by the lessee under residual value guarantees;
- the exercise price of a purchase option if exercise of that option by the lessee is reasonably certain;
- lease termination penalties if the lessee is entitled to exercise the option to terminate the lease.

Lease payments do not include variable charges that depend on external factors. Variable lease payments not included in the initial measurement of a lease liability are recognised directly in profit or loss.

After initial recognition, the Group measures lease liabilities by:

- increasing the carrying amount to reflect interest on the lease liability,
- reducing the carrying amount to reflect the lease payments made, and
- remeasuring the carrying amount in order to take into account a lease reassessment or modification, or to take account of revised substantially fixed lease payments, including increases or reductions due to index changes in the case of index-linked contracts.

Upon lease commencement, and to the extent that the costs are not included in the carrying amount of another asset in accordance with applicable standards other than IFRS 16, the lessee recognises in profit or loss both interest on the lease liability and variable lease payments not included in the measurement of the lease liability in the period in which the event or condition that triggers payment occurs.

Lease payments are discounted using the interest rate implicit in the lease or the Group’s incremental borrowing rate when the interest rate implicit in the lease cannot be readily determined. To determine the incremental borrowing rate, the Group takes into account the type of contract, the duration of the contract, the currency of the contract and the potential margin it would have to pay to external financial institutions if it wanted to enter into such a transaction on the financial market.

The Group determined incremental borrowing rates in a breakdown by contract currency and taking into account contract term, based on the time brackets presented below:

- short-term contracts (12 months or shorter),
- contracts for a term of 1 to 2 years (inclusive),
- contracts for a term of 2 to 5 years (inclusive),
- contracts for a term of 5 to 10 years (inclusive),
- contracts for a term of more than 10 years.

The process of determining a current incremental borrowing rate consists of the following steps:

- analysis of the lessee’s current financing structure (e.g., the debt instruments held by the lessee and their terms);
- determination of the appropriate reference rate – assuming specific currency, economic conditions and lease term;
- analysis of other material lease terms, including the nature of the underlying assets.

To calculate discount rates for the purposes of IFRS 16, the Group assumes that the discount rate should reflect the cost that it would have to pay to borrow the funds necessary to purchase the leased asset.

The Group enters into lease contracts based on the three principal currencies to which it has assigned the base discount rate, i.e., PLN with the WIBOR base rate for a specific term, EUR with the EURIBOR base rate for a specific term, and USD with the LIBOR base rate for a specific term. These base rates apply to short-term foreign-currency leases. Base discount rates for long-term leases are determined on a case-by-case basis.

Accounting policies applied until December 31st 2018 (IAS 17)

A lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership of the leased asset onto the lessee. All other lease agreements are treated by the Group as operating leases.

The Group as a lessor

Finance leases are disclosed in the statement of financial position as receivables, at amounts equal to the net investment in the lease less the principal component of lease payments for a given financial year calculated based on a pattern reflecting a constant periodic rate of return on the lessor’s net investment outstanding in respect of the finance lease.
Finance income from interest on a finance lease is disclosed in the relevant reporting periods based on a pattern reflecting a constant periodic rate of return on the net investment outstanding in respect of the finance lease.

Income from operating leases is recognised in the statement of comprehensive income on a straight-line basis over the lease term.

The Group as a lessee

Assets used under a finance lease are recognised as assets of the Group and are measured at fair value as at the acquisition date or, if lower, the present value of the minimum lease payments. The resultant obligation towards the lessor is presented in the statement of financial position under Finance lease liabilities. Lease payments are broken down into the interest component and the principal component so as to produce a constant rate of interest on the remaining balance of the liability. Finance costs are recognised in the statement of comprehensive income.

Operating lease payments are recognised in the statement of comprehensive income on a straight-line basis over the lease term.

7.13 Inventories

Inventories are measured at the lower of cost and net realisable value.

Costs incurred in order to bring an inventory item to its present location and condition are accounted for in the following manner:

- materials and merchandise – at cost,
- finished goods and work-in-progress – at the cost of direct materials and labour and an appropriate portion of indirect production costs, established on the basis of normal capacity utilisation.

Net realisable value is the selling price realisable as at the end of the reporting period, net of VAT, excise duty and fuel charge, less any rebates, discounts and other similar items, and less the estimated costs to complete and costs to sell.

Decrease in inventories is established with the weighted average method.

Write-downs of products or semi-finished products, resulting from revaluation based on net realisable value, are posted to production costs. Write-downs of merchandise are charged to cost of merchandise sold in the statement of comprehensive income.

As at the end of each reporting period, the Group estimates (based on an individual assessment of the usefulness of inventories for the purposes of the Group's business) the amount of write-downs of stored materials. If crude oil and refining product prices go down, the Group recognises an inventory write-down to adjust the carrying amount of inventories, given the difference between their cost and net realisable value, in accordance with IAS 2. Write-downs of stored materials due to their impairment are charged to costs.

If the reason for making an inventory write-down no longer exists, the value of the inventory item is increased by an amount equal to the entire or part of the write-down. For the sake of clarity and because of the economic substance of the operation, if a write-down is used, its reversal is reflected in operating activities.

7.14 Emergency stocks

The Group maintains emergency stocks as required by the following acts:

- Act on Stocks of Crude Oil, Petroleum Products and Natural Gas, and on the Rules to be Followed in the Event of Threat to National Fuel Security or Disruptions on the Petroleum Market of February 16th 2007 (Dz.U. of 2007, No. 52, item 343, dated March 23rd 2007, as amended).
- Regulation of the Minister of Economy, Labour and Social Policy, on fuel stocks at energy sector companies, dated February 12th 2003 (Dz.U. No. 39, item 338, as amended).

These regulations define the rules for creating, maintaining and financing stocks of crude oil, petroleum products and fuels at energy sector companies.

Emergency stocks are disclosed as current assets given their short turnover cycle. The Group's emergency stocks include crude oil, petroleum products (liquid fuels), LPG and coal. In the refining and marketing segment, emergency stocks are maintained mainly by the Parent.

7.15 Cash and cash equivalents

Cash in hand and at banks, as well as short-term deposits held to maturity are measured at par value.

Cash and cash equivalents disclosed in the consolidated statement of cash flows comprise cash in hand, overdraft facilities, and those bank deposits maturing within three months which are not classified as investments.

7.16 Equity

Equity is recognised in the consolidated financial statements by categories, in accordance with applicable laws and constitutional documents of the consolidated entities.

The share capital of the LOTOS Group is the share capital of the Parent and is recognised at its par value, in the amount specified in the Company's Articles of Association and in the relevant entry in the National Court Register.

7.17 Bank borrowings, non-bank borrowings and notes

All bank borrowings, non-bank borrowings and notes are initially recognised at cost, equal to the fair value, less cost of obtaining the financing.

Following initial recognition, bank borrowings, non-bank borrowings and notes are measured at amortised cost, using the effective interest rate method. Amortised cost includes the cost of obtaining financing and discounts, as well as premiums received on settlement of the liability. Upon removal of the liability from the statement of financial position or recognition of impairment losses, gains or losses are recognised in the statement of comprehensive income.

7.18 Employee benefit obligations

7.18.1 Retirement severance payments, length-of-service awards and other employee benefits

In accordance with the Collective Bargaining Agreement, the Group's employees are entitled to length-of-service awards and severance payments upon retirement due to old age or disability, as well as death benefits.

Also, the employees, retired employees, and pensioners covered by the Group's social benefits are entitled to benefits from a separate social fund, which is established pursuant to applicable national regulations (Company Social Benefits Fund).

According to IAS 19 *Employee Benefits,* old-age and disability retirement severance payments, as well as contributions to the Company Social Benefits Fund to be used for payment of future benefits to retired employees, are classified as defined post-employment benefit plans, while length-of-service awards, death benefits, and benefits paid to currently retired employees are recognised under other employee benefits.

Present value of future post-employment benefit obligations as at the end of the reporting period is calculated by an independent actuary using the projected unit credit method, and represents the discounted value of future payments the employer will have to make to fulfil its obligations related the employees' services in previous periods (until the end of the reporting period), defined individually for each employee, taking into account employee turnover (probability of employees leaving), without including future employees.

The value of future employee benefit obligations includes length-of-service awards, old-age and disability retirement severance payments, as well as benefits paid to currently retired employees and the amount of estimated death benefits.

Length-of-service awards are paid after a specific period of employment. Old-age and disability retirement severance payments are one-off and paid upon retirement. Amounts of severance payments and length-of-service awards depend on the length of employment and the average remuneration of an employee. The amount of death benefit depends on the length of employment of the deceased employee, and the benefit is payable to the family, in accordance with the rules set forth in the Polish Labour Code.

Actuarial gains and losses on post-employment benefits are recognised in other comprehensive income.

Employees of the Group companies are also entitled to holidays in accordance with the rules set forth in the Polish Labour Code. The Group calculates the cost of employee holidays on an accrual basis using the liability method. The value of compensation for unused holidays is recognised in the Group's accounting records based on the difference between the balance of holidays actually used and the balance of holidays used established proportionately to the passage of time, and disclosed in the financial statements as, respectively, current or non-current liabilities under other employee benefits during employment.

Obligations under other employee benefits during employment also include bonuses and awards granted as part of the Group's incentive pay systems.

For detailed information on employee benefits, see Note 24, containing the individual items of employee benefit obligations and employee benefits expense, actuarial assumptions, as well as an analysis of the sensitivity of estimates to changes of those assumptions. The Group recognises the cost of discount on its employee benefit obligations in finance costs.

Given the different nature of retirement plans at the AB LOTOS Geonafta Group companies, and their immaterial effect on the Group's obligations under length-of-service awards and post-employment benefits, those companies' obligations are presented separately under Obligations under length-of-service awards and post-employment benefits at foreign companies.

7.18.2 Profit allocated for employee benefits and special accounts

In accordance with the business practice in Poland, shareholders have the right to allocate a part of profit to employee benefits by making contributions to the social benefits fund and to other special accounts. However, in the financial statements such distributions are charged to operating expenses of the period to which the profit distribution relates.

7.19 Borrowing costs

Borrowing costs (i.e. interest and other costs incurred in connection with borrowings) are recognised as an expense in the period in which they were incurred, with the exception of costs directly attributable to the acquisition, construction or production of a qualifying asset (including exchange differences where they are regarded as an adjustment to interest costs, and exchange differences on fees and commissions), which are capitalised as part of the cost of such asset (a qualifying asset is one that necessarily takes a substantial period of time to get ready for its intended use or sale).

To the extent that funds are borrowed specifically for the purpose of acquiring a qualifying asset, the amount of the borrowing costs which may be capitalised as part of such asset is determined as the difference between the actual borrowing costs incurred in connection with a given credit facility or loan in a given period and the proceeds from temporary investments of the borrowed funds.

To the extent that funds are borrowed without a specific purpose and are later allocated for the acquisition of a qualifying asset, the amount of the borrowing costs which may be capitalised is determined by applying an appropriate capitalisation rate to the expenditure on that asset.

7.20 Financial assets and liabilities

Financial assets

The Group classifies financial assets into the following measurement categories:
- measured at amortised cost,
- measured at fair value through profit or loss,
- measured at fair value through other comprehensive income.

The classification depends on the model adopted by the Group to manage financial assets and on the terms of contractual cash flows. The Group reclassifies investments in debt instruments only when the management model changes.

The Group assesses the model of managing debt financial assets (including trade receivables) based on the following three possible criteria:
- held to collect cash flows,
- held to collect cash flows and sell,
- other (effectively meaning assets held for disposal).

Measurement upon initial recognition

On initial recognition, the Group measures a financial asset at fair value plus transaction costs that are directly attributable to the acquisition of the financial asset if it is not measured at fair value through profit or loss. Transaction costs related to financial assets at fair value through profit or loss are recognised in profit or loss.

Derecognition

Financial assets are recognised when the Group becomes a party to the contractual provisions covering the instrument. Financial assets are derecognised when the rights to receive cash flows from financial assets have expired or have been transferred, and the Group has transferred substantially all risks and rewards related to ownership of assets.

Measurement after initial recognition

Financial assets measured at amortised cost

Debt instruments held to collect contractual cash flows which comprise solely payments of principal and interest ("SPPI") are measured at amortised cost. Interest income is calculated using the effective interest rate method and recognised under interest income in profit or loss. Impairment losses are recognised in accordance with the accounting policy set out in Note 7.21 and presented under Impairment losses on financial assets.

In this category, the Group classifies in particular:
- trade receivables other than factoring receivables within the factoring limit granted to the Group,
- loans that meet the SPPI classification test and, in line with the business model, are recognised as 'held to collect cash flows',
- cash and cash equivalents,
- deposits, security deposits, investment receivables and other receivables.

Financial assets measured at amortised cost are classified as non-current assets if they mature more than 12 months after the reporting date.

If the effect of time value of money is material, the value of receivables is determined by discounting the projected future cash flows to their present value using a pre-tax discount rate reflecting the current market estimates of the time value of money. If the discount method is applied, an increase in receivables over time is recognised as finance income.

Financial assets measured at fair value through other comprehensive income

Debt instruments giving rise to cash flows which are solely payments of principal and interest and which are held to collect contractual cash flows and to sell are measured at fair value through other comprehensive income. Changes in the carrying amount are recognised through other comprehensive income, except for impairment gains and losses, interest income and foreign exchange gains and losses, which are recognised in profit or loss. If a financial asset is derecognised, the total gain or loss previously recognised in other comprehensive income is reclassified from equity to profit or loss and recognised as other gains/(losses). Interest income on such financial assets is calculated using the effective interest rate method and recognised under 'interest income'. Impairment due to expected credit losses is recognised in accordance with the accounting policy applicable to impairment of financial assets and presented under Impairment allowance for expected credit losses.

Financial assets at fair value through profit or loss

Assets which do not meet the criteria for measurement at amortised cost or at fair value through other comprehensive income are measured at fair value through profit or loss.

In particular, the Group classifies loans that do not meet the SPPI test (i.e. cash flows from these loans are not solely payments of principal and interest) at fair value through profit or loss.
The fair value of trade receivables subject to factoring within the limit available as at the last day of the reporting period is determined on the basis of the factoring agreement with the factor.

Gain or loss on fair value measurement of debt investments is recognised in profit or loss and presented under 'Gains/(losses) on changes in the fair value of financial instruments' in the period in which they arise. Gains/(losses) on fair value measurement include interest received on financial instruments classified as measured at fair value.

The instruments classified at fair value through profit or loss include the derivative instruments described in Note 7.22.

Equity instruments

Interests in other entities include such equity instruments in other entities which do not confer control, joint control or significant influence over such entities.

Interests in other entities are initially recognised at fair value plus transaction costs. Subsequently, they are measured at fair value. For all its investments, the Group has elected to present gains and losses on changes in the fair value of equity instruments in other comprehensive income as such investments are not held for short-term returns. If such election is made, gains and losses on changes in fair value are not reclassified to profit or loss when the investment is derecognised. Impairment losses (and reversals of impairment losses) on equity investments measured at fair value through other comprehensive income are not presented separately from other changes in fair value.

Dividends from such investments are recognised in profit or loss once the Company's right to receive payment is established.

Financial liabilities

Financial liabilities are initially recognised at fair value less transaction costs and subsequently at amortised cost using the effective interest rate method.

Under financial liabilities at amortised cost, the Group recognises mainly trade payables, investment commitments and other liabilities, borrowings, and debt instruments. Such liabilities are recognised in the statement of financial position under: Bank borrowings, non-bank borrowings, notes and lease liabilities; Trade payables; Other liabilities and provisions.

Financial liabilities denominated in foreign currencies are translated into the functional currency using the exchange rate at the date of the transaction. Foreign exchange gains and losses on settlement of those liabilities and translation at the exchange rates existing at the reporting date are recognised in profit or loss unless their recognition in other comprehensive income is deferred when they qualify as cash flow hedging.

If contractual terms of a financial liability are modified in a way that does not result in derecognition of the existing liability, the gain or loss is immediately recognised in profit or loss. Profit or loss is calculated as the difference between the present value of modified and original cash flows, discounted using the original effective interest rate of the liability.

7.21 Impairment of financial assets

As at the last day of each reporting period, the Group estimates expected credit losses on debt instruments measured at amortised cost and at fair value through other comprehensive income, whether or not there has been any evidence of impairment. The Group applies the following impairment recognition approaches:

- general (basic) approach,
- simplified approach.

With respect to short-term trade receivables without a significant financing component, the Group applies the simplified approach and measures impairment losses in the amount of credit losses expected over the entire life of the receivable since its initial recognition. The Group applies the provision matrix for calculating impairment losses on trade receivables classified in different age groups or delinquency periods.

For the purpose of determining expected credit losses, receivables are grouped based on the similarity of credit risk characteristics. To determine the overall default rate, an analysis of collectability of receivables for the last three years is carried out. Default rates are calculated for the following periods:

- up to 30 days;
- from 30 to 90 days;
- from 90 to 180 days;
- more than 180 days.

To determine the default rate for a given period, the amount of written off trade receivables is compared with the amount of outstanding receivables. The calculation takes into account the effect of future factors on the amount of credit losses.

Impairment losses are calculated taking into account default rates adjusted for the effect of future factors and the amount of receivables outstanding at the reporting date for each period.

Material individual items of receivables (representing more than 5% of total receivables) are tested on a case-by-case basis.

Intra-group receivables carry a different credit risk than receivables from third parties due to existing links and control. In the event of financial difficulties, the Group usually supports its subsidiaries. Therefore, poor financial performance and position of a subsidiary do not necessarily translate into higher credit risk. In such a case, the Group estimates impairment based on individual analysis. In other cases, where the number of items is significant, they may form a separate portfolio of intra-group receivables based on a portfolio analysis.

The Group applies a three-stage impairment model with respect to financial assets other than trade receivables:

- Stage 1 – financial instruments that have not had a significant increase in credit risk since initial recognition. Expected credit losses are determined based on the probability of default within 12 months (i.e. the total expected credit loss is multiplied by the probability that the loss will occur over the next 12 months);
- Stage 2 – financial instruments that have had a significant increase in credit risk since initial recognition, but there is no objective evidence of impairment; expected credit losses are calculated based on the probability of default over the lifetime of the asset;
- Stage 3 – instruments for which there is objective evidence of impairment.

Trade receivables are included in Stage 2 or Stage 3:

- Stage 2 – trade receivables for which a simplified approach to lifetime expected credit losses was applied, except for trade receivables included in Stage 3;
- Stage 3 – trade receivables that are more than 180 days past due or are identified as not serviced.

To the extent necessary – according to the general approach – to assess whether there has been a significant increase in credit risk, the following factors are taken into account by the Group:

- delinquency period of at least 30 days;
- any legislative, technological or macroeconomic changes with a material adverse effect on the debtor;
- a significant adverse event has been reported concerning the loan or another loan taken by the same debtor from another lender, such as termination of a loan agreement, breach of its terms and conditions, or its renegotiation due to financial difficulties, etc.;
- the debtor has lost a significant customer or supplier or has experienced other adverse developments on its market.

Financial assets are written off, in whole or in part, when the Group has used practically all measures to collect them and determines that they cannot be reasonably expected to be recovered. This is usually the case when the asset is past due 180 days or more.

7.22 Derivative financial instruments

Derivative instruments used by the Group to hedge against currency risk include in particular FX forwards. The Group also uses commodity swaps to hedge its exposure to raw material and petroleum product price risk, and in the case of sale of products at fixed prices with an embedded option it uses commodity options. The Group uses futures contracts to manage its exposure to prices of carbon dioxide (CO_2) emission allowances, and interest rate swaps (IRSs) and forward rate agreements (FRAs) to hedge its interest rate exposure. Such financial derivatives are measured at fair value in line with the fair value hierarchy.

Based on the fair value measurement methods applied, the Group classifies its individual financial assets and liabilities according to the following levels (fair value hierarchy):

- Level 1: Financial assets and liabilities whose fair values are measured directly on the basis of quoted prices (used without adjustment) from active markets for identical assets or liabilities.
- Level 2: Financial assets and liabilities whose fair values are measured using measurement models when all significant input data is observable on the market either directly (unadjusted market prices) or indirectly (data based on market prices).
- Level 3: Financial assets and liabilities whose fair values are measured using measurement models when the input data is not based on observable market data (unobservable input data).

Derivatives outside the hedge accounting are classified as: financial assets measured at fair value through profit or loss and financial liabilities measured at fair value through profit or loss, and are measured at fair value with gains and losses on changes in fair value recognised in profit or loss.

The fair value of commodity swaps is established by reference to discounted cash flows connected with the transactions, calculated on the basis of the difference between the average market price and the transaction price. The fair value is established on the basis of prices quoted on active markets, as provided by an external consultancy. (Level 2 in the fair value hierarchy).

Fair value of commodity options is established by reference to cash flows connected with the transactions, calculated on the basis of the difference between the option premium paid and the current market price of the option. The fair value is established on the basis of prices quoted on active markets provided by an external consultancy (Level 2 in the fair value hierarchy).

The fair value of spots, forwards and currency swaps in the case of Grupa LOTOS S.A. is established by reference to future discounted cash flows from the transactions, calculated on the basis of the difference between the forward rate and the transaction price. The forward rate is calculated on the basis of the fixing rate quotations of the National Bank of Poland and the interest rate curve implied in FX swaps (Level 2 in the fair value hierarchy). The fair value of currency forwards held by LOTOS Asfalt Sp. z o.o. is presented based on the information provided by the banks which are counterparties to those transactions (Level 2 in the fair value hierarchy).

The fair value of FRAs in the case of Grupa LOTOS S.A. is established by reference to future discounted cash flows connected with the transactions, calculated on the basis of the difference between the forward rate and the transaction price. The forward rate is calculated using the zero-coupon interest rate curve based on 6M or 3M LIBOR, depending on the type of transaction (Level 2 in the fair value hierarchy). The fair value of FRAs held by LOTOS Asfalt Sp. z o.o. and AB LOTOS Geonafta is presented based on the information provided by the banks which are counterparties to those transactions (Level 2 in the fair value hierarchy).

To manage risk related to carbon dioxide emission allowances, the Group assesses, on a case-by-case basis, the risk of expected deficit of emission allowances allocated free of charge under the carbon emission reduction system and manages the risk of changes in the price of emission allowance traded on an active market.

To hedge against the risk of changes in the prices of CO_2 emission allowances, the Group enters into EUA, CER and ERU futures contracts. The fair value of the contracts is estimated based on the difference between the market price of a contract as quoted on the valuation date by the Intercontinental Exchange (ICE) and the actual transaction price (Level 1 in the fair value hierarchy).

If required, futures contracts to purchase carbon dioxide emission allowances open as at the last day of the reporting period are settled by the Group through physical delivery, with the intention to potentially use the allowances to offset actual CO_2 emissions. The valuation of futures contracts to purchase carbon dioxide emission allowances that are planned to be settled through physical delivery is not disclosed under financial assets/liabilities in the financial statements. However, the Group internally monitors and performs the valuation of its open futures positions as part of an overall assessment of the effectiveness of its CO_2 risk management (off the balance sheet).

For information on the limit of free carbon dioxide emission allowances allocated to the Group and description of the Group's risk management process, see Note 27.2.

In the statement of financial position, financial derivatives are presented separately as either current or non-current, depending on the expected time of realisation of assets and liabilities. If their amount is immaterial, they are recognised under other assets and liabilities.

The Group applies hedge accounting. Changes in the fair value of derivative financial instruments designated to hedge cash flows, to the extent representing an effective hedge, are posted directly to other comprehensive income. For more information on hedge accounting, see Note 7.23.

7.23 Hedge accounting

The Group has elected the option to continue to apply the existing requirements of IAS 39 as of January 1st 2019 and not to apply the new hedge accounting requirements of IFRS 9 until the International Accounting Standards Board has completed work on accounting for macro hedging.

The Parent applies cash flow hedge accounting for USD-denominated borrowings designated as a hedging instrument for future highly probable revenues from the sale of USD-denominated raw materials and petroleum products exposed to the risk of USD/PLN exchange rate movements.

The objective of cash flow hedge accounting is to guarantee a specific Polish złoty value of revenue generated in USD. The hedged items comprise a number of highly probable and planned USD-denominated refined product sale transactions, in particular the first portion of revenue (up to the amount of the designated principal repayment) in USD generated in a given calendar month, or if the amount of revenue in a given month is lower than the amount of the designated principal payment – the first portion of revenue generated in three successive months. If a subsequent portion of revenue is designated in a given calendar month, the hedged item is the first portion of revenue generated after the previously designated portion of revenue in USD in a given calendar month, or if the amount of revenue in a given month is lower than the amount of the designated principal repayment – a subsequent portion of revenue generated in three successive months. A hedged item is linked to relevant hedging instruments based on an individual document designating the hedging relationship.

The designated hedging instruments cover an obligation to repay a USD-denominated credit facility, whose settlement dates fall on business days of specified calendar months, in accordance with the principal repayment schedule.

Changes in the fair value of financial instruments designated as cash flow hedges are posted directly to other comprehensive income to the extent they represent an effective hedge, while the ineffective portion is charged to other finance income or costs in the reporting period.

At the time when a hedge is undertaken, the Group formally designates and documents the hedging relationship, as well as its risk management objective and strategy for undertaking the hedge. The relevant documentation identifies: (i) the hedging instrument, (ii) the hedged item or transaction, (iii) the nature of the hedged risk, and (iv) specifies how the Company will assess the hedging instrument’s effectiveness in offsetting changes in the fair value of the hedged item or cash flows attributable to the hedged risk. The hedge is expected to be highly effective in offsetting changes in fair value or cash flows attributable to the hedged risk. The hedge is assessed on an ongoing basis to determine whether it remains highly effective during all the reporting periods for which it was undertaken.

7.24 Provisions

Provisions are recognised when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and the amount of the obligation can be reliably estimated. If the Group anticipates that the costs for which provisions have been recognised will be recovered, e.g. under an insurance agreement, the recovery of such funds is recognised as a separate asset, but only when such recovery is practically certain to occur. The cost related to a given provision is disclosed in the statement of comprehensive income net of any recoveries. If the effect of the time value of money is significant, the amount of provisions is determined by discounting projected future cash flows to their present value at a pre-tax discount rate reflecting the current market estimates of the time value of money and risks, if any, specific to a given obligation. If the discount method is applied, an increase in the provision as a result of passage of time is recognised as finance costs. Provisions, other than provisions for decommissioning and site restoration costs, are charged against operating expenses, other expenses, or finance costs, depending on what circumstances the future obligation relates to.

7.24.1 Provisions for decommissioning and restoration costs

Provisions for decommissioning and restoration costs are recognised when the Group has an obligation to decommission oil and gas extraction facilities or to demolish, disassemble or remove other property, plant and equipment and restore the site to its original condition, and when a reliable estimate can be made of the amount of the obligation.

If a decommissioning obligation arises with respect to new property, plant and equipment, such as production and transport infrastructure (pipelines) or refinery installations, it is recognised on completion of construction or installation. If a decommissioning obligation arises with respect to a production well, it is recognised on completion of drilling, irrespective of the hydrocarbon flow recorded.

A decommissioning obligation may be further adjusted over the useful life of a well, production or transport infrastructure, etc. to reflect changes in applicable laws or a decision to suspend certain operations. The recognised amount of the obligation is the present value of future expenditures, estimated for the local conditions and requirements.

On recognition of a decommissioning obligation, a matching decommissioning asset is recognised in the same amount (in an appropriate item of property, plant and equipment), which is subsequently depreciated in line with the asset subject to decommissioning.

The amount of the decommissioning provision and its corresponding asset is adjusted to reflect changes to the present value of estimated decommissioning and restoration costs, other than provision discount reversals. Adjustments are also made for foreign exchange gains or losses arising from translation of a decommissioning obligation denominated in a foreign currency when it is certain that the obligation will be settled in that currency.

Periodic discount unwinding is recognised as finance costs in the statement of comprehensive income.
Deferred tax assets and liabilities are recognised in respect of the decommissioning provision and the corresponding decommissioning asset.

Under the Polish Geological and Mining Law of February 4th 1994 (Dz.U.05.228.1947, as amended), the Group is required to operate an Oil and Gas Extraction Facility Decommissioning Fund, whose financial resources may only be used to cover the cost of decommissioning of an oil and gas extraction facility or its designated part.

The amount of contribution to the Fund is calculated separately for each facility and represents an equivalent of 3% or more of the depreciation charge recognised on the facility’s property, plant and equipment, determined in accordance with applicable corporate income tax laws. Companies are required to deposit the contributions in a separate bank account until decommissioning start date.

7.25 Trade and other payables, and accruals and deferred income

Short-term trade and other payables are reported at nominal amounts payable.

The Group derecognises a financial liability when it is extinguished, that is when the obligation specified in the contract is either discharged or cancelled or expires. When a debt instrument between the same parties is replaced by another instrument whose terms are substantially different, the Group treats such replacement as if the former financial liability was extinguished and recognises a new liability. Similarly, material modifications to the terms of a contract concerning an existing financial liability are presented as extinguishment of the former and recognition of a new financial liability. Any differences in the respective carrying amounts arising in connection with the replacement are charged to profit or loss.

Other non-financial liabilities include in particular value added tax, excise duty and fuel charge liabilities to the tax authorities and liabilities under received prepayments, which are to be settled by delivery of goods or tangible assets, or performance of services. Other non-financial liabilities are measured at nominal amounts payable.

Accrued expenses are recognised at probable amounts of current-period liabilities. The Group discloses accruals and deferred income under other non-financial liabilities or, if they are related to employee benefits, under employee benefit obligations.

7.26 Grants

If there is reasonable certainty that a grant will be received and that all related conditions will be fulfilled, grants are recognised at fair value.

If a grant concerns a cost item, it is recognised as income in matching with the expenses it is to compensate for. If it concerns an asset, its fair value is recognised as deferred income, and then it is written off annually in equal parts through the statement of comprehensive income over the estimated useful life of the asset.

7.27 Joint arrangements

IFRS 11 defines a joint arrangement as a contractual arrangement under which the business of two or more parties is subject to joint control. Joint control exists only when decisions about the relevant activities under the arrangement require the unanimous consent of all the parties.

Joint arrangements are classified into two types – joint operations and joint ventures. The distinction between the two is based on different rights and obligations of the parties under the joint arrangement.

If under the joint arrangement the parties with joint control of the arrangement have rights to the net assets of the arrangement, then it is a joint venture, which in principle requires the establishment of a separate vehicle. The Group's joint ventures include LOTOS-Air BP Polska Sp. z o.o., a jointly-controlled entity operating in the refining and marketing segment, and the following entities operating in the exploration and production segment: Baltic Gas Sp. z o.o., Baltic Gas spółka z ograniczoną odpowiedzialnością i wspólnicy sp.k., and UAB Minijos Nafta.

Investments in joint ventures measured in accordance with IFRS 11 *Joint Arrangements* are accounted for with the equity method and recognised in the statement of financial position at cost, adjusted for subsequent changes in the Group's share of the net assets of such entities, less impairment losses, if any. The statement of comprehensive income reflects the share in the results of operations of such entities, and if a change is recognised directly in their equity, the Group recognises its share in each change and, if applicable, discloses it in the statement of changes in equity and in the statement of comprehensive income under other comprehensive income, net.

Joint arrangements under which the parties with joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement, are defined as joint operations.

The Group holds interests in joint operations in the exploration and production segment through a Norwegian company, LOTOS Exploration and Production Norge AS, a subsidiary of LOTOS Upstream Sp. z o.o. In accordance with IFRS 11, the Group recognises its interest in assets, liabilities, costs and expenses related to its joint operations in the Heimdal field in Norway.

Considering the IFRS 11 criteria, not all operations involving a number of participants are joint operations or joint ventures as defined in the standard. In some situations, the Group is a party to an arrangement whose nature is that of joint operations, but has no joint control of the arrangement. This happens when there is more than one combination of the parties that can agree to make significant decisions about the operations. For the purposes of correct recognition of revenues, costs, assets and liabilities, the Group does not apply IFRS 11 in such situations, but other relevant IFRSs, taking into account its interest in the arrangement underlying the operations.

The Group is a party to arrangements involving joint operations in the Sleipner fields in Norway which are not subject to IFRS 11. The Group recognises the operations proportionately, i.e. according to its share in revenue, costs, receivables and liabilities relating to joint exploration and production of crude oil and natural gas in the Sleipner field. Therefore, there is no practical difference in recognising transactions relating to operations under the Sleipner licences with respect to the requirement to recognise joint operations under the Heimdal licence, which meet the definition of joint operations in accordance with IFRS 11.

7.28 Segment reporting

For management purposes, the LOTOS Group is divided into business units which correspond to the business segments, whereas for financial reporting purposes the Group's operating activity comprises two main reportable operating segments:

- exploration and production segment – comprising activities related to the acquisition of crude oil and natural gas reserves, and crude oil and natural gas production,
- refining and marketing segment – comprising the production and processing of refined petroleum products and their wholesale and retail sale, as well as auxiliary, transport and service activities.

The reportable operating segments are identified at the Group level. The Parent is included in the refining and marketing segment.
Segment performance is assessed on the basis of revenue, EBIT and EBITDA.
EBIT is operating profit/(loss).
EBITDA is operating profit/(loss) before depreciation and amortisation.

The segments' revenue, EBIT and EBITDA do not account for intersegment adjustments.

Financial information of the operating segments used by the chief operating decision makers to assess the segments' performance is presented in Note 8.

7.29 Contingent liabilities and assets

In line with the policies applied by the Group, consistent with IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*, a contingent liability is understood as:

- a possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity, or
- a present obligation that arises from past events but is not recognised in the financial statements because:
  - (i) it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation, or
  - (ii) the amount of the obligation cannot be measured with sufficient reliability.

Contingent liabilities are not recognised in the statement of financial position, however information on contingent liabilities is disclosed, unless the likelihood of the outflow of resources embodying economic benefits is negligible.

In accordance with the IFRS, the Group defines a contingent asset as a possible asset that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity.

Contingent receivables are not recognised in the statement of financial position, but information on them is disclosed if the inflow of resources embodying economic benefits is likely to occur.

Examples of contingent assets and liabilities include liabilities or receivables related to pending court disputes whose future impacts are neither known nor fully controlled by the entity. For more information on pending court disputes and other contingent liabilities, see Note 29.1 and Note 29.2, respectively.

7.30 Carbon dioxide (CO_2) emission allowances

CO_2 emission allowances are presented by the Group in its financial statements in accordance with the net liability approach, which means that the Group recognises only those liabilities that result from exceeding the limit of emission allowances granted. The Group reviews the limits granted to it on an annual basis. The liability is recognised only after the Group actually exceeds the limit. Income from sale of unused emission allowances is recognised in the statement of comprehensive income at the time of sale.

Additionally purchased emission allowances are measured at acquisition cost less impairment, if any, taking into consideration the residual value of allowances, and presented as intangible assets.

If purchased allowances are used to cover a deficit existing on the date of settling the annual limit of emission allowances, the allowances thus used are offset at carrying amount with the liability previously recognised for covering the deficit.

7.31 Energy certificates

Property rights arising under energy certificates are presented as merchandise.

Purchased energy certificates are recognised at cost. Energy certificates granted free of charge are recognised as merchandise at fair value, with a corresponding entry under liabilities/deferred income made in grants.

The value of surrendered energy certificates is measured at the weighted average price and charged to operating expenses in proportion to the volume of electricity sold and consumed. In the case of certificates received free of charge, the relevant grant is accounted for in proportion to the amount credited to other income.

Sales of energy certificates are recognised as sales of merchandise and credited to revenue from sale of merchandise.

Impairment losses on energy certificates are made as at the reporting date and charged to other expenses.

To give effect to the matching principle with respect to expenses and revenue from consumption and sale of electricity, and a lack of purchased or granted property rights, a provision for energy certificates is recognised. The amount of the provision is charged to operating expenses.

8. Business segments

	Exploration & production segment		Refining & marketing segment		Consolidation adjustments		Consolidated	
	2019	2018	2019	2018	2019	2018	2019	2018
Revenue:	**1,186.7**	**1,463.7**	**28,826.2**	**29,171.9**	**(519.6)**	**(513.9)**	**29,493.3**	**30,121.7**
Intersegment sales	456.1	461.3	63.5	52.6	(519.6)	(513.9)	-	-
External sales	730.6	1,002.4	28,762.7	29,119.3	-	-	29,493.3	30,121.7
Operating profit/(loss) (**EBIT**)	**487.2**	**1,046.2**	**1,474.7**	**1,928.7**	**7.8**	**6.4**	**1,969.7**	**2,981.3**
Depreciation and amortisation	236.2	225.1	673.1	497.6	-	-	909.3	722.7
Operating profit/(loss) before depreciation and amortisation (**EBITDA**)	**723.4**	**1,271.3**	**2,147.8**	**2,426.3**	**7.8**	**6.4**	**2,879.0**	**3,704.0**
Total assets as at the end of the reporting period	**4,899.4**	**4,604.6**	**21,159.7**	**19,751.9**	**(2,387.0)**	**(2,132.6)**	**23,672.1**	**22,223.9**

8.1 Revenue

Type of goods or services	Exploration & production segment		Refining & marketing segment		Consolidated	
	2019	2018	2019	2018	2019	2018
Revenue from contracts with customers:	**730.6**	**1,002.4**	**28,893.9**	**29,210.9**	**29,624.5**	**30,213.3**
Products and services	729.0	1,001.0	27,618.5	27,745.1	28,347.5	28,746.1
Merchandise and materials	1.6	1.4	1,275.4	1,465.8	1,277.0	1,467.2
Effect of cash flow hedge accounting	-	-	(131.2)	(91.6)	(131.2)	(91.6)
Total revenue	**730.6**	**1,002.4**	**28,762.7**	**29,119.3**	**29,493.3**	**30,121.7**

Sales by products, merchandise and services	Exploration & production segment		Refining & marketing segment		Consolidated	
	2019	2018	2019	2018	2019	2018
Gasolines	-	-	4,346.6	4,450.5	4,346.6	4,450.5
Naphtha	-	-	936.9	1,157.1	936.9	1,157.1
Diesel oils	-	-	16,246.8	15,009.3	16,246.8	15,009.3
Bunker fuel	-	-	211.0	201.2	211.0	201.2
Light fuel oil	-	-	618.8	640.4	618.8	640.4
Heavy fuel oil	-	-	1,416.6	1,824.1	1,416.6	1,824.1
Aviation fuel	-	-	1,114.2	1,421.7	1,114.2	1,421.7
Lubricants	-	-	291.4	278.5	291.4	278.5
Base oils	-	-	460.1	587.3	460.1	587.3
Bitumens	-	-	1,223.1	1,309.7	1,223.1	1,309.7
LPG	-	-	513.0	543.8	513.0	543.8
Crude oil	233.9	285.4	-	320.8	233.9	606.2
Natural gas	434.6	661.8	1.0	0.3	435.6	662.1
Xylene fraction	-	-	235.4	250.4	235.4	250.4
Other refinery products, merchandise and materials	-	0.6	338.0	312.7	338.0	313.3
Other products, merchandise and materials	8.3	6.6	568.2	530.8	576.5	537.4
Services	53.8	48.0	372.8	372.3	426.6	420.3
Effect of cash flow hedge accounting	-	-	(131.2)	(91.6)	(131.2)	(91.6)
Total	**730.6**	**1,002.4**	**28,762.7**	**29,119.3**	**29,493.3**	**30,121.7**

Geographical structure od sales	Exploration & production segment		Refining & marketing segment		Consolidated	
	2019	2018	2019	2018	2019	2018
Poland	8.0	7.0	24,132.1	23,267.6	24,140.1	23,274.6
Belgium	-	-	338.5	536.8	338.5	536.8
Czech Republic	-	-	270.3	351.9	270.3	351.9
Denmark	-	-	169.3	259.4	169.3	259.4
Netherlands	-	-	1,752.1	2,315.0	1,752.1	2,315.0
Germany	47.3	69.9	298.0	462.6	345.3	532.5
Norway	651.5	860.1	71.4	106.5	722.9	966.6
Sweden	-	-	548.7	543.9	548.7	543.9
United Kingdom	20.4	64.1	365.0	458.1	385.4	522.2
Other countries	3.4	1.3	948.5	909.1	951.9	910.4
Effect of cash flow hedge accounting	-	-	(131.2)	(91.6)	(131.2)	(91.6)
Total	**730.6**	**1,002.4**	**28,762.7**	**29,119.3**	**29,493.3**	**30,121.7**

In 2018–2019, there were no customers with a share in excess of 10% of the LOTOS Group's total revenue.

9. Income and expenses

9.1 Expenses by nature

	Note	2019	2018 (restated data)
Depreciation and amortisation	8	909.3	722.7
Raw materials and consumables used [(1)]		22,283.3	22,937.5
Services		1,468.1	1,549.0
Taxes and charges		594.6	567.9
Employee benefits expense	9.2	920.4	761.6
Other expenses by nature		235.8	266.6
Merchandise and materials sold		1,046.5	1,280.7
Total expenses by nature		**27,458.0**	**28,086.0**
Change in products and adjustments to cost of sales		107.5	(689.3)
Total		**27,565.5**	**27,396.7**
including:			
Cost of sales		25,649.1	25,619.0
Distribution costs		1,425.6	1,355.6
Administrative expenses		490.8	422.1

[(1)] Including PLN 66.0m of foreign exchange gains related to operating activities, recognised as cost of sales (2018: PLN 66.2m of foreign exchange losses), see Note 26.2.

9.2 Employee benefits expense

	Note	2019	2018
Current service costs		685.2	578.9
Social security and other employee benefits		195.7	167.3
Length-of-service awards, retirement and other post-employment benefits	24.2	39.5	15.4
Total employee benefits expense	**9.1**	**920.4**	**761.6**
Change in products and adjustments to cost of sales		(3.1)	(4.0)
Total		**917.3**	**757.6**
including:			
Cost of sales		547.9	453.5
Distribution costs		50.1	41.1
Administrative expenses		319.3	263.0

9.3 Other income

	Note	2019	2018
Provisions		**39.7**	**-**
- remeasurement of provision for contingent payments − Sleipner assets acquisition agreement	25.1	44.5	-
- other provisions		(4.8)	-
Reversal of impairment loss on property, plant and equipment and intangible assets:		**61.1**	**271.7**
Reversal of impairment losses:		**105.8**	**373.5**
• on oil and gas development assets: Norway: YME field	13.2.2	**105.4**	**349.5**
• oil and gas production assets: Lithuania: Girkaliai and Nausodis fields	13.2.2	**-**	**23.5**
• refinery and other non-current assets:		**0.4**	**0.5**
Impairment losses:		**(44.7)**	**(101.8)**
• oil and gas production assets:	13.2.2	**(12.1)**	**(67.7)**
- Norway: Heimdal assets		-	(48.7)
- Lithuania: Vėžaičiai, Girkaliai fields		(8.9)	(18.5)
- Poland: B-8 field		(3.2)	(0.5)
• oil and gas exploration and evaluation assets:	13.2.1	**(3.8)**	**(0.4)**
- Norway: PL866 licence		(3.8)	-
- Poland: Kamień Pomorski area		-	(0.4)
• refinery and other non-current assets:		**(28.8)**	**(33.7)**
- service stations	13.1.1	(21.2)	(33.3)
- ships	13.2.3	(5.9)	-
- other assets	13.1.1	(1.7)	(0.4)
Grants		**14.5**	**9.5**
Damages		**6.4**	**124.1** [(1)]
Lease modifications		**4.3**	**-**
Other		**8.6**	**7.2**
Total		**134.6**	**412.5**

[(1)] Including PLN 118.3m due to the Group as its share of damages related to the YME project, see Note 29.1.

The Group offsets similar transaction items in accordance with IAS 1 *Presentation of Financial Statements*, Sections 34 and 35. Material items of income and expenses charged to profit or loss are disclosed separately, as presented in the table above.

9.4 Other expenses

	Note	2019	2018 (restated data)
Loss on disposal of non-financial non-current assets		**-**	**3.7**
Loss on discontinued projects		**42.3**	**0.1**
- Norway: PL910, PL871, PL866 exploration licences	13.2.1	41.2	-
- other assets		1.1	0.1
Impairment losses on receivables		**36.3**	**6.4**
- impairment losses		51.0	8.3
- reversal of impairment losses		(14.7)	(1.9)
Provisions		**-**	**120.6**
- remeasurement of provision for contingent payments − Sleipner assets acquisition agreement	25.1	-	69.2
- tax risk provisions		-	52.5
- other provisions		-	(1.1)
Fines and compensation		**3.5**	**2.5**
Damage to property arising in ordinary course of business		**1.4**	**1.2**
Charitable donations		**0.3**	**11.5**
Other		**8.9**	**10.2**
Total		**92.7**	**156.2**

9.5 Finance income

	Note	2019	2018
Dividends:		**6.9**	**5.3**
- equity-accounted joint ventures		4.3	3.2
- equity investments measured at fair value through other comprehensive income	26.2	2.6	2.1
Interest:		**41.6**	**34.6**
• interest calculated using the effective interest rate method:		**41.6**	**34.2**
- on trade receivables	26.2	2.8	2.7
- on cash	26.2	6.4	4.5
- on deposits	26.2	32.3	27.0
- other		0.1	-
• other interest		**-**	**0.4**
Revaluation of derivative financial instruments:		**15.8**	**-**
- measurement	26.2	34.8	-
- settlement	26.2	(19.0)	-
Other		**5.8**	**1.2**
Total		**70.1**	**41.1**

9.6 Finance costs

	Note	2019	2018
Interest:		**230.1**	**186.9**
• interest calculated using the effective interest rate method:		**178.2**	**136.8**
- on bank borrowings	26.2	83,5	103.7
- on non-bank borrowings	26.2	2,3	2.9
- on notes	26.2	11,9	7.8
- on lease liabilities	26.2	79,7	19.9
- other		0.8	2.5
• other interest		**51.9**	**50.1**
- discount on provisions for oil and natural gas production facilities and for site restoration, and other provisions	25.1	44,4	43.8
- cost of discount on employee benefit obligations	24.1; 24.2	5,1	5.4
- other		2.4	0.9
Exchange differences:		**46.0**	**75.2**
- on bank borrowings	26.2	31,6	94.5
- on translation of intercompany loans (1)	26.2	(1,2)	(25.2)
- on realised foreign-currency transactions in bank accounts	26.2	12,4	3.3
- on notes	26.2	2,4	13.4
- on deposits and other cash	26.2	1,1	(12.8)
- other		(0.3)	2.0
Revaluation of derivative financial instruments:		**-**	**7.2**
- measurement	26.2	-	116.7
- settlement	26.2	-	(109.5)
Bank fees		**71.2**	**15.9**
Tax risk provision		**4.1**	**17.1**
Other		**0.4**	**0.8**
Total		**351.8**	**303.1**

(1) According to IAS 21 *The Effects of Changes in Foreign Exchange Rates*, foreign exchange gains and losses on intercompany foreign currency transactions are recognised in the Group's net profit or loss.

The Group offsets similar transaction items in accordance with IAS 1 *Presentation of Financial Statements*, paragraphs 34 and 35. Material items of income and expenses charged to profit or loss are disclosed separately, as presented in the table above.

10. Income tax

10.1 Tax expense

	Note	2019	2018
Current tax		430.6	760.7
Deferred tax	10.3	108.7	374.5
Total income tax charged to net profit or loss	**10.2**	**539.3**	**1.135,2**
Tax expense recognised in other comprehensive income (net), including:		17.9	(14.5)
- cash flow hedging	20	19.9	(14.8)
- actuarial gain/(loss) relating to post-employment benefits		(2.0)	0.3

For the entities operating in Poland, the current and deferred portion of income tax was calculated at the rate of 19% of taxable income.

In the case of Norwegian subsidiary LOTOS Exploration and Production Norge AS, the marginal tax rate is 78% of the tax base. LOTOS Exploration and Production Norge AS's activities are subject to taxation under two parallel tax systems: the corporate income tax system (22% tax rate) and the petroleum tax system (additional tax rate of 56%).

In the case of Lithuanian subsidiaries (AB LOTOS Geonafta Group), the current and deferred portion of income tax was calculated at the rate of 15%.

10.2 Corporate income tax calculated at effective tax rate and reconciliation of pre-tax profit to taxable income

	2019	2018
Pre-tax profit	1,692.2	2,722.6
Income tax at 19%	**321.5**	**517.3**
Permanent differences:	0.1	26.7
- tax risk provision	5.7	13.6
- other permanent differences	(5.6)	13.1
Tax effect of share in profit of equity-accounted entities	(0.8)	(0.6)
Adjustments disclosed in current year related to tax for previous years	0.7	(1.2)
Difference resulting from the application of tax rates other than 19%:	217.7	592.9
- Norway	214.5	592.2
- Lithuania	(1.1)	0.7
- other	4.3	-
Other differences	0.1	0.1
Income tax	**539.3**	**1,135.2**
Effective tax rate	**31.9%**	**41.7%**

10.3 Deferred income tax

		Statement of financial position		Change
	Note	Dec 31 2019	Dec 31 2018	
Deferred tax assets		174.5	149.6	24.9
Deferred tax liabilities		(475.2)	(324.9)	(150.3)
Net deferred tax assets/(liabilities)	**10.3.1**	**(300.7)**	**(175.3)**	**(125.4)**
Exchange differences on translating deferred tax of foreign operations				(1.2)
Deferred tax disclosed under other comprehensive income/(loss), net	10.1			17.9
Deferred tax expense charged to net profit or loss	**10.1**			**(108.7)**

Taxable temporary differences are expected to expire in 2020–2098.

As at December 31st 2019, unrecognised tax assets on account of tax losses were PLN 0.2m (December 31st 2018: PLN 0.1m). The period during which tax losses for which no tax asset has been recognised may be settled in accordance with applicable tax laws expires in 2023.

10.3.1 Deferred tax assets and liabilities

	Note	Dec 31 2018	Deferred tax recognised in net profit or loss	Deferred tax disclosed under other comprehensive income/ (losses)	Exchange differences on translating deferred tax of foreign operations	Dec 31 2019
Deferred tax assets						
Employee benefit obligations		59.9	8.1	2.0	-	70.0
Provisions for/assets related to decommissioning of oil and gas extraction facilities and site restoration		573.7	62.3	-	(1.3)	634.7
Difference between current tax value and carrying amount of settlements under joint operations (Norwegian fields)		-	7.3	-	(0.1)	7.2
Cash flow hedge accounting		67.7	-	(19.9)	-	47.8
Other		65.0	23.3	-	-	88.3
		766.3	**101.0**	**(17.9)**	**(1.4)**	**848.0**
Deferred tax liabilities						
Difference between current tax value and carrying amount: of property, plant and equipment and intangible assets		796.2	214.6	-	(2.6)	1,008.2
Difference between current tax value and carrying amount of settlements under joint operations (Norwegian fields)		4.4	(4.4)	-	-	-
Difference on accounting and tax measurement of lease contracts		6.1	19.0			25.1
Other		134.9	(19.5)	-	-	115.4
		941.6	**209.7**	**-**	**(2.6)**	**1,148.7**
Net deferred tax assets/(liabilities)	10.3	**(175.3)**	**(108.7)**	**(17.9)**	**1.2**	**(300.7)**

11. Earnings per share

	2019	2018
Net profit attributable to owners of the Parent (PLNm) (A)	1,152.9	1,587.4
Weighted average number of shares (million) (B)	184.9	184.9
Earnings per share (PLN) (A/B)	**6.24**	**8.59**

Earnings per share for each reporting period are calculated by dividing net profit for the reporting period by the weighted average number of shares in the reporting period.

Diluted earnings per share are equal to basic earnings per share as there are no instruments with a dilutive effect.

12. Dividends

As at December 31st 2019, Grupa LOTOS S.A. was restricted in its ability to distribute funds in the form of dividends pursuant to a credit facility agreement of July 2nd 2019 entered into to refinance the 10+ Programme credit facilities, discussed in Note 22.1. The agreement limits the ability of Grupa LOTOS S.A. to pay dividends and makes it conditional on achievement of certain levels of financial ratios.

As at December 31st 2018, Grupa LOTOS S.A. was restricted in its ability to distribute funds in the form of dividends under the credit facility agreement entered into on June 27th 2008 to finance the 10+ Programme. The agreement limited Grupa LOTOS S.A. 's ability to pay dividend and its amount was subject to certain conditions, including generation of sufficient free cash and achievement of certain levels of financial ratios. In 2019, the Company repaid its debt incurred to finance the 10+ Programme (see Note 22.1). Therefore, there were no restrictions in place at December 31st 2019.

On June 28th , the General Meeting of Grupa LOTOS S.A. passed a resolution on the allocation of the Company's net profit for 2018. Under the resolution, the 2018 net profit of PLN 1,333.9m was applied towards:

- dividend payment – PLN 554.6m,
- statutory reserve funds – PLN 779.3m.

The dividend was paid on September 27th 2019. The dividend per share was PLN 3, gross.

13. Property, plant and equipment and intangible assets

	Note	Dec 31 2019	Dec 31 2018
Non-current assets of the refining and marketing segment	**13.1**	**9,798.4**	**8,894.3**
Property, plant and equipment, including:	13.1.1	9,638.4	8,742.4
Group-owned		8,241.2	8,742.4
Right-of-use assets	13.3	1,397.2	-
Intangible assets, including:		160.0	151.9
Goodwill	13.1.2	45.6	45.6
Other intangible assets	13.1.3	114.4	106.3
Non-current assets of the exploration and production segment	**13.2**	**3,962.9**	**3,382.0**
Property, plant and equipment, including:		3,632.4	3,044.0
Group-owned		3,576.6	3,044.0
Right-of-use assets	13.3	55.8	-
Intangible assets, including:		330.5	338.0
Goodwill		1.1	1.1
Other intangible assets		329.4	336.9
Total property, plant and equipment and intangible assets		**13,761.3**	**12,276.3**
including:			
Property, plant and equipment, including:		13,270.8	11,786.4
Group-owned		11,817.8	11,786.4
Right-of-use assets		1,453.0	-
Intangible assets		490.5	489.9

13.1 Non-current assets of the refining and marketing segment

13.1.1 Property, plant and equipment of the refining and marketing segment

	Note	Land	Buildings, structures	Plant and equipment	Vehicles, other	Property, plant and equipment under construction	Total
Gross carrying amount Dec 31 2018		**523.1**	**4,772.2**	**5,842.7**	**792.7**	**1,969.8**	**13,900.5**
Effect of changes in accounting policies		621.7	144.4	0.1	257.8	-	1,024.0
Gross carrying amount Jan 1 2019		**1,144.8**	**4,916.6**	**5,842.8**	**1,050.5**	**1,969.8**	**14,924.5**
Purchase		-	-	-	10.6	292.6	303.2 (1)
Transfer from property, plant and equipment under construction		0.1	774.2	1,154.9	47.7	(1,976.9)	-
Borrowing costs		-	-	-	-	71.0	71.0
Leases		35.3	1.9	-	141.3	0.4	178.9
Sale		(0.1)	(2.5)	(14.1)	(15.5)	(0.3)	(32.5)
Other		-	-	(1.1)	(2.8)	(6.8)	(10.7)
Gross carrying amount Dec 31 2019		**1,180.1**	**5,690.2**	**6,982.5**	**1,231.8**	**349.8**	**15,434.4**
Accumulated depreciation/amortisation Jan 1 2019		**19.4**	**1,952.7**	**2,619.1**	**448.7**	**-**	**5,039.9**
Depreciation and amortisation		36.5	197.3	269.9	156.7	-	660.4
Leases		-	-	-	(13.3)	-	(13.3)
Sale		-	(1.3)	(14.2)	(15.3)	-	(30.8)
Other		-	-	0.2	0.5	-	0.7
Accumulated depreciation/amortisation Dec 31 2019		**55.9**	**2,148.7**	**2,875.0**	**577.3**	**-**	**5,656.9**
Impairment losses Jan 1 2019		**1.5**	**97.9**	**10.9**	**6.9**	**1.0**	**118.2**
Recognised	9.3	18.3	2.9	1.6	-	0.1	22.9 (2)
Used/Reversed		-	(1.5)	(0.5)	-	-	(2.0)
Impairment losses Dec 31 2019		**19.8**	**99.3**	**12.0**	**6.9**	**1.1**	**139.1**
Net carrying amount Dec 31 2019		**1,104.4**	**3,442.2**	**4,095.5**	**647.6**	**348.7**	**9,638.4**
Gross carrying amount Jan 1 2018		**523.7**	**4,608.5**	**5,711.1**	**714.1**	**1,874.4**	**13,431.8**
Purchase		-	-	-	9.9	348.7	358.6 (1)
Transfer from property, plant and equipment under construction		-	173.1	137.9	16.5	(327.5)	-
Borrowing costs		-	-	-	-	75.8	75.8
Leases		-	-	-	72.1	-	72.1
Sale		(0.6)	(8.7)	(8.3)	(18.8)	(0.1)	(36.5)
Other		-	(0.7)	2.0	(1.1)	(1.5)	(1.3)
Gross carrying amount Dec 31 2018		**523.1**	**4,772.2**	**5,842.7**	**792.7**	**1,969.8**	**13,900.5**
Accumulated depreciation/amortisation Jan 1 2018		**17.8**	**1,785.8**	**2,369.9**	**407.0**	**-**	**4,580.5**
Depreciation and amortisation		1.6	170.1	254.3	57.6	-	483.6
Sale		-	(2.9)	(7.2)	(17.1)	-	(27.2)
Other		-	(0.3)	2.1	1.2	-	3.0
Accumulated depreciation/amortisation Dec 31 2018		**19.4**	**1,952.7**	**2,619.1**	**448.7**	**-**	**5,039.9**
Impairment losses Jan 1 2018		**1.5**	**73.6**	**8.9**	**4.7**	**1.1**	**89.8**
Recognised	9.3	-	29.3	2.1	2.3	-	33.7 (2)
Used/Reversed		-	(5.0)	(0.1)	(0.1)	(0.1)	(5.3)
Impairment losses Dec 31 2018		**1.5**	**97.9**	**10.9**	**6.9**	**1.0**	**118.2**
Net carrying amount Dec 31 2018		**502.2**	**2,721.6**	**3,212.7**	**337.1**	**1,968.8**	**8,742.4**

(1) Expenditure was mainly related to construction of the delayed coking unit and auxiliary infrastructure (2019: PLN 70.1m; 2018: PLN 221.0m) and expansion of the service station chain (2019: PLN 95.0m; 2018: PLN 60.7m).
(2) Including impairment losses on the service station chain (2019: PLN 21.2m; 2018: PLN 33.3m).

Impairment losses on service stations

In 2019, LOTOS Paliwa Sp. z o.o. recognised an impairment loss on service station assets totalling PLN 21.2m (2018: PLN 33.3m); see Note 9.3. The recoverable amount of property, plant and equipment related to the service station network was determined based on the value in use of each station, calculated with the discounted cash flow method. Future cash flows were calculated based on five-year cash-flow projections, prepared using the approved budget for 2019 and the cash inflow and outflow plan for subsequent years, based on the long-term development strategy until 2020. The residual value for the discounted cash flows was calculated using the growing perpetuity formula. LOTOS Paliwa Sp. z o.o.'s net weighted average cost of capital (WACC) based on the company's financing structure was assumed at 7.69% (2018: 7.69%).

Calculation of the value in use of cash-generating units is most sensitive to the following variables:

- gross margin, which depends on average values of unit margins in the period preceding the budget period (a 2.3%-2.5% average year-on-year margin decrease was assumed),
- a discount rate which reflects the expected rate of return on assets at a specific risk level (the rate is calculated in accordance with the WACC and CAPM methodologies and is based on such amounts as the median of 10-year treasury bond quotations, market risk premium (MRP), country risk premium (CRP), and the market structure of financing,
- volumes based on the dynamics of fuel consumption growth and business analysis taking into account the nature of micro-markets at the analysed locations,
- market share in the budget period (an increase in the market share was assumed),
- the growth rate used to estimate cash flows outside the budget period (0.0%).

13.1.2 Goodwill of the refining and marketing segment

Goodwill is allocated to cash-generating units, as presented in the table below.

	Dec 31 2019	Dec 31 2018
Goodwill arising on the acquisition of an organised part of business by LOTOS Paliwa Sp. z o.o.:		
- wholesale of LPG	10.0	10.0
- service stations chains (ESSO, Slovnaft Polska)	33.7	33.7
Total	**43.7**	**43.7**
Goodwill arising on acquisition of other entities	1.9	1.9
Total goodwill	**45.6**	**45.6**

As at December 31st 2019 and as at December 31st 2018, impairment tests of individual cash-generating units to which goodwill was allocated did not reveal any impairment indicators.

The Group determines the recoverable amount of cash-generating units based on their respective values in use, calculated on the basis of a five-year cash flow projection. The residual value for the discounted cash flows was calculated using the growing perpetuity formula. The discount rate adopted for the calculation reflects net WACC of 7.69% (2018: 7.69%). It was assumed that the cash flow rate will remain constant after the forecast period.

The most material factors affecting the estimated values in use of cash-generating units were gross margin, discount rate, volumes forecast, projected market shares in the budget period and estimated growth rate beyond the forecast period.

The Group believes that no reasonably probable change in the key parameters identified above would result in goodwill impairment.

13.1.3 Other intangible assets of the refining and marketing segment

	Patents, trademarks and licences	Other	Intangible assets under development	Total
Gross carrying amount Jan 1 2019	**212.7**	**31.8**	**12.6**	**257.1**
Purchase	-	0.1	20.5	20.6
Transfer from intangible assets under development	24.2	1.1	(25.3)	-
Sale	(6.2)	(3.9)	-	(10.1)
Other	0.6	0.5	0.3	1.4
Gross carrying amount Dec 31 2019	**231.3**	**29.6**	**8.1**	**269.0**
Accumulated amortisation Jan 1 2019	**133.2**	**17.6**	**-**	**150.8**
Amortisation	11.6	1.1	-	12.7
Sale	(6.2)	(3.9)	-	(10.1)
Other	0.6	0.6	-	1.2
Accumulated amortisation Dec 31 2019	**139.2**	**15.4**	**-**	**154.6**
Impairment losses Jan 1 2019	**-**	**-**	**-**	**-**
Recognised	-	-	-	-
Used/Reversed	-	-	-	-
Impairment losses Dec 31 2019	**-**	**-**	**-**	**-**
Net carrying amount Dec 31 2019	**92.1**	**14.2**	**8.1**	**114.4**
Gross carrying amount Jan 1 2018	**206.9**	**37.4**	**10.4**	**254.7**
Purchase	-	0.3	8.9	9.2
Transfer from intangible assets under development	6.1	0.8	(6.9)	-
Other	(0.3)	(6.7)	0.2	(6.8)
Gross carrying amount Dec 31 2018	**212.7**	**31.8**	**12.6**	**257.1**
Accumulated depreciation/amortisation Jan 1 2018	**120.8**	**16.3**	**-**	**137.1**
Depreciation and amortisation	12.6	1.3	-	13.9
Other	(0.2)	-	-	(0.2)
Accumulated depreciation/amortisation Dec 31 2018	**133.2**	**17.6**	**-**	**150.8**
Impairment losses Jan 1 2018	**-**	**-**	**-**	**-**
Recognised	-	-	-	-
Used/Reversed	-	-	-	-
Impairment losses Dec 31 2018	**-**	**-**	**-**	**-**
Net carrying amount Dec 31 2018	**79.5**	**14.2**	**12.6**	**106.3**

Intangible assets of the refining and marketing segment include licences relating to technological processes, including licences for technologies used in the refinery, licences for fuel production, storage and trading, software licences, patents, trademarks and acquired CO_2 emission allowances.

13.2 Non-current assets of the exploration and production segment

	Note	Dec 31 2019	Dec 31 2018
Oil and gas exploration and evaluation assets	**13.2.1**	**327.5**	**313.4**
Property, plant and equipment		64.3	62.0
Intangible assets		263.2	251.4
Oil and gas development and production assets	**13.2.2**	**3,283.6**	**2,731.3**
Property, plant and equipment		3,218.7	2,646.3
Intangible assets		64.9	85.0
Other non-current assets of the exploration and production segment	**13.2.3**	**351.8**	**337.3**
Property, plant and equipment		349.4	335.7
Intangible assets		2.4	1.6
Total non-current assets of the exploration and production segment		**3,962.9**	**3,382.0**
including:			
Property, plant and equipment		3,632.4	3,044.0
Intangible assets		330.5	338.0

13.2.1 Oil and gas exploration and evaluation assets

	Note	Property, plant and equipment classified as exploration and evaluation assets	Intangible assets classified as exploration and evaluation assets			Total
		Poland	Poland	Norway	Lithuania	
Gross carrying amount Jan 1 2019		**173.9**	**13.7**	**265.2**	**10.3**	**463.1**
Purchase		2.3	0.4	57.7	-	60.4
Exchange differences on translating foreign operations		-	-	(0.5)	(0.1)	(0.6)
Expenditure written off due to project discontinuation	9.4	-	-	(41.2) [(1)]	-	(41.2)
Gross carrying amount Dec 31 2019		**176.2**	**14.1**	**281.2**	**10.2**	**481.7**
Accumulated depreciation Jan 1 2019		**-**	**10.3**	**-**	**-**	**10.3**
Depreciation		-	0.8	-	-	0.8
Accumulated depreciation Dec 31 2019		**-**	**11.1**	**-**	**-**	**11.1**
Impairment losses Jan 1 2019		**111.9**	**-**	**17.2**	**10.3**	**139.4**
Recognised	9.3	-	-	3.8	-	3.8
Exchange differences on translating foreign operations		-	-	-	(0.1)	(0.1)
Impairment losses Dec 31 2019		**111.9**	**-**	**21.0**	**10.2**	**143.1**
Net carrying amount Dec 31 2019		**64.3**	**3.0**	**260.2**	**-**	**327.5**
Gross carrying amount Jan 1 2018		**187.8**	**13.7**	**217.3**	**10.0**	**428.8**
Purchase		10.2	-	30.9	-	41.1
Exchange differences on translating foreign operations		-	-	3.3	0.3	3.6
Reclassification of intangible assets		-	-	13.7	-	13.7
Write-off of abandonment expenditure		(24.1) [(2)]	-	-	-	(24.1)
Gross carrying amount Dec 31 2018		**173.9**	**13.7**	**265.2**	**10.3**	**463.1**
Accumulated depreciation/amortisation Jan 1 2018		**-**	**9.4**	**-**	**-**	**9.4**
Depreciation and amortisation		-	0.9	-	-	0.9
Accumulated depreciation/amortisation Dec 31 2018		**-**	**10.3**	**-**	**-**	**10.3**
Impairment losses Jan 1 2018		**135.6**	**-**	**16.9**	**10.0**	**162.5**
Recognised	9.3	0.4	-	-	-	0.4
Exchange differences on translating foreign operations		-	-	0.3	0.3	0.6
Expenditure written off due to project discontinuation		(24.1) [(2)]	-	-	-	(24.1)
Impairment losses Dec 31 2018		**111.9**	**-**	**17.2**	**10.3**	**139.4**
Net carrying amount Dec 31 2018		**62.0**	**3.4**	**248.0**	**-**	**313.4**

[(1)] Write-offs of drilling costs on PL910, PL871, and PL866 licences.

[(2)] Expenditure on exploration and evaluation work in the Kamień Pomorski area (with no effect on result).

Property, plant and equipment are classified as exploration and evaluation assets until the technical feasibility and commercial viability of extracting the discovered resources are demonstrated.

13.2.2 Oil and gas development and production assets

		Oil and gas development assets			Oil and gas production assets				Total
	Note	Poland	Norway	Total	Poland	Norway	Lithuania	Total	
Gross carrying amount Dec 31 2018		**-**	**1,996.8**	**1,996.8**	**1,982.4**	**1,458.8**	**645.0**	**4,086.2**	**6,083.0**
Effect of changes in accounting policies		-	-	-	1.0	-	1.2	2.2	2.2
Gross carrying amount Jan 1 2019		**-**	**1,996.8**	**1,996.8**	**1,983.4**	**1,458.8**	**646.2**	**4,088.4**	**6,085.2**
Purchase		-	325.5	325.5	186.2	34.3	-	220.5	546.0
Exchange differences on translating foreign operations		-	(2.2)	(2.2)	-	(6.0)	(6.4)	(12.4)	(14.6)
Estimated costs of decommissioning of oil and gas extraction facilities		-	12.0	12.0	32.5	30.5	1.1	64.1	76.1
Reclassification of development assets to production assets		-	(367.2)	(367.2)	-	367.2	-	367.2	-
Borrowing costs		-	-	-	12.0	-	-	12.0	12.0
Leases	13.3	-	-		(0.3)	-	0.4	0.1	0.1
Other		-	-	-	-	-	2.2	2.2	2.2
Gross carrying amount Dec 31 2019		**-**	**1,964.9**	**1,964.9**	**2,213.8**	**1,884.8**	**643.5**	**4,742.1**	**6,707.0**
Accumulated depreciation Jan 1 2019		**-**	**-**	**-**	**535.8**	**1,063.3**	**315.7**	**1,914.8**	**1,914.8**
Depreciation		-	-	-	38.2	122.0	13.0	173.2	173.2
Exchange differences on translating foreign operations		-	-	-	-	(2.3)	(3.1)	(5.4)	(5.4)
Other		-	-	-	-	-	(0.3)	(0.3)	(0.3)
Accumulated depreciation Dec 31 2019		**-**	**-**	**-**	**574.0**	**1,183.0**	**325.3**	**2,082.3**	**2,082.3**
Impairment losses Jan 1 2019		**-**	**1,124.3**	**1,124.3**	**0.5**	**83.1**	**229.0**	**312.6**	**1,436.9**
Recognised	9.3	-	-	-	3.2 (2)	-	8.9 (3)	12.1	12.1
Exchange differences on translating foreign operations		-	0.4	0.4	-	(0.8)	(2.1)	(2.9)	(2.5)
Reclassification of development assets to production assets		-	(62.5)	(62.5)	-	62.5	-	62.5	-
Used/Reversed	9.3	-	(105.4) (1)	(105.4)	-	-	-	-	(105.4)
Impairment losses Dec 31 2019		**-**	**956.8**	**956.8**	**3.7**	**144.8**	**235.8**	**384.3**	**1,341.1**
Net carrying amount Dec 31 2019		**-**	**1,008.1**	**1,008.1**	**1,636.1**	**557.0**	**82.4**	**2,275.5**	**3,283.6**

(1) YME field
(2) B-8 field
(3) Fields: Vėžaičiai, Girkaliai

(This is a translation of a document originally issued in Polish)

(PLNm)

	Note	Oil and gas development assets			Oil and gas production assets				Total
		Poland	Norway	Total	Poland	Norway	Lithuania	Total	
Gross carrying amount Jan 1 2018		**-**	**1,650.5**	**1,650.5**	**1,823.9**	**1,407.4**	**626.4**	**3,857.7**	**5,508.2**
Purchase		-	320.5	320.5	128.3	21.7	0.1	150.1	470.6
Exchange differences on translating foreign operations		-	25.8	25.8	-	28.0	19.4	47.4	73.2
Estimated costs of decommissioning of oil and gas extraction facilities		-	-	-	22.0	1.7	1.3	25.0	25.0
Reclassification of refinery and other assets		-	-	-	-	-	(1.5)	(1.5)	(1.5)
Borrowing costs		-	-	-	8.6	-	-	8.6	8.6
Other		-	-	-	(0.4)	-	(0.7)	(1.1)	(1.1)
Gross carrying amount Dec 31 2018		**-**	**1,996.8**	**1,996.8**	**1,982.4**	**1,458.8**	**645.0**	**4,086.2**	**6,083.0**
Accumulated depreciation/amortisation Jan 1 2018		-	**-**	**-**	**499.5**	**912.9**	**294.1**	**1,706.5**	**1,706.5**
Depreciation and amortisation		-	-	-	36.3	135.1	13.0	184.4	184.4
Exchange differences on translating foreign operations		-	-	-	-	15.3	9.3	24.6	24.6
Other		-	-	-	-	-	(0.7)	(0.7)	(0.7)
Accumulated depreciation/amortisation Dec 31 2018		**-**	**-**	**-**	**535.8**	**1,063.3**	**315.7**	**1,914.8**	**1,914.8**
Impairment losses Jan 1 2018		**-**	**1,436.2**	**1,436.2**	**-**	**34.9**	**227.2**	**262.1**	**1,698.3**
Recognised	9.3	-	-	-	0.5	48.7 (2)	18.5 (3)	67.7	67.7
Exchange differences on translating foreign operations		-	37.6	37.6	-	(0.5)	6.8	6.3	43.9
Used/Reversed	9.3	-	(349.5) (1)	(349.5)	-	-	(23.5) (4)	(23.5)	(373.0)
Impairment losses Dec 31 2018		**-**	**1,124.3**	**1,124.3**	**0.5**	**83.1**	**229.0**	**312.6**	**1,436.9**
Net carrying amount Dec 31 2018		**-**	**872.5**	**872.5**	**1,446.1**	**312.4**	**100.3**	**1,858.8**	**2,731.3**

(1) YME field.
(2) Heimdal assets.
(3) Vėžaičiai field.
(4) Fields: Girkalai, Nausodis

Impairment testing of assets in the B-8 field in the Baltic Sea

As at December 31st 2019 and December 31st 2018, the Group tested the B8 field assets for impairment.

Key assumptions underlying computation of the recoverable amount of the tested assets:

- the cash flow projection period was assumed to equal the assets' planned life,
- the discount rate was assumed to equal the weighted average cost, at 7.58% (2018: 8.51%) after taxation at the 19% marginal tax rate,
- production volumes in line with current forecasts, taking into account current geological data,
- sales volumes, capital expenditure, operating expenses and field decommissioning costs were assumed in line with current projections for the B-8 field.

The following price assumptions were adopted for the estimates as part of the impairment test as at December 31st 2019:
- for crude oil in USD/bbl (per barrel of oil equivalent):
  - 2020–2023 – prices in line with the price assumptions for the available market scenarios,
  - 2024 and beyond − prices remaining stable in the long term on par with the 2023 level, adjusted for inflation.

The following assumptions were adopted for the estimates as part of the impairment test as at December 31st 2018:
- for crude oil in USD/bbl (per barrel of oil equivalent):
  - 2019–2022 – prices in line with the price assumptions of available market scenarios,
  - 2023 and beyond − prices remaining stable in the long term on par with the 2022 level, adjusted for inflation.

Following analyses and consultations, and having taken into account a number of possible options, the Group adopted a final development concept for the B-8 field which offers the best expected economic parameters. Currently, B8 Spółka z ograniczoną odpowiedzialnością Baltic S. K. A. is in the process of obtaining corporate approvals for the adopted concept. In order to implement the final solution, the project will require additional capital expenditure of up to approximately PLN 523m. The Group is able to finance a project of such a scale.

As a result of the tests carried out, and taking into account the above assumptions, no impairment loss on the B-8 assets was found to be required.

Due to significant market volatility, in particular with respect to crude oil prices, the adopted assumptions may be subject to justifiable changes, and such changes may necessitate a revision of the carrying amounts of the field's assets in the future. Therefore, the Group points to a number of uncertainties as to the recoverable amount of the assets:

- volatility of market prices of crude oil,
- estimates of investment expenditure related to contracts for which no contractor has yet been selected,
- amount of site restoration commitments,
- volatility of the PLN/USD exchange rate,
- discount rates.

To determine the effect of key factors on the test results, the Group carried out an analysis of sensitivity to a +/-15% change in oil and gas prices, +/-15% change in production volumes, +/-15% change in the USD/PLN exchange rate, and +/-0.5pp change in the discount rate.

The table below presents the estimated level of impairment losses assuming change in the key assumptions:

Factor	Change	Estimated amount of impairment losses (PLNm)	
Crude oil and gas prices	+/- 15%	-	-172.1
Production volume	+/- 15%	-	-201.4
USD/PLN exchange rate	+/- 15%	-	-194.6
Discount rate	+/- 0.5 pp	-	-

Progress of the YME field development project in Norway

Due to significant delays in the implementation of the YME project, cost overruns, and defects of the MOPU (Mobile Offshore Production Unit) to be used in production operations in the field, in previous years the Group recognised impairment losses on the YME assets until they were fully written off in 2014.

On August 22nd 2016, the YME project partners completed the removal of the defective MOPU from the field. The work was financed with funds raised by the consortium members (the Group has a 20% interest in the project) under an agreement with the supplier of the MOPU.

As part of the YME field development project, on October 27th 2017 the licence partners approved the Plan for Development and Operation. On December 19th 2017, Repsol Norge AS, on behalf of the YME field licence partners, submitted the PDO for approval to the Norwegian Ministry of Petroleum and Energy. In November 2017, Repsol Norge AS, acting as the YME licence and development project operator, signed a contract with Maersk Drilling for delivery of the Mærsk Inspirer production and drilling rig, which will serve as a production hub on the Yme field. Commercial production of hydrocarbons from the field is to be launched by the operator in 2020.

As at December 31st 2019 and December 31st 2018, the Group tested the YME field (at the development phase) for impairment. The test was performed based on the following assumptions, equivalent to those adopted for development and production assets:

- the cash flow projection period was assumed to equal the asset's planned life,
- the discount rate was assumed to equal the weighted average cost, at 6.19% (2018: 7.02%) after taxation with the 78% marginal tax rate (applicable in Norway),
- production and sales volumes, capital expenditure, operating expenses and field decommissioning costs were assumed as projected by the field operator.

The following assumptions were adopted for the estimates made as part of the impairment test as at December 31st 2019:

- for crude oil in USD/bbl (per barrel):
  - 2020–2023 – prices in line with the price assumptions for the available market scenarios,
  - 2024 and beyond − prices remaining stable in the long term on par with the 2023 level, adjusted for inflation.

The following assumptions were adopted for the estimates as part of the impairment tests as at December 31st 2018:

- for crude oil in USD/bbl (per barrel):
  - 2019–2022 – prices in line with the price assumptions of available market scenarios,
  - 2023 and beyond − prices remaining stable in the long term on par with the 2022 level, adjusted for inflation.

In connection with risks inherent in the field development phase (such as geological, technical, schedule and operational risks), the Group adopted, in accordance with IAS 36 *Impairment of Assets*, a conservative approach to calculating the recoverable amount of the YME project. The risks identified at this stage of the project were recognised by deferring the first oil date to January 1st 2021. In addition, an increase of investment expenditures planned for 2020 by 30% was assumed.

Remeasurement of the recoverable amount performed as at December 31st 2019 showed no need to recognise an impairment loss on the YME field. As a result of the impairment test, the Group recognised a PLN 105.4mreversal of impairment losses recognised in previous years.

As at December 31st 2018, the Group reversed impairment losses of PLN 349.5m.

Due to significant market volatility, in particular with respect to oil and gas prices, the adopted assumptions may be subject to justifiable changes, and such changes may necessitate a revision of the carrying amounts of the YME field's assets in the future. To determine the effect of key factors on the test results, the Group carried out an analysis of sensitivity to a +/-15% change in oil and gas prices, +/-15% change in production volumes, +/-15% change in the USD/NOK exchange rate, and +/- 0.5pp change in the discount rate.

Presented below is the estimated level of impairment loss recognition (-) and reversal (+) following changes in the key assumptions.

Factor	Change	Estimated amount of recognition and reversal of impairment losses (PLNm)	
Crude oil and gas prices	+/- 15%	408.2	-170.1
Production volume	+/- 15%	398.8	-160.5
USD/NOK exchange rate	+/- 15%	398.8	-160.5
Discount rate	+/- 0.5 pp	76.1	165.1

Impairment testing of the production assets of the offshore gas and condensate production facility in the Heimdal field and of the Sleipner and Utgard gas field in Norway

As at December 31st 2019 and as at December 31st 2018, the Group tested for impairment the production assets of each centre generating cash flows from the producing Heimdal fields (Atla, Vale, Skirne, Heimdal) and the Sleipner and Utgard fields. The tests did not reveal any need to recognise impairment losses on these assets.

As part of impairment testing of the Norwegian production assets, their recoverable amount was determined at their value in use estimated using the discounted future cash flows method.

Key assumptions underlying computation of the recoverable amount of the tested assets:
- the cash flow projection period was assumed to equal the asset's planned life,
- the discount rate was assumed to equal the weighted average cost, at 6.19% (2018: 7.02%) after taxation with the 78% marginal tax rate (applicable in Norway),
- production and sales volumes, capital expenditure, operating expenses and field decommissioning costs were assumed as projected by the field operators.

The following price assumptions were adopted for the purposes of the impairment tests as at December 31st 2019:
- for crude oil in USD/bbl (per barrel):
  - 2020–2023 – prices in line with the price assumptions for the available market scenarios,
  - 2024 and beyond − prices remaining stable in the long term on par with the 2023 level, adjusted for inflation;
- for natural gas in USD/boe (per barrel of oil equivalent):
  - 2020–2023 − prices in line with the price assumptions of available market scenarios, and in 2024 and beyond − prices remaining stable in the long term on par with the 2023 level, adjusted for inflation.

The following assumptions were adopted for the estimates as part of the impairment tests as at December 31st 2018:
- for crude oil in USD/bbl (per barrel):
  - 2019–2022 – prices in line with the price assumptions of available market scenarios,
  - 2023 and beyond − prices remaining stable in the long term on par with the 2022 level, adjusted for inflation;
- for natural gas in USD/boe (per barrel of oil equivalent):
  - 2019–2022 − prices in line with the price assumptions of available market scenarios, and in 2023 and beyond − prices remaining stable in the long term on par with the 2022 level, adjusted for inflation.

Due to significant market volatility, in particular with respect to oil and gas prices, the adopted assumptions may be subject to justifiable changes, and such changes may necessitate a revision of the carrying amounts of the LOTOS E&P Norge's assets in the future.

To determine the effect of key factors on the test results, the Group carried out an analysis of sensitivity to a +/-15% change in oil and gas prices, +/-15% change in production volumes, +/-15% change in the USD/NOK exchange rate, and +/- 0.5pp change in the discount rate .

Below is presented the estimated amount of recognised (-) and reversed (+) impairment losses on the Heimdal, Sleipner and Utgard assets tested, with the key assumptions changed:

Factor	Change	Estimated amount of recognition and reversal of impairment losses (PLNm)	
Crude oil and gas prices	+/- 15%	61.1	- 41.5
Production volume	+/- 15%	56.9	- 37.3
USD/NOK exchange rate	+/- 15%	60.3	- 40.7
Discount rate	+/- 0.5 pp	-	12.8

Impairment testing of onshore oil and gas extraction facilities in Lithuania

As a result of impairment tests performed for the resources and production infrastructure in Lithuania, as at December 31st 2019 the Group recognised an aggregate impairment loss of PLN 8.9m on investment associated with the Vėžaičiai and Girkaliai licences.

As at December 31st 2018 the Group recognised an impairment loss of PLN 18.5m on investment associated with the Vėžaičiai licence. The Group also reversed previous years' impairment losses on production assets related to the Girkaliai field (PLN 10.2m) and the Nausodis field (PLN 13.3m) (see Note 9.3).

The Group determines the recoverable amount of the tested assets as their value in use measured using the discounted future cash flows method.

Key assumptions underlying computation of the recoverable amount of the tested assets in Lithuania:
- the cash flow projection period was assumed to equal the asset's planned life,
- the discount rate was assumed to equal the weighted average cost, at 6.41% (2018: 7.68%),
- production volumes were assumed to be in line with a competent person report prepared by Miller & Lents based on the most recent available geological information,
- capital expenditure was assumed to match the projected production volumes.

The following crude oil price assumptions (USD/bbl) were adopted for the purposes of the estimates made in 2019:
- 2020–2023 – prices in line with the price assumptions for the available market scenarios,
- 2024 and beyond − prices remaining stable in the long term on par with the 2023 level, adjusted for inflation.

Crude oil price assumptions (USD/bbl) adopted for the purposes of the estimates as at December 31st 2018:
- 2019–2022 – prices in line with the price assumptions of available market scenarios,
- 2023 and beyond − prices remaining stable in the long term on par with the 2022 level, adjusted for inflation.

Due to significant market volatility, in particular with respect to crude oil prices, the adopted assumptions may be subject to justifiable changes, and such changes may necessitate a revision of the carrying amounts of the assets in the future.

To determine the effect of key factors on the test results, the Group carried out an analysis of sensitivity to a +/-15% change in oil prices, +/-15% change in production volumes, +/-15% change in the USD/EUR exchange rate, and +/-0.5% change in the discount rate.

Presented below is the estimated amount of recognition (-) and reversal (+) of impairment losses following changes in the key assumptions.

Factor	Change	Estimated amount of recognition and reversal of impairment losses (PLNm)	
Crude oil and gas prices	+/- 15%	14.2	-35.3
Production volume	+/- 15%	8.2	-31.8
USD/EUR exchange rate	+/- 15%	12.5	-35.3
Discount rate	+/- 0.5 pp	-9.5	-7.7

Assets related to future costs of decommissioning of oil and gas extraction facilities

As part of its development and production assets, the Group discloses assets related to future costs of decommissioning of oil and gas extraction facilities depreciated with the units-of-production method. These assets are recognised along with the recognition and remeasurement of provisions for decommissioning of oil and gas extraction facilities.

	Oil and gas development assets	Oil and gas production assets				Total
	Norway	Poland	Norway	Lithuania	Total	
Gross carrying amount Jan 1 2019	**119.9**	**136.0**	**697.1**	**3.0**	**836.1**	**956.0**
Estimated costs of decommissioning of oil and gas extraction facilities	12.0	32.5	30.5	1.1	64.1	76.1
Exchange differences on translating foreign operations	(0.3)	-	(0.9)	-	(0.9)	(1.2)
Other	-	0.1	-	-	0.1	0.1
Gross carrying amount Dec 31 2019	**131.6**	**168.6**	**726.7**	**4.1**	**899.4**	**1.031,0**
Accumulated depreciation Jan 1 2019	**-**	**82.8**	**507.7**	**1.5**	**592.0**	**592.0**
Depreciation	-	2.9	31.5	0.5	34.9	34.9
Exchange differences on translating foreign operations	-	-	(0.7)	0.1	(0.6)	(0.6)
Accumulated depreciation Dec 31 2019	**-**	**85.7**	**538.5**	**2.1**	**626.3**	**626.3**
Impairment losses Jan 1 2019	**119.9**	**-**	**65.4**	**-**	**65.4**	**185.3**
Recognised	-	-	-	-	-	-
Exchange differences on translating foreign operations	(0.1)	-	(0.1)	-	(0.1)	(0.2)
Impairment losses Dec 31 2019	**119.8**	**-**	**65.3**	**-**	**65.3**	**185.1**
Net carrying amount Dec 31 2019	**11.8**	**82.9**	**122.9**	**2.0**	**207.8**	**219.6**
Gross carrying amount Jan 1 2018	**117.5**	**114.0**	**681.6**	**1.6**	**797.2**	**914.7**
Estimated costs of decommissioning of oil and gas extraction facilities	-	22.0	1.7	1.3	25.0	25.0
Exchange differences on translating foreign operations	2.4	-	13.8	0.1	13.9	16.3
Gross carrying amount Dec 31 2018	**119.9**	**136.0**	**697.1**	**3.0**	**836.1**	**956.0**
Accumulated depreciation/amortisation Jan 1 2018	**-**	**81.3**	**446.8**	**1.5**	**529.6**	**529.6**
Depreciation and amortisation	-	1.5	53.1	-	54.6	54.6
Exchange differences on translating foreign operations	-	-	7.8	-	7.8	7.8
Accumulated depreciation/amortisation Dec 31 2018	**-**	**82.8**	**507.7**	**1.5**	**592.0**	**592.0**
Impairment losses Jan 1 2018	**117.5**	**-**	**28.9**	**-**	**28.9**	**146.4**
Recognised	-	-	36.8 (1)	-	36.8	36.8
Exchange differences on translating foreign operations	2.4	-	(0.3)	-	(0.3)	2.1
Impairment losses Dec 31 2018	**119.9**	**-**	**65.4**	**-**	**65.4**	**185.3**
Net carrying amount Dec 31 2018	**-**	**53.2**	**124.0**	**1.5**	**178.7**	**178.7**

(1) Heimdal assets.

13.2.3 Other non-current assets of the exploration and production segment

	Note	Land	Buildings, structures	Plant and equipment	Vehicles, other	Property, plant and equipment under construction	Intangible assets	Total
Gross carrying amount Dec 31 2018		**11.4**	**53.2**	**73.0**	**533.5**	**20.5**	**14.0**	**705.6**
Effect of changes in accounting policies		2.9	6.4	-	56.1	-	-	65.4
Gross carrying amount Jan 1 2019		**14.3**	**59.6**	**73.0**	**589.6**	**20.5**	**14.0**	**771.0**
Purchase		-	-	0.5	0.1	9.3	1.2	11.1
Transfer from property, plant and equipment under construction		-	-	0.5	5.7	(6.2)	-	-
Leases	13.3	-	-	-	5.1	-	-	5.1
Exchange differences on translating foreign operations		-	-	0.2	2.4	0.1	-	2.7
Sale		-	-	(0.1)	(0.5)	-	-	(0.6)
Other		-	0.1	-	-	-	-	0.1
Gross carrying amount Dec 31 2019		**14.3**	**59.7**	**74.1**	**602.4**	**23.7**	**15.2**	**789.4**
Accumulated depreciation Jan 1 2019		**4.7**	**23.6**	**39.3**	**285.7**	**-**	**12.4**	**365.7**
Depreciation		0.4	3.0	3.3	55.9	-	0.4	63.0
Exchange differences on translating foreign operations		-	-	0.1	1.0	-	-	1.1
Sale		-	-	(0.1)	(0.5)	-	-	(0.6)
Accumulated depreciation Dec 31 2019		**5.1**	**26.6**	**42.6**	**342.1**	**-**	**12.8**	**429.2**
Impairment losses Jan 1 2019		**-**	**-**	**0.6**	**2.0**	**-**	**-**	**2.6**
Recognised	9.3	-	-	-	5.9	-	-	5.9
Exchange differences on translating foreign operations		-	-	-	(0.1)	-	-	(0.1)
Impairment losses Dec 31 2019		**-**	**-**	**0.6**	**7.8**	**-**	**-**	**8.4**
Net carrying amount Dec 31 2019		**9.2**	**33.1**	**30.9**	**252.5**	**23.7**	**2.4**	**351.8**
Gross carrying amount Jan 1 2018		**11.4**	**53.1**	**68.7**	**499.4**	**13.6**	**37.8**	**684.0**
Purchase		-	-	0.7	0.1	39.4	0.1	40.3
Transfer from property, plant and equipment under construction		-	0.1	8.9	23.4	(32.5)	-	(0.1)
Exchange differences on translating foreign operations		-	-	1.2	11.1	0.2	1.2	13.7
Reclassification to oil and gas exploration and evaluation assets		-	-	-	-	-	(25.0)	(25.0)
Sale		-	-	(6.5)	(0.5)	-	(0.1)	(7.1)
Other		-	-	-	-	(0.2)	-	(0.2)
Gross carrying amount Dec 31 2018		**11.4**	**53.2**	**73.0**	**533.5**	**20.5**	**14.0**	**705.6**
Accumulated depreciation/amortisation Jan 1 2018		**4.5**	**21.8**	**40.6**	**242.8**	**-**	**23.1**	**332.8**
Depreciation and amortisation		0.2	1.8	3.2	34.5	-	0.2	39.9
Exchange differences on translating foreign operations		-	-	0.6	8.9	-	0.5	10.0
Reclassification of refining and other assets to oil and gas production assets		-	-	-	-	-	(11.3)	(11.3)
Sale		-	-	(5.1)	(0.5)	-	(0.1)	(5.7)
Accumulated depreciation/amortisation Dec 31 2018		**4.7**	**23.6**	**39.3**	**285.7**	**-**	**12.4**	**365.7**
Impairment losses Jan 1 2018		**-**	**-**	**0.6**	**1.9**	**-**	**-**	**2.5**
Exchange differences on translating foreign operations		-	-	-	0.1	-	-	0.1
Impairment losses Dec 31 2018		**-**	**-**	**0.6**	**2.0**	**-**	**-**	**2.6**
Net carrying amount Dec 31 2018		**6.7**	**29.6**	**33.1**	**245.8**	**20.5**	**1.6**	**337.3**

Other property, plant and equipment and intangible assets of the exploration and production segment include ships and a multi-purpose mobile drilling rig.

13.3 Right-of-use assets

Refining & marketing segment	Land	Buildings, structures	Plant and equipment	Vehicles, other	Property, plant and equipment under construction	Total
Gross carrying amount Dec 31 2018	**-**	**-**	**-**	**355.5**	**-**	**355.5**
Effect of changes in accounting policies	621.7	144.4	0.1	257.8	-	1,024.0
Gross carrying amount Jan 1 2019	**621.7**	**144.4**	**0.1**	**613.3**	**-**	**1,379.5**
New leases	21.5	-	-	177.3	-	198.8
Reclassification to right-of-use assets	195.1	-	-	9.1	-	204.2
Early termination of lease contract	-	-	-	(36.0)	-	(36.0)
Purchase of asset – transfer to property, plant and equipment	-	-	-	(38.2)	-	(38.2)
Lease modifications	10.6	1.6	-	(12.4)	-	(0.2)
Recognition of liquidation assets	3.1	0.4	-	-	-	3.5
Unsettled upfront payments	-	-	-	-	13.3	13.3
Settled upfront payments	-	-	-	12.9	(12.9)	-
Other	-	-	-	3.8	-	3.8
Gross carrying amount Dec 31 2019	**852.0**	**146.4**	**0.1**	**729.8**	**0.4**	**1,728.7**
Accumulated depreciation Jan 1 2019	**-**	**-**	**-**	**151.5**	**-**	**151.5**
Depreciation	35.1	17.9	-	127.3	-	180.3
Reclassification to right-of-use assets	2.9	-	-	4.5	-	7.4
Early termination of lease contract	-	-	-	(9.3)	-	(9.3)
Purchase of asset – transfer to property, plant and equipment	-	-	-	(12.2)	-	(12.2)
Lease modifications	-	-	-	(3.8)	-	(3.8)
Other	-	-	-	(3.8)	-	(3.8)
Accumulated depreciation Dec 31 2019	**38.0**	**17.9**	**-**	**254.2**	**-**	**310.1**
Impairment losses Jan 1 2019	**-**	**-**	**-**	**-**	**-**	**-**
Reclassification to right-of-use assets	0.2	-	-	-	-	0.2
Recognised	18.3	2.9	-	-	-	21.2 [1]
Impairment losses Dec 31 2019	**18.5**	**2.9**	**-**	**-**	**-**	**21.4**
Net carrying amount Dec 31 2019	**795.5**	**125.6**	**0.1**	**475.6**	**0.4**	**1,397.2**

[1] Impairment losses on service station chain (see Note 9.3).

(PLNm)

Exploration and production segment	Oil and gas production assets	Other non-current assets					Total
		Land	Buildings, structures	Plant and equipment	Vehicles, other	Total	
Gross carrying amount Dec 31 2018	**-**	**-**	**-**	**0.9**	**-**	**0.9**	**0.9**
Effect of changes in accounting policies	2.2	2.9	6.4	-	56.1	65.4	67.6
Gross carrying amount Jan 1 2019	**2.2**	**2.9**	**6.4**	**0.9**	**56.1**	**66.3**	**68.5**
New leases	-	-	-	-	5.1	5.1	5.1
Reclassification to right-of-use assets	-	9.8	-	-	-	9.8	9.8
Lease modifications	0.1	-	-	-	-	-	0.1
Exchange differences on translating foreign operations	-	-	-	-	0.7	0.7	0.7
Other	-	-	0.1	-	-	0.1	0.1
Gross carrying amount Dec 31 2019	**2.3**	**12.7**	**6.5**	**0.9**	**61.9**	**82.0**	**84.3**
Accumulated depreciation Jan 1 2019	**-**	**-**	**-**	**0.3**	**-**	**0.3**	**0.3**
Depreciation	0.3	0.4	1.2	0.2	21.8	23.6	23.9
Reclassification to right-of-use assets	-	4.2	-	-	-	4.2	4.2
Exchange differences on translating foreign operations	-	-	-	-	(0.3)	(0.3)	(0.3)
Accumulated depreciation Dec 31 2019	**0.3**	**4.6**	**1.2**	**0.5**	**21.5**	**27.8**	**28.1**
Impairment losses Jan 1 2019	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Recognised	0.4	-	-	-	-	-	0.4
Impairment losses Dec 31 2019	**0.4**	**-**	**-**	**-**	**-**	**-**	**0.4**
Net carrying amount Dec 31 2019	**1.6**	**8.1**	**5.3**	**0.4**	**40.4**	**54.2**	**55.8**

Leasing costs recognised in the statement of comprehensive income		2019
Depreciation and amortisation	Expenses by nature	203.4
Short-term leases	Expenses by nature: Services	57.1
Leases of low-value assets other than short-term leases	Expenses by nature: Services	0.3
Variable lease payments not included in the measurement of lease liabilities	Expenses by nature: Services	13.0
Interest on lease liabilities	Finance costs	79.7
Total		**353.5**

Allocation of depreciation	2019
Cost of sales	151.6
Distribution costs	48.0
Administrative expenses	3.8
Total	**203.4**

13.4 Other information on property, plant and equipment and intangible assets

Allocation of depreciation	2019	2018
Cost of sales	758.8	611.2
Distribution costs	117.6	73.2
Administrative expenses	33.1	28.5
Change in products and adjustments to cost of sales	(0.2)	9.8
Total	**909.3**	**722.7**

In 2019, the Group capitalised finance costs of PLN 83.4m as property, plant and equipment under construction and intangible assets under development (2018: PLN 84.6m). As at December 31st 2019, finance costs capitalised as property, plant and equipment under construction, intangible assets under development, and property, plant and equipment related to oil and gas production totalled PLN 76.2m (December 31st 2018: PLN 140.8m).

As at December 31st 2019, property, plant and equipment as well as intangible assets serving as collateral for the Group's liabilities totalled PLN 5,237.1m (December 31st 2018: PLN 8,611.0m). In connection with repayment of the 10+ Programme facilities, all mortgages and pledges on property, plant and equipment, created as security for these loans, were deleted from relevant registers (see Note 22.1).

As at December 31st 2019, the Group's future contractual commitments related to purchases of property, plant and equipment and intangible assets, undisclosed in the statement of financial position, totalled PLN 103.7m (December 31st 2018: PLN 383,4m). As at December 31st 2019, the contracted expenditure was related, among others, to the EFRA Project, development of the B-8 field, expansion of the service station network, construction of a railway loading station.

14. Equity-accounted joint ventures

The Group holds interests in equity-accounted joint ventures, which include:

- Joint venture agreement between Grupa LOTOS S.A. and BP Europe SE on joint operations related to supply of aviation fuel through LOTOS - Air BP Polska Sp. z o.o.
- Agreement on cooperation between LOTOS Petrobaltic S.A. and CalEnergy Resources Poland Sp. z o.o. with respect to development and production of gas and condensate reserves from the B-4 and B-6 fields in the Baltic Sea, performed through special purpose vehicles Baltic Gas spółka z ograniczoną odpowiedzialnością i wspólnicy sp.k. and Baltic Gas Sp. z o.o. (general partner).
- Joint venture set up for the purpose of oil exploration and production operations in Lithuania, operated in the form of UAB Minijos Nafta.

	Registered office	Business profile	The Group's ownership interest of shares		Carrying amount (PLNm)	
			Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018
Refining and marketing segment						
LOTOS-Air BP Polska Sp. z o.o.	Gdańsk	Sale of aviation fuel and logistics services	50.00%	50.00%	27.6	25.0
Exploration and production segment						
Baltic Gas Sp. z o.o.	Gdańsk	Oil and gas production (support activities for oil and gas production)	50.00%	50.00%	-	-
Baltic Gas spółka z ograniczoną odpowiedzialnością i wspólnicy sp.k. (1)	Gdańsk	Crude oil and gas production	45.71%	45.04%	114.6	92.2
UAB Minijos Nafta	Lithuania, Gargždai	Crude oil exploration and production	50.00%	50.00%	-	-
Total					**142.2**	**117.2**

(1) The ownership interests as at December 31st 2019 were determined based on the value of contributions made by individual partners relative to the sum of all contributions:

- Baltic Gas Sp. z o.o. (general partner) 0.001% (December 31st 2018: 0.001%),
- LOTOS Upstream Sp. z o.o. (limited partner) 45.707% (December 31st 2018: LOTOS Petrobaltic S.A.: 44.049%),
- CalEnergy Resources Poland Sp. z o.o. ("CalEnergy") (limited partner) 54.292% (December 31st 2018: 54.951%).

The Group's indirect ownership interest in Baltic Gas spółka z ograniczoną odpowiedzialnością i wspólnicy sp. k. (jointly-controlled entity) is 45.71% (December 31st 2018: 45.04%).

In 2019, CalEnergy Resources Poland Sp. z o.o. and LOTOS Upstream Sp. z o.o made the agreed cash contributions to Baltic Gas spółka z ograniczoną odpowiedzialnością i wspólnicy sp. k. of PLN 17.5m and PLN 17.3m, respectively, which changed the Group's ownership interest in the company. The expenditure on cash contributions made by LOTOS Upstream Sp. z o.o was disclosed by the Group in the consolidated statement of cash flows under Cash contributions − equity-accounted joint ventures.

As at December 31st 2019, LOTOS Upstream Sp. z o.o.'s outstanding liabilities under the contributions made to Baltic Gas spółka z ograniczoną odpowiedzialnością i wspólnicy sp. k. amounted to PLN 7.0m (December 31st 2018: PLN 1.7m).

	The Group's share in the companies' net profit or loss	
	2019	**2018**
Refining and marketing segment		
LOTOS-Air BP Polska Sp. z o.o.	4.5	3.6
Exploration and production segment		
Baltic Gas Sp. z o.o.	-	-
Baltic Gas spółka z ograniczoną odpowiedzialnością i wspólnicy sp.k. (1)	(0.3)	(0.3)
UAB Minijos Nafta	-	-
Total	**4.2**	**3.3**

(1) In the partnership agreement, the shares of each of the partners in the profit or loss of Baltic Gas Sp. z o.o. i wspólnicy sp.k. were defined as follows:
- Baltic Gas Sp. z o.o. holds a 0.001% share in profit and a 100% share in loss,
- LOTOS Upstream Sp. z o.o holds a 50.9995% share in profit,
- CalEnergy holds a 48.9995% share in profit.

Accordingly, for IFRS purposes, Baltic Gas Sp. z o.o. i wspólnicy sp.k is an entity jointly controlled by the Group (equity-accounted joint venture under IFRS 11).

14.1 Condensed financial information on equity-accounted joint ventures

Statement of comprehensive income	LOTOS-Air BP Polska Sp. z o.o.		Baltic Gas Sp. z o.o. i wspólnicy sp.k.		UAB Minijos Nafta	
	2019	**2018**	**2019**	**2018**	**2019**	**2018**
Revenue	531.7	680.9	-	-	24.3	30.4
Cost of sales	(480.2)	(627.5)	-	(0.2)	(20.5)	(23.7)
Gross profit/(loss)	**51.5**	**53.4**	**-**	**(0.2)**	**3.8**	**6.7**
Distribution costs	(34.2)	(38.0)	-	-	(0.1)	(0.2)
Administrative expenses	(5.5)	(4.8)	(0.4)	(0.2)	(4.7)	(6.7)
Net other income/(expenses)	(0.1)	0.1	-	-	-	-
Operating profit/(loss)	**11.7**	**10.7**	**(0.4)**	**(0.4)**	**(1.0)**	**(0.2)**
Net finance income/(costs)	(0.7)	(1.7)	-	-	0.1	0.4
Pre-tax profit/(loss)	**11.0**	**9.0**	**(0.4)**	**(0.4)**	**(0.9)**	**0.2**
Income tax	(2.2)	(1.7)	-	-	-	-
Net profit/(loss)	**8.8**	**7.3**	**(0.4)**	**(0.4)**	**(0.9)**	**0.2**
Other comprehensive income/(loss), net	(0.1)	**-**	-	**-**	-	**-**
Total comprehensive income/(loss)	**8.7**	**7.3**	**(0.4)**	**(0.4)**	**(0.9)**	**0.2**
Depreciation and amortisation	(2.9)	(1.2)	-	(0.2)	(3.3)	(4.2)

Statement of financial position	Note	LOTOS-Air BP Polska Sp. z o.o.		Baltic Gas Sp. z o.o. i wspólnicy sp.k.		UAB Minijos Nafta	
		Dec 31 2019	**Dec 31 2018**	**Dec 31 2019**	**Dec 31 2018**	**Dec 31 2019**	**Dec 31 2018**
Non-current assets		18.9	10.5	225.8	195.7	13.8	12.1
Current assets, including:		81.9	63.5	19.2	9.8	13.5	19.9
Cash and cash equivalents		21.6	6.9	16.7	8.3	6.5	10.0
Total assets		**100.8**	**74.0**	**245.0**	**205.5**	**27.3**	**32.0**
Non-current liabilities		8.9	3.2	-	-	15.0	14.6
Current liabilities		49.8	33.9	9.1	3.8	6.2	6.7
Total liabilities		**58.7**	**37.1**	**9.1**	**3.8**	**21.2**	**21.3**
Net assets		**42.1**	**36.9**	**235.9**	**201.7**	**6.1**	**10.7**
		50.00%	50.00%	*	*	50.00%	50.00%
Share of net assets		21.1	18.5	114.6	92.2	3.0	5.3
Fair value measurement		6.7 (1)	6.7	-	-	(3.0)	(5.3)
Elimination of intercompany transactions		(0.2)	(0.2)	-	-	-	-
Interest in joint ventures	14	**27.6**	**25.0**	**114.6**	**92.2**	**-**	**-**

*For IFRS purposes, Baltic Gas Sp. z o.o. i wspólnicy sp.k is an entity jointly controlled by the Group (equity-accounted joint venture under IFRS 11; see Note 14 above).

(1) PLN 6.7m in gain on fair value measurement of a retained interest in a previously controlled entity as at the date of loss of control.

For information on transactions with joint ventures in which the Group holds interests, see Note 30.1.

15. Trade receivables and other assets

	Note	Dec 31 2019	Dec 31 2018
Non-current financial assets:		**148.4**	**515.3**
Security deposits receivable		24.3	16.6
Finance lease receivables	15.2	7.1	9.1
Oil and Gas Extraction Facility Decommissioning Fund (1)		41.1	38.7
Cash pledged as security for contractual obligations related to future asset decommissioning (2)		38.9	430.6
Security deposit – ICE Futures		17.1	-
Security deposits related to licensed activities and other		10.1	10.5
Shares		9.8	9.8
Current financial assets:		**2,638.0**	**2,075.8**
Trade receivables		2,609.1	1,880.4
- including from related entities	30.1	38.8	23.1
Security deposits receivable		10.1	12.5
Deposits		-	33.9
Cash for removal of the MOPU from the YME field (3)		-	2.8
Security deposits related to the use of gas fuel distribution and transmission system and other		1.8	14.4
Damages receivable		0.4	116.0
Receivables under payment cards (service stations)		6.4	5.8
Finance lease receivables	15.2	6.0	6.6
Other receivables		4.2	3.4
Financial assets		**2,786.4**	**2,591.1**
Non-current non-financial assets		**9.7**	**10.5**
Property and other insurance		3.0	3.0
Borrowing costs		4.4	5.2
Prepaid bonuses		1.1	0.5
Other		1.2	1.8
Current non-financial assets:		**305.2**	**262.2**
Value-added tax receivable		104.4	110.3
Other receivables from the state budget other than corporate income tax		2.3	0.2
Property and other insurance		6.2	21.5
Settlements under joint operations (Norwegian fields) (4)		47.8	66.0
Excise duty on inter-warehouse transfers		60.7	49.3
Prepaid deliveries		73.3	4.1
Prepaid bonuses		0.1	1.5
Prepayments for IT services		6.1	5.0
Other		4.3	4.3
Non-financial assets		**314.9**	**272.7**
Total		**3,101.3**	**2,863.8**
including:			
non-current		158.1	525.8
current:		2,943.2	2,338.0
- trade receivables		2,609.1	1,880.4
- other		334.1	457.6

(1) Cash deposited in the bank account of the Oil and Gas Facility Decommissioning Fund (created pursuant to the Geological and Mining Law of February 4th 1994 and the Minister of Economy's Regulation of June 24th 2002) to cover future costs of decommissioning of oil extraction facilities; see Note 25.1.

(2) Cash pledged as security for contractual obligations as at December 31st 2019 was related to the future liquidation of the Heimdal assets, and as at December 31st 2018 – the Sleipner assets. On April 10th 2019, Nordea Bank Norge ASA released all funds from an escrow account to cover the decommissioning liabilities of the Sleipner area in connection with the guarantee issued to ExxonMobil Exploration and Production Norge AS under the RBL facility agreement (see Note 22.1). In the consolidated statement of cash flows from investment activities, in the item Funds for future costs of decommissioning of oil and gas extraction facilities of PLN 394.6 million, proceeds from the release of funds for the decommissioning of the Sleipner area were presented at 433.7 million, less cash used to secure the decommissioning obligation related to the Heimdal area of PLN 39.1 million.

(3) Cash held in an escrow account associated with the agreement concluded between the parties involved in the YME project in Norway (for more details on the agreement, see Note 29.1).

(4) Receivables of LOTOS Exploration and Production Norge AS (LOTOS Upstream Group, the exploration and production segment) under mutual settlements between the operator and consortium members concerning specific Norwegian fields.

As at December 31st 2018, deposits comprised deposits securing payment of interest on the 10+ Programme credit facilties and the inventory financing and refinancing facility. Following repayment of the 10+ Programme facilities and the amendment of the inventory financing and refinancing facility, as at December 31st 2019 the deposits did not serve as security for repayment of interest on the facilities (see Note 22.1).

The collection period for trade receivables in the ordinary course of business is 7−35 days.

As at December 31st 2019, PLN 17.0m of the Group's receivables was assigned by way of security for the Group's liabilities (December 31st 2018: PLN 30.3m).

For description of financial instruments, see Note 7.20. For description of the objectives and policies of financial risk management, see Note 27.
For currency risk sensitivity analysis of financial assets, see Note 27.3.1.
For interest rate risk sensitivity analysis of financial assets, see Note 27.4.1.
For maximum credit risk exposure of financial assets, see Note 27.6.

15.1 Change in impairment losses on receivables

	2019	2018
At beginning of the period	**109.9**	**104.2**
Recognised	149.2	13.6
Used	(24.9)	(4.4)
Reversed	(16.5)	(3.5)
At end of the period	**217.7**	**109.9**

Recognition included PLN 147.1m in respect of the principal amount (2018: PLN 11.7m) and PLN 2.1m in respect of interest (2018: PLN 1.9m).

Reversal included PLN 14.7m in respect of the principal amount (2018: PLN 1.9m) and PLN 1.8m in respect of interest (2018: PLN 1.6m).

In 2019, the Group recognised and reversed impairment losses on the principal portion of receivables under other expenses, in the amount of PLN 36.3m, including: PLN 51.0m under recognised impairment losses and PLN 14.7m under reversed impairment losses (see Note 9.4).

In 2018, the Group recognised and reversed impairment losses on the principal portion of receivables under other expenses, in the amount of PLN 6.4m, including: PLN 8.3m under recognised impairment losses and PLN 1.9m under reversed impairment losses (see Note 9.4).

Ageing of unimpaired past due receivables:	Dec 31 2019	Dec 31 2018
Up to 1 month	71.6	45.0
From 1 to 3 months	20.3	4.1
From 3 to 6 months	3.3	10.9
From 6 months to 1 year	2.3	10.5
Over 1 year	0.7	2.6
Total	**98.2**	**73.1**

No impairment losses were recognised on past due receivables, because they are secured against credit risk with a mortgage, pledge, insurance policy, bank guarantee or surety.

As at December 31st 2019, the share of trade receivables from the Group's five largest customers as at the end of the reporting period was 41% (December 31st 2018: 19%) of total trade receivables (individually: 0%–20%%). In the Group's opinion, with the exception of receivables from the above-mentioned customers, there is no material concentration of credit risk. The Group's maximum exposure to credit risk as at the end of the reporting period is best represented by the carrying amounts of those instruments.

15.2 Finance lease receivables

The Group has developed and operates the "LOTOS Family" Franchise Programme, which defines the procedures for managing service stations. The Group has entered into franchise agreements with entities operating service stations at their own risk and for their own account (Partners). Receivables under franchise agreements represent mainly expenditure on the design of DOFO service stations operated by dealers under agreements executed for periods from 5 to 10 years.

	Minimum lease payments		Present value of minimum lease payments	
	Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018
Up to 1 year	6.0	6.7	6.0	6.6
From 1 to 5 years	7.2	9.1	7.1	9.1
Total	**13.2**	**15.8**	**13.1**	**15.7**
Less unrealised finance income	(0.1)	(0.1)	-	-
Present value of minimum lease payments	**13.1**	**15.7**	**13.1**	**15.7**
including:				
non-current			7.1	9.1
current			6.0	6.6

16. Inventories

	Dec 31 2019	Dec 31 2018
Finished goods	1,279.1	1,382.4
Semi-finished products and work in progress	518.5	550.1
Merchandise	221.0	165.8
Materials	2,835.7	2,750.6
Total	**4,854.3**	**4,848.9**
including inventories measured at:		
cost	4,840.0	4,837.2
net realisable value	14.3	11.7

Inventories are measured at the lower of cost or cost less write-downs to net realisable value less cost to sell.

As at December 31st 2019, the amount of inventories securing liabilities under bank borrowings was valued at PLN 4,141.1m (December 31st 2018: PLN 4,108.7m).

16.1 Change in inventory write-downs

	2019	2018
At beginning of the period	**8.7**	**4.0**
Recognised	11.0	8.0
Used	-	(0.2)
Reversed	(10.2)	(3.1)
At end of the period	**9.5**	**8.7**

The effect of revaluation of inventories is taken to cost of sales.

17. Cash and cash equivalents

	Note	Dec 31 2019	Dec 31 2018
Cash and cash equivalents in the statement of financial position	26.1	1,516.6	1,941.3
Overdraft facilities		-	(3.0)
Total cash and cash equivalents in the statement of cash flows		1,516.6	1,938.3

Cash at banks bears interest at variable rates linked to short-term interest rates prevailing on the interbank market. Short-term deposits are placed for a range of maturities, from one day to one month, depending on the Group's current cash needs, and bear interest at interest rates set for them.

As at December 31st 2019, the amount of undrawn funds available to the Group under working capital facilities in respect of which all conditions precedent were satisfied was PLN 847.2m (December 31st 2018: PLN 936,4m).

In July 2018, the Group began using the VAT split payment mechanism. As at December 31st 2019, the cash balance in VAT accounts was PLN 78.3m (December 31st 2018: PLN 83.3m).

As at December 31st 2019, cash in bank accounts serving as security for the Group's liabilities was PLN 499.0m (December 31st 2018: PLN 412.2m).

18. Share capital

	Dec 31 2019	Dec 31 2018
Series A shares	78.7	78.7
Series B shares	35.0	35.0
Series C shares	16.2	16.2
Series D shares	55.0	55.0
Total	**184.9**	**184.9**

As at December 31st 2019 and December 31st 2018, the share capital comprised 184,873,362 ordinary shares, fully paid-up, with a par value of PLN 1 per share. Each share confers the right to one vote at the General Meeting and carries the right to dividend.

19. Share premium

Share premium represents the excess of the issue price over the par value of Series B, C and D shares, net of costs directly attributable to the share issue.

	Series B	Series C	Series D	Total
Share premium	980.0	340.8	940.5	2,261.3
Costs directly attributable to the share issue	(9.0)	(0.4)	(23.6)	(33.0)
Total	**971.0**	**340.4**	**916.9**	**2,228.3**

20. Cash flow hedging reserve

Cash flow hedging reserve comprises changes in the valuation of foreign-currency bank borrowings used as cash flow hedges for USD-denominated sales, less the effect of deferred income tax.

Changes in the fair value of derivative financial instruments designated as cash flow hedges are charged to the cash flow hedging reserve to the extent they represent an effective hedge, while the ineffective portion is charged to finance income or costs in the reporting period.

	Note	2019	2018
At beginning of the period		**(288.2)**	**(225.2)**
Valuation of cash flow hedging instruments	26.2	104.5	(77.8)
- effective portion		107.3	(78.7)
- ineffective portion		(2.8)	0.9
Income tax on valuation of cash flow hedging instruments	10.1	(19.9)	14.8
At end of the period		**(203.6)**	**(288.2)**

21. Retained earnings

Retained earnings comprise capital reserves created and used in accordance with the rules stipulated by the applicable laws and deeds of incorporation, as well as current period's profit.

Furthermore, retained earnings include actuarial gains/losses relating to defined post-employment benefits, recognised inclusive of the tax effect, which are posted under Other comprehensive income/(loss), net in the statement of comprehensive income.

As at December 31st 2019 and December 31st 2018, Grupa LOTOS S.A. was restricted in its ability to distribute dividends; see Note 12.

21.1 Restricted ability of subsidiaries to transfer funds to the Parent in the form of dividends

In 2019 and 2018, the ability of the LOTOS Group subsidiaries to transfer funds to Grupa LOTOS S.A. in the form of dividends was restricted due to the following arrangements:

- The amount of cash surplus generated by LOTOS Paliwa Sp. z o.o. in a financial year that is available for distribution depends on the achievement of certain ratios defined in credit facility agreements.
- At LOTOS Asfalt Sp. z o.o., dividend payment is restricted under the credit facility agreement for the financing of the EFRA Project, whereby distribution of dividends is not permitted before the first instalment of the credit facility is paid and the EFRA Project is completed (the first instalment was paid on December 21st 2018). Payment of dividends from operating cash flows is conditional upon fulfilment of the requirements defined in the agreement, including generation of a sufficient cash surplus and achievement of financial ratios at prescribed levels.

These restrictions were applicable as at December 31st 2019 and December 31st 2018.

22. Borrowings, other debt instruments and lease liabilities

	Note	Dec 31 2019	Dec 31 2018
Bank borrowings	22.1	2,865.2	3,421.2
Non-bank borrowings	22.2	43.4	55.8
Notes	22.3	231.8	227.0
Leases	22.4	1,276.0	180.0
Total		**4,416.4**	**3,884.0**
including:			
non-current		3,142.6	2,345.3
current		1,273.8	1,538.7

	Bank borrowings	Non-bank borrowings	Notes	Leases	Total
Dec 31 2018	**3,421.2**	**55.8**	**227.0**	**180.0**	**3,884.0**
Effect of changes in accounting policies	-	-	-	1,091.6	**1,091.6**
Jan 1 2019	**3,421.2**	**55.8**	**227.0**	**1,271.6**	**4,975.6**
Net proceeds	283.4	-	-	-	**283.4**
Net repayments	(1,347.3)	(11.9)	-	(181.1) [(1)]	**(1,540.3)**
Interest, fees and commissions paid	(156.7)	(2.5)	(9.4)	(73.7)	**(242.3)**
New leases	-	-	-	203.9	**203.9**
Interest, fees and commissions accrued	174.3	2.2	12.0	79.7	**268.2**
Prepayments and accruals	35.0	0.1	-	-	**35.1**
Exchange differences	39.5	-	2.2	0.3	**42.0**
Change in overdraft facilities	(3.0)	-	-	-	**(3.0)**
Change in deposits securing payment of interest and principal	418.8	-	-	-	**418.8**
Other	-	(0.3)	-	(24.7)	**(25.0)**
Dec 31 2019	**2,865.2**	**43.4**	**231.8**	**1,276.0**	**4,416.4**

[(1)] The item "Payment of lease liabilities" in the statement of cash flows includes upfront lease payments of PLN 13.3m.

	Bank borrowings	Non-bank borrowings	Notes	Leases	Total
Jan 1 2018	**3,903.0**	**68.3**	**313.0**	**141.6**	**4,425.9**
Net proceeds	366.6	-	128.2	-	**494.8**
Net repayments	(1,109.5)	(12.8)	(214.8)	(33.0)	**(1,370.1)**
Interest, fees and commissions paid	(178.4)	(3.0)	(21.4)	(21.5)	**(224.3)**
New leases	-	-	-	72.6	**72.6**
Interest, fees and commissions accrued	179.0	3.2	8.6	16.1	**206.9**
Prepayments and accruals	17.4	0.1	-	-	**17.5**
Exchange differences	298.9	-	13.4	1.1	**313.4**
Change in overdraft facilities	2.9	-	-	-	**2.9**
Change in deposits securing payment of interest and principal	(58.7)	-	-	-	**(58.7)**
Other	-	-	-	3.1	**3.1**
Dec 31 2018	**3,421.2**	**55.8**	**227.0**	**180.0**	**3,884.0**

22.1 Bank borrowings

	Dec 31 2019	Dec 31 2018
Investment facilities	2,674.9	3,078.4
Working-capital facilities	0.2	8.8
Inventory financing and refinancing facility	190.1	752.8
Funds in bank deposits securing payment of interest and principal	-	(418.8)
Total	**2,865.2**	**3,421.2**
including:		
non-current	2,100.5	2,158.1
current	764.7	1,263.1

Repayment of the above facilities is secured with:

- power of attorney over bank accounts, blank promissory notes and bank guarantees,
- registered pledges over bank accounts, inventories, licences, existing and future movables, and shares in subsidiaries,
- mortgage,
- transfer of title to property, plant and equipment,
- assignment by way of security of rights under insurance agreements, including insurance of inventories,
- assignment by way of security of rights under inventory storage agreements,
- assignment by way of security of rights under licence agreements, design agreements and agreements for sale of products,
- assignment by way of security of rights under a conditional loan agreement,
- assignment of receivables,
- representation on voluntary submission to enforcement.

Bank borrowings by currency

	Currency of credit facility advanced to the Group		
	USD	PLN	Total
Dec 31 2019	2,687.2	178.0	**2,865.2**
Dec 31 2018	3,200.2	221.0	**3,421.2**

Bank borrowings bear interest based on:

- 1M, 3M or 6M LIBOR (USD), depending on the interest period selected at a given time − in the case of USD-denominated facilities,
- 1M or 3M WIBOR − in the case of PLN-denominated facilities.

As at December 31st 2019, the average effective interest rate for the credit facilities denominated in US dollars was approximately 3.76% (December 31st 2018: 4.46%). The average effective interest rate for PLN-denominated facilities (excluding the syndicated facilities contracted by the Parent) was approximately 3.51% (December 31st 2018: 3.54%).

Pursuant to the terms of the inventory financing and refinancing facility, the Parent is required to maintain the Tangible Consolidated Net Worth (TCNW) and the Loan to Pledged Inventory Value Ratio at levels no higher than those specified in the facility agreement. As at December 31st 2019 and December 31st 2018, the Parent complied with this requirement.

For sensitivity analysis of borrowings with respect to currency and interest rate risks, see Notes 27.3.1 and 27.4.1 respectively. For analysis of contractual maturities of the borrowings, see Note 27.5.

Refinancing of the 10+ Programme credit facilities

On July 2nd 2019, Grupa LOTOS S.A. and a bank syndicate comprising:

- ING Bank Śląski S.A.,
- Bank 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.,
- and Erste Group Bank AG,

signed credit facility agreements for a total amount of USD 500m to refinance the 10+ Programme credit facilities contracted in 2008.

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

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

The facilities must be repaid within five years of disbursement. They bear interest at variable rates based on LIBOR, EURIBOR and WIBOR. Repayment is secured by a declaration of voluntary submission to enforcement. The other terms and conditions of the credit facility agreements do not differ from standard terms commonly applied in agreements of such type.

On July 15th 2019, the PLN 1,515.6m credit facility (USD 400m) was disbursed. At the same time, through settlements between the banks, the entire amount of the facility was transferred to repay debt under the facility agreements executed in 2008 to finance the 10+ Programme. The balance of debt related to the financing of the 10+ Programme, of PLN 200.1m (USD 53.4m), was repaid with Grupa LOTOS S.A.'s cash, as presented in the statement of cash flows from financing activities under: Repayment of bank borrowings. Following the repayment of the 10+ Programme facilities, all related security interests, including registered pledges and mortgages created over the Company's assets, were released.

Under the facility agreements discussed above, Grupa LOTOS S.A. is required to maintain its net debt/ EBITDA ratio at or below the level specified in the agreements. As at December 31st 2019, the Company complied with the covenants.

As at December 31st 2019, the nominal amount of funds drawn under the facilities was PLN 1,519.1m (USD 400m). As at December 31st 2018, the nominal amount of funds drawn under the 10+ Programme credit facilities was PLN 1,951.2m (USD 519m).

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 collateralized by oil and gas reserves) with a bank syndicate, with a limit of up to USD 220m. 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 1.070m guarantee in respect of Sleipner DSA decommissioning liabilities, issued by Bank BNP Paribas in favour of Exxon Exploration and Production Norge AS,
- a NOK 167m guarantee in respect of Heimdal decommissioning liabilities, issued by PKO Bank Polski in favour of Spirit Energy Norway AS.

As at December 31st 2019, LOTOS Exploration and Production Norge AS had no liabilities under the agreement.

Proceeds from and repayment of bank borrowings

In 2019, proceeds from the Group's bank borrowings were PLN 283.4m (2018: PLN 366.6m), while cash outflows on repayment of borrowings were PLN 1,347.3m (2018: PLN 1,109.5m). These amounts are presented in the consolidated statement of cash flows as cash flows from financing activities under Proceeds from bank borrowings and Repayment of bank borrowings, respectively.

In 2019, proceeds from bank borrowings included:
- credit facilities contracted by LOTOS Asfalt Sp. z o.o. (PLN 273.9m),
- credit facilities contracted by AB LOTOS Geonafta (PLN 9.5m),

In 2019, repayments of bank borrowings included:
- repayment of the 10+ Programme credit facilities by the Parent (PLN 453.9m),
- repayment of the inventory financing and refinancing facility by the Parent (PLN 576.1m),
- repayment of credit facilities by LOTOS Asfalt Sp. z o.o. (PLN 249.9m).
- repayment of investment credit facilities contracted by LOTOS Paliwa Sp. z o.o. to finance and refinance purchase of service stations (PLN 26.7m),
- repayment of credit facilities by AB LOTOS Geonafta (PLN 24.3m),
- repayment of an investment facility contracted by SPV Baltic Sp. z o.o. to finance purchase of the a multi-purpose platform (PLN 11.3m).
- repayment of credit facilities by LOTOS Terminale S.A. (PLN 5.1m).

In 2019 and 2018, there were no defaults under the facilities.

For more information on the Group's bank borrowings, see the Directors' Report on the operations of Grupa LOTOS S.A. and the LOTOS Group in 2019.

22.2 Non-bank borrowings

	Dec 31 2019	Dec 31 2018
Provincial Fund for Environmental Protection and Water Management in Gdańsk (WFOŚiGW)	3.6	4.6
Agencja Rozwoju Przemysłu S.A.	39.8	51.2
Total	**43.4**	**55.8**
including:		
non-current	35.7	42.2
current	7.7	13.6

The loan advanced by Agencja Rozwoju Przemysłu S.A. was intended for the financing of a purchase of a drilling rig; the other loans were taken out to partly finance upgrade of locomotives and a rail tank car cleaning facility.

Repayment of the loans is secured with:
- registered pledge over assets,
- registered and financial pledges over shares,
- assignment by way of security of rights under insurance policies and sale agreements,
- assignment by way of security of claims related to bank accounts,
- blank promissory notes and representation on voluntary submission to enforcement,
- sureties issued by Group companies.

The loans are denominated in the Polish złoty. The loans bear interest based on 1M WIBOR or the rediscount rate.

As at December 31st 2019, the average effective interest rate for the loans was approximately 4.58% (December 31st 2018: 4.60%).

For interest rate risk sensitivity analysis of the loans, see Note 27.4.1.
For analysis of contractual maturities of the loans, see Note 27.5.

Proceeds from and repayment of non-bank borrowings

In 2019 and 2018, the Group did not contract any non-bank borrowings, whereas repayments of non-bank borrowings were PLN 11.9m (2018: PLN 12.8m). These amounts are presented in the consolidated statement of cash flows as cash flows from financing activities under: Repayment of non-bank borrowings.

22.3 Notes

In 2016, the SPV B8 Spółka z ograniczoną odpowiedzialnością Baltic S.K.A. (exploration and production segment) 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.

Security under the above agreements includes:

- pledges over shares,
- pledge over bank accounts,
- pledge over receivables,
- pledge over assets.

On July 25th 2018, B8 spółka z ograniczoną odpowiedzialnością Baltic S.K.A. and Bank Gospodarstwa Krajowego concluded an annex to the senior note programme agreement and annexes 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 30m. The issue proceeds were used to redeem all notes acquired by Polski Fundusz Rozwoju S.A. All the issued notes are due at dates falling in the period from September 30th 2020 to December 31st 2021. With respect to the currently outstanding notes of B8 Spółka z ograniczoną odpowiedzialnością Baltic S. K. A., as at December 31st 2019 the project schedule and budget were exceeded, and therefore the long-term portion of the liabilities under the agreement was presented in current liabilities. As at December 31st 2019, BGK did not accelerate the liabilities. In addition, negotiations with the bank to secure further financing are ongoing and are scheduled to be concluded in March 2020.

As at December 31st 2019, the liability under the outstanding notes issued by B8 Spółka z ograniczoną odpowiedzialnością Baltic S.K.A., net of issue costs, was PLN 231.8m (December 31st 2018: PLN 227.0m).

Proceeds from and payments under notes

In 2019, the Group did not issue or redeem any notes. In 2018, proceeds from notes issued by the Group were PLN 128.2m and comprised proceed from the issue of notes by the special purpose vehicle B8 Spółka z ograniczoną odpowiedzialnością Baltic S.K.A. In the same period, outflows on redemption of notes were PLN 214.8m and included note redemptions by: LOTOS Petrobaltic S.A. (PLN 113.8m) and B8 Spółka z ograniczoną odpowiedzialnością BALTIC S.K.A. (PLN 101.0m). These amounts are presented in the statement of cash flows as cash flows from financing activities under: Issue of notes and Redemption of notes, respectively.

For sensitivity analysis of the notes with respect to currency and interest rate risks, see Notes 27.3.1 and 27.4.1, and for analysis of their contractual maturities see Note 27.5.

22.4 Lease liabilities

	Minimum lease payments		Present value of minimum lease payments	
	Dec 31 2019	Dec 31 2018	Dec 31 2019	Dec 31 2018
Up to 1 year	335.7	56.6	269.6	35.0
From 1 to 5 years	714.4	161.3	407.7	106.3
From 5 to 10 years.	381.4	43.1	209.0	38.7
From 10 to 30 years.	458.8	-	247.7	-
From 30 to 50 years.	233.2	-	49.4	-
From 50 to 90 years.	171.5	-	92.6	-
Total	**2,295.0**	**261.0**	**1,276.0**	**180.0**
Less finance costs	(1,019.0)	(81.0)	-	-
Present value of minimum lease payments	**1,276.0**	**180.0**	**1,276.0**	**180.0**
including:				
non-current			1,006.4	145.0
current			269.6	35.0

For sensitivity analysis of lease liabilities with respect to currency and interest rate risks, see Notes 27.3.1 and 27.4.1, and for analysis of their maturities, see Note 27.5.

22.4.1 Undisclosed liabilities under operating lease agreements

	Dec 31 2018
Up to 1 year	177.5
From 1 to 5 years	225.3
Over 5 years	969.2
Total	**1,372.0**

Upon adopting IFRS 16, the Group recognised lease liabilities related to agreements previously classified as operating leases in accordance with the requirements of IAS 17; see Note 4.

23. Derivative financial instruments

	Note	Dec 31 2019	Dec 31 2018
Non-current financial assets		**0.1**	**9.1**
Commodity swaps (raw materials and petroleum products)		0.1	2.1
Interest rate swap (IRS)		-	7.0
Current financial assets		**25.1**	**15.3**
Commodity swaps (raw materials and petroleum products)		1.5	11.7
Currency forward and spot contracts		13.2	-
Interest rate swap (IRS)		-	0.8
Currency swap		10.4	2.8
Financial assets	**26.1**	**25.2**	**24.4**
Non-current financial liabilities		**6.6**	**6.9**
Commodity swaps (raw materials and petroleum products)		3.0	6.6
Interest rate swap (IRS)		3.6	0.3
Current financial liabilities		**15.3**	**47.4**
Commodity swaps (raw materials and petroleum products)		12.3	15.0
Currency forward and spot contracts		-	21.8
Interest rate swap (IRS)		3.0	6.8
Currency swap		-	3.8
Financial liabilities	**26.1**	**21.9**	**54.3**

For description of the derivative financial instruments, see Note 7.22. For description of objectives and policies of financial risk management, see Note 27. For classification of derivative financial instruments by fair value hierarchy, see Note 23.1.
For sensitivity analysis of derivative financial instruments in terms of market risk related to changes in raw material and petroleum product prices, see Note 27.1.1.
For currency risk sensitivity analysis of derivative financial instruments, see Note 27.3.1.
For interest rate sensitivity analysis of derivative financial instruments, see Note 27.4.1.
For information on contractual maturities of derivative financial instruments, see Note 27.5.
For information on maximum credit risk exposure of derivative financial instruments (financial assets), see Note 27.6.

23.1 Fair value hierarchy

	Dec 31 2019	Dec 31 2018
	Level 2	
Financial assets		
Commodity swap	1.6	13.8
Currency forward and spot contracts	13.2	-
Interest rate swap (IRS)	-	7.8
Currency swap	10.4	2.8
Total	**25.2**	**24.4**
Financial liabilities		
Commodity swap	15.3	21.6
Currency forward and spot contracts	-	21.8
Interest rate swap (IRS)	6.6	7.1
Currency swap	-	3.8
Total	**21.9**	**54.3**

24. Employee benefit obligations

	Note	Dec 31 2019	Dec 31 2018
Non-current liabilities:	**24.1**	**207.5**	**170.4**
Post-employment benefits	24.1	52.4	40.9
Length-of-service awards and other benefits	24.1	155.1	129.5
Current liabilities		**174.3**	**156.2**
Post-employment benefits	24.1	7.4	7.4
Length-of-service awards and other benefits	24.1	14.7	13.4
Bonuses, awards and unused holidays		114.9	100.9
Salaries and wages payable		37.3	34.5
Total		**381.8**	**326.6**

24.1 Obligations under length-of-service awards and post-employment benefits

In accordance with the Group's remuneration systems, the Group employees are entitled to post-employment benefits upon retirement. Length-of-service awards are paid after a specific period of employment. Therefore, based on valuations prepared by professional actuary firms or based on own estimates, the Group recognises the present value of obligations under length-of-service awards and post-employment benefits. The table below provides information on the amount of the obligations and reconciliation of changes in the obligations during the reporting period.

		Post-employment benefits		Length-of-service awards and other benefits		Total	
	Note	2019	2018	2019	2018	2019	2018
Jan 1		**47.5**	**46.4**	**142.9**	**140.5**	**190.4**	**186.9**
Current service cost	24.2	2.9	2.7	11.3	10.7	14.2	13.4
Cost of discount	24.2; 9.6	1.2	1.3	3.9	4.1	5.1	5.4
Past service cost	24.2	-	1.6	-	0.1	-	1.7
Benefits paid		(3.7)	(4.3)	(13.6)	(12.8)	(17.3)	(17.1)
Actuarial (gains)/losses under profit or loss	24.2	-	-	25.3	0.3	25.3	0.3
Actuarial (gains)/losses under other comprehensive income	24.2	10.8	(0.2)	-	-	10.8	(0.2)
Dec 31		**58.7**	**47.5**	**169.8**	**142.9**	**228.5**	**190.4**
including:							
non-current		51.7	40.4	155.1	129.5	206.8	169.9
current		7.0	7.1	14.7	13.4	21.7	20.5
Obligations under length-of-service awards and post-employment benefits at foreign companies(1)		1.1	0.8	-	-	1.1	0.8
Dec 31		**59.8**	**48.3**	**169.8**	**142.9**	**229.6**	**191.2**
including:							
non-current		52.4	40.9	155.1	129.5	207.5	170.4
current		7.4	7.4	14.7	13.4	22.1	20.8

(1) Given the different nature of retirement plans at the AB LOTOS Geonafta Group companies, and their immaterial effect on the Group's obligations under length-of-service awards and post-employment benefits, those companies' obligations are presented separately under Obligations under length-of-service awards and post-employment benefits at foreign companies.

24.2 Total cost of future employee benefit payments charged to profit or loss

	Note	2019	2018
Items recognised in profit or loss:		**44.6**	**20.8**
Length-of-service awards, retirement and other post-employment benefits	9.2	39.5	15.4
- current service cost	24.1	14.2	13.4
- past service cost	24.1	-	1.7
- effect of foreign operations		-	-
- actuarial (gains)/losses	24.1	25.3	0.3
Cost of discount	24.1; 9.6	5.1	5.4
Items recognised in other comprehensive income:		**10.9**	**(0.4)**
Actuarial (gains)/losses	24.1	10.8	(0.2)
Effect of foreign operations		0.1	(0.2)
Total comprehensive income		**55.5**	**20.4**

24.3 Actuarial assumptions

Key assumptions adopted by the actuary	Dec 31 2019	Dec 31 2018
Discount rate (%)	2.00%	3.00%
Expected inflation rate (%)	2.50%	2.50%
Employee turnover ratio (%)	3.35%	3.30%
Expected growth rate of salaries and wages (%) in the following year	5.00%	1.30% + PLN 150
Expected growth rate of salaries and wages (%) in the following years	2.50%	2.50%

- The employee attrition probability is based on the historical data on employee turnover at the Group and statistical data on the Polish labour market. The employee turnover ratios applied by the actuary were determined separately for five age categories in ten-year intervals. The employee turnover ratio is now calculated on an average basis.
- The mortality and life expectancy ratios are based on the Life Expectancy Tables of Poland for 2016, published by Statistics Poland (GUS), and assume that the Company's employee population is representative of the average Polish population in terms of mortality (December 31st 2018: Life Expectancy Tables of Poland for 2016).
- It was assumed that employees would retire in accordance with the standard procedure, as prescribed by the Pensions Act, with the exception of employees who, according to the information provided by the Company, meet the conditions for early retirement entitlement.
  The discount rate on future benefits was assumed at 2.0%, i.e. reflecting the assumption made at the corporate level (December 31st 2018: 3.0%, i.e. reflecting the assumption made at the corporate level).

24.4 Termination benefits

In 2019, termination benefits and compensation payable in respect of the non-compete obligation totalled PLN 7.6m (2018: PLN 8.1m).

In 2019, the amount of provisions for termination benefits was PLN 0.1m (2018: PLN 0.2m).

24.5 Sensitivity analysis

The table below presents results of calculations for changed key actuarial assumptions: the salaries and wages growth rate and the discount rate.

Initial obligation balance

Salaries and wages growth rate	Discount rate	Length-of-service awards	Old-age and disability retirement severance payments	Death benefits	Social benefits fund	Total [1]
base	base	149.8	50.1	13.9	14.7	228.5
base + 1%	base	161.6	55.1	15.0	17.4	249.1
base - 1%	base	139.5	45.6	12.8	12.6	210.5
base	base + 0.5%	144.8	47.9	13.4	13.8	219.9
base	base - 0.5%	155.2	52.3	14.4	15.9	237.8

[1] Given the different nature of retirement plans at the AB LOTOS Geonafta Group companies, and their immaterial effect on the Group's obligations under length-of-service awards and post-employment benefits, those companies' obligations are not included in the analysis.

The tables below present results of calculations for changed key actuarial assumptions: the salaries and wages growth rate and the discount rate.

Current service cost projected for 2020

Salaries and wages growth rate	Discount rate	Length-of-service awards	Old-age and disability retirement severance payments	Death benefits	Social benefits fund	Total [1]
base	base	12.3	3.1	1.2	0.9	17.5
base + 1%	base	13.7	3.6	1.3	1.1	19.7
base - 1%	base	11.1	2.7	1.1	0.7	15.6
base	base + 0.5%	11.7	2.9	1.1	0.8	16.5
base	base - 0.5%	12.8	3.4	1.2	1.0	18.4

Cost of discount projected for 2020

Salaries and wages growth rate	Discount rate	Length-of-service awards	Old-age and disability retirement severance payments	Old-age and disability retirement severance payments	Social benefits fund	Total [1]
base	base	2.7	0.9	0.3	0.3	4.2
base + 1%	base	3.0	1.0	0.3	0.3	4.6
base - 1%	base	2.5	0.8	0.2	0.2	3.7
base	base + 0.5%	3.3	1.0	0.3	0.3	4.9
base	base - 0.5%	2.1	0.7	0.2	0.2	3.2

Total current service cost and cost of discount projected for 2020

Salaries and wages growth rate	Discount rate	Length-of-service awards	Old-age and disability retirement severance payments	Death benefits	Social benefits fund	Total [1]
base	base	15.0	4.0	1.5	1.2	21.7
base + 1%	base	16.7	4.6	1.6	1.4	24.3
base - 1%	base	13.6	3.5	1.3	0.9	19.3
base	base + 0.5%	15.0	3.9	1.4	1.1	21.4
base	base - 0.5%	14.9	4.1	1.4	1.2	21.6

[1] Given the different nature of retirement plans at the AB LOTOS Geonafta Group companies, and their immaterial effect on the Group's obligations under length-of-service awards and post-employment benefits, those companies' obligations are not included in the analysis.

25. Trade payables, other liabilities and provisions

	Note	Dec 31 2019	Dec 31 2018
Non-current financial liabilities:		**22.9**	**26.1**
Investment commitments		5.1	9.5
Liabilities towards the Polish National Foundation		13.3	15.3
Other		4.5	1.3
Current financial liabilities:		**2,283.4**	**2,167.1**
Trade payables		1,940.8	1,913.7
- including to related entities	30.1	2.6	5.2
Investment commitments		222.6	69.9
Liabilities to insurers		5.7	6.4
Settlements under joint operations (Norwegian fields) (1)		76.8	119.5
Liabilities towards the Polish National Foundation		2.5	2.5
Security deposit – ICE Futures		-	32.7
Other		35.0	22.4
- including to related entities	14	7.0	1.7
Financial liabilities		**2,306.3**	**2,193.2**
Non-current non-financial liabilities:		**1,243.1**	**1,170.7**
Provisions	25.1	1,234.5	1,159.5
Grants	25.2	8.4	8.8
Other		0.2	2.4
Current non-financial liabilities:		**1,894.9**	**1,670.1**
Provisions	25.1	111.4	121.8
Value-added tax payable		525.0	443.8
Excise duty and fuel charge payable		877.7	786.7
Other liabilities to the state budget other than corporate income tax		157.4	106.1
Grants	25.2	22.5	29.5
Settlements under joint operations (Norwegian fields) (1)		6.6	13.2
Prepaid deliveries		3.7	10.2
Liabilities under the NAVIGATOR loyalty programme		31.5	28.1
Provision for deficit in CO_2 emission allowances	27.2	71.8	40.7
Provision for NIT emission charge		29.6	-
Provision for RES emission charge		14.5	19.0
Cost of services		17.9	30.3
Other		25.3	40.7
Non-financial liabilities		**3,138.0**	**2,840.8**
Total		**5,444.3**	**5,034.0**
including:			
non-current		1,266.0	1,196.8
current:		4,178.3	3,837.2
- trade receivables		1,940.8	1,913.7
- other		2,237.5	1,923.5

(1) Liabilities of LOTOS Exploration and Production Norge AS (LOTOS Upstream Group, the exploration and production segment) under mutual settlements between the operator and consortium members in relation to individual Norwegian fields.

Trade payables do not bear interest and are typically paid in 7-60 days. Other liabilities do not bear interest and their average payment period is one month. Amounts resulting from the difference between value added tax receivable and value added tax payable are paid to the relevant tax authorities on a monthly basis. Interest payable is usually settled on a monthly basis during a financial year.

For currency risk sensitivity analysis of trade and other payables, see Note 27.3.1.

For information on contractual maturities of trade and other payables, see Note 27.5.

25.1 Provisions

	Note	Provisions for decommissioning and restoration costs					Other provisions	Total
		Provision for oil and gas extraction facilities			Provisions for retired refining and other units	Total		
		Poland	Norway	Lithuania				
Jan 1 2019		**228.2**	**863.4**	**15.6**	**12.8**	**1,120.0**	**161.3**	**1,281.3**
Recognised		-	-	-	3.5	3.5	10.1	13.6
Remeasurement of decommissioning costs		32.5	42.5 (1)	1.1	-	76.1	0.2	76.3
Remeasurement of estimated provision for contingent payments	9.3	-	-	-	-	-	(44.5)	(44.5)
Change in provisions attributable to approaching due date of liability (discount unwinding effect)	9.6	6.8	34.8	0.8	-	42.4	2.0	44.4
Interest on Oil and Gas Facility Decommissioning Fund		0.4	-	-	-	0.4	-	0.4
Transfer		-	-	-	-	-	0.1	0.1
Exchange differences on translating foreign operations		-	(1.8)	(0.1)	-	(1.9)	0.6	(1.3)
Used		-	(0.5)	-	-	(0.5)	(22.6) (2)	(23.1)
Reversed		-	-	-	(0.1)	(0.1)	(1.2)	(1.3)
Dec 31 2019		**267.9**	**938.4**	**17.4**	**16.2**	**1,239.9**	**106.0**	**1,345.9**
including:								
non-current		267.9	928.2	17.4	16.1	1,229.6	4.9	1,234.5
current		-	10.2	-	0.1	10.3	101.1	111.4

Provisions for decommissioning and site restoration costs:

Provision for oil and gas extraction facilities in Poland – a provision for future costs of decommissioning of the oil and gas extraction facilities in the B-3 and B-8 licence areas, and the Oil and Gas Extraction Facility Decommissioning Fund, set up to cover future costs of decommissioning of oil and gas extraction facilities in accordance with the Geological and Mining Law of February 4th 1994 and the Minister of Economy's Regulation of June 24th 2002.

Provision for oil and gas extraction facilities in Norway − a provision for future costs of decommissioning of the oil extraction facilities in the YME field, and the oil and gas extraction facilities in the Heimdal, Sleipner and Utgard fields.

Provision for oil and gas extraction facilities in Lithuania − a provision for future costs of decommissioning of the Lithuanian oil extraction facilities.

Provisions for retired refining and other units − a provision for site restoration and the cost of disassembly and decommissioning of the retired units at LOTOS Terminale S.A., a provision for estimated cost of disassembly of the subsea pipeline operated by a subsidiary Energobaltic Sp. z o.o. (a company of the LOTOS Petrobaltic Group), as well as for site restoration and clean-up.

(1) The amount includes remeasurement of provisions for future costs of decommissioning of crude oil and gas extraction facilities related to the Heimdal, Sleipner and YME assets.
(2) Including PLN 21.6m related to a provision for contingent payments under the Sleipner assets acquisition agreement.

(PLNm)

	Note	Provisions for decommissioning and restoration costs: Provision for oil and gas extraction facilities: Poland	Norway	Lithuania	Provisions for retired refining and other units	Total	Other provisions	Total
Jan 1 2018		**196.9**	**814.8**	**13.1**	**12.5**	**1,037.3**	**37.0**	**1,074.3**
Recognised		-	-	-	-	-	72.3	72.3
Remeasurement of decommissioning costs		22.0	1.2	1.2	0.6	25.0	-	25.0
Remeasurement of estimated provision for contingent payments	9.4	-	-	-	-	-	69.2	69.2
Change in provisions attributable to approaching due date of liability (discount unwinding effect)	9.6	8.9	33.9	0.9	-	43.7	0.1	43.8
Interest on Oil and Gas Facility Decommissioning Fund		0.4	-	-	-	0.4	-	0.4
Exchange differences on translating foreign operations		-	15.7	0.4	-	16.1	(1.5)	14.6
Used		-	(2.2)	-	-	(2.2)	(11.7)	(13.9)
Reversed		-	-	-	(0.3)	(0.3)	(4.1)	(4.4)
December 31st 2018		**228.2**	**863.4**	**15.6**	**12.8**	**1,120.0**	**161.3**	**1,281.3**
including:								
non-current		228.2	852.6	15.6	12.7	1,109.1	50.4	1,159.5
current		-	10.8	-	0.1	10.9	110.9	121.8

Provisions for decommissioning and site restoration costs:

Provision for oil and gas extraction facilities in Poland – a provision for future costs of decommissioning of the oil and gas extraction facilities in the B-3 and B-8 licence areas, and the Oil and Gas Extraction Facility Decommissioning Fund, set up to cover future costs of decommissioning of oil and gas extraction facilities in accordance with the Geological and Mining Law of February 4th 1994 and the Minister of Economy's Regulation of June 24th 2002.

Provision for oil and gas extraction facilities in Norway − a provision for future costs of decommissioning of the oil extraction facility in the YME field (including the provision for future costs of MOPU removal) and the oil and gas extraction facilities in the Heimdal and Sleipner fields.

Provision for oil and gas extraction facilities in Lithuania − a provision for future costs of decommissioning of the Lithuanian oil extraction facilities.

Provisions for retired refining and other units − a provision for site restoration and the cost of disassembly and decommissioning of the retired units at LOTOS Terminale S.A., a provision for estimated cost of disassembly of the subsea pipeline operated by a subsidiary Energobaltic Sp. z o.o. (a company of the LOTOS Petrobaltic Group), as well as for site restoration and clean-up.

Provision for oil and gas extraction facilities − Norway

Provision for decommissioning and restoration of oil extraction facility in the YME field

As at December 31st 2019, the provision for decommissioning and restoration of the extraction facility in the YME field, totalling PLN 173.9m, was disclosed under Other liabilities and provisions and reflected the current estimate, made based on the Group's best knowledge, of future costs of removal of the YME infrastructure and costs of site restoration, assuming that the project is decommissioned in 2032. As at December 31st 2018, the provision was PLN 153.0m.

Provision for decommissioning and restoration of gas extraction facilities in the Heimdal fields

Decommissioning of the fixed assets of the offshore oil and gas extraction facility in the Heimdal fields and site restoration work are scheduled for 2019–2023. As at December 31st 2019, the provision was disclosed in the Group's statement of financial position under Other liabilities and provisions at PLN 217.1m. As at December 31st 2018, the provision was PLN 188.5m.

Provision for decommissioning and restoration of gas extraction facilities in the Sleipner and Utgard fields

Decommissioning of fixed assets and restoration of the offshore area of the oil and gas extraction facility on the Sleipner fields and the Utgard field, launched in 2019, are scheduled for 2026-2038. As at December 31st 2019, the provision was disclosed in the Group's statement of financial position under Other liabilities and provisions at PLN 547.4m. As at December 31st 2018, the provision was PLN 519.5m.

Other provisions

The Group estimated a provision for future liabilities to Exxon Mobil as a final contractual settlement of the purchase of the Sleipner fields as part of a value-adjustment mechanism. The provision reflects the adjusted difference between the forecast production volume and prices in 2019-2020, and the assumptions adopted for transaction purposes. As at December 31st 2019, the provision was PLN 8.6m. As at December 31st 2018, the provision was PLN 72.1m. The main cause of the significant decrease in the provision was the decline in market prices of gas and crude oil.

The tax risk provision as at December 31st 2019 was PLN 83.1m. As at December 31st 2018, the provision was PLN 79.0m.

25.2 Grants

	Note	Dec 31 2019	Dec 31 2018
At beginning of the period		**38.4**	**36.0**
Grants received in the period		10.2	11.8
Deferred grants		(17.7)	(9.5)
At end of the period		**30.9**	**38.3**
including:			
non-current	25	8.4	8.8
current	25	22.5	29.5

The grants are primarily related to licences received free of charge and grants from the Eco Fund for the use of waste gas from an offshore oil extraction facility for heating purposes.

26. Financial instruments

26.1 Carrying amount

		IFRS 9											
		Measurement at amortised cost		Measurement at fair value through:				Total		outside IFRS 9		Total	
				Profit or loss		Other comprehensive income							
	Note	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Financial assets													
Trade receivables	15	2,609.1	1,880.4	-	-	-	-	2,609.1	1,880.4	-	-	2,609.1	1,880.4
Derivative financial instruments	23	-	-	25.2	24.4	-	-	25.2	24.4	-	-	25.2	24.4
Lease receivables	15.2	-	-	-	-	-	-	-	-	13.1	15.7	13.1	15.7
Equity investments	15	-	-	-	-	9.8	9.8	9.8	9.8	-	-	9.8	9.8
Other financial assets	15	154.4	685.2	-	-	-	-	154.4	685.2	-	-	154.4	685.2
Cash and cash equivalents	17	1,516.6	1,941.3	-	-	-	-	1,516.6	1,941.3	-	-	1,516.6	1,941.3
Total		**4,280.1**	**4,506.9**	**25.2**	**24.4**	**9.8**	**9.8**	**4,315.1**	**4,541.1**	**13.1**	**15.7**	**4,328.2**	**4,556.8**
Financial liabilities													
Bank borrowings, non-bank borrowings and notes	22	3,140.4	3,704.0	-	-	-	-	3,140.4	3,704.0	-	-	3,140.4	3,704.0
Lease liabilities	22.4	-	-	-	-	-	-	-	-	1,276.0	180.0	1,276.0	180.0
Derivative financial instruments	23	-	-	21.9	54.3	-	-	21.9	54.3	-	-	21.9	54.3
Trade payables	25	1,940.8	1,913.7	-	-	-	-	1,940.8	1,913.7	-	-	1,940.8	1,913.7
Other financial liabilities	25	365.5	279.5	-	-	-	-	365.5	279.5	-	-	365.5	279.5
Total		**5,446.7**	**5,897.2**	**21.9**	**54.3**	**-**	**-**	**5,468.6**	**5,951.5**	**1,276.0**	**180.0**	**6,744.6**	**6,131.5**

26.2 Material items of income, expenses, gains and losses disclosed in the statement of comprehensive income by category of financial instrument

		IFRS 9								outside IFRS 9		Total	
		Measurement at amortised cost		Measurement at fair value through: Profit or loss		Measurement at fair value through: Other comprehensive income		Total					
	Note	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Trade receivables:													
Interest income	9.5	2.8	2.7	-	-	-	-	2.8	2.7	-	-	2.8	2.7
Foreign exchange gains/(losses) recognised in cost of sales	9.1	8.4	23.1	-	-	-	-	8.4	23.1	-	-	8.4	23.1
Impairment gains/(losses)	9,4	(5.0)	(6.4)					(5.0)	(6.4)			(5.0)	(6.4)
Equity investments:													
Dividend income	9.5	-	-	-	-	2.6	2.1	2.6	2.1	-	-	2.6	2.1
Other financial assets:													
Income from interest on deposits	9.5	32.3	27.0	-	-	-	-	32.3	27.0	-	-	32.3	27.0
Foreign exchange gains/(losses) on non-bank borrowings recognised in finance costs	9.6	(1.2)	46.0	-	-	-	-	(1.2)	46.0	-	-	(1.2)	46.0
Impairment losses	9,4	(31.3)						(31.3)				(31.3)	
Cash and cash equivalents													
Interest income	9.5	6.4	4.5	-	-	-	-	6.4	4.5	-	-	6.4	4.5
Foreign exchange gains/(losses) recognised in finance costs	9.6	(1.1)	12.8	-	-	-	-	(1.1)	12.8	-	-	(1.1)	12.8
Derivative financial instruments (financial assets/liabilities):													
Gains/(losses) on fair value measurement of derivative financial instruments	9.5; 9.6	-	-	34.8	(116.7)	-	-	34.8	(116.7)	-	-	34.8	(116.7)
Gains/(losses) on realisation of derivative financial instruments	9.5; 9.6	-	-	(19.0)	109.5	-	-	(19.0)	109.5	-	-	(19.0)	109.5
Bank borrowings, non-bank borrowings and notes:													
Interest expense	9.6	(97.7)	(114.4)	-	-	-	-	(97.7)	(114.4)	-	-	(97.7)	(114.4)
Gains/(losses) on cash flow hedge accounting charged against revenue	8	(131.2)	(91.6)	-	-	-	-	(131.2)	(91.6)	-	-	(131.2)	(91.6)
Foreign exchange gains/(losses) on bank borrowings, non-bank borrowings, notes, and realised foreign-currency transactions in bank accounts recognised in finance costs.	9.6	(44.0)	(132.0)	-	-	-	-	(44.0)	(132.0)	-	-	(44.0)	(132.0)
Gains/(losses) on measurement of cash flow hedges recognised in other comprehensive income	20	104.5	(77.8)	-	-	-	-	104.5	(77.8)	-	-	104.5	(77.8)
Lease liabilities:													
Interest expense	9.6	-	-	-	-	-	-	-	-	(79.7)	(19.9)	(79.7)	(19.9)
Trade and other payables:													
Foreign exchange (gains)/losses recognised in cost of sales	9.1	57.6	(89.3)	-	-	-	-	57.6	(89.3)	-	-	57.6	(89.3)
Total		**(99.5)**	**(395.4)**	**15.8**	**(7.2)**	**2.6**	**2.1**	**(81.1)**	**(400.5)**	**(79.7)**	**(19.9)**	**(160.8)**	**(420.4)**

27. Objectives and policies of financial risk management

The Group is exposed to financial risks, including:

- market risk (risk related to raw material and petroleum product prices, risk related to prices of CO_2 allowances, currency risk, interest rate risk),
- liquidity risk,
- credit risk related to financial and trade transactions.

The Parent has appropriate units (Finance Management Office, Financial Risk Analysis and Control Office together with the Credit Risk and Transaction Documentation Team) reporting to the Chief Financial Officer, who coordinates and exercises ongoing supervision of the LOTOS Group's financial risk management processes.

Furthermore, the Price Risk and Trading Committee, appointed by the Management Board, supervises the work on development of policies and procedures, and monitors the implementation of the Group's strategy in the area of its responsibilities. Specifically, the Committee provides opinions on or initiates key price and trading risk management initiatives, issues recommendations, and submits proposals for actions that require the Management Board's approval.

In addition, to ensure effective management of liquidity, debt structure and external finance raising by companies of the LOTOS Group, the Management Board has appointed the Liquidity Optimisation and Financing Coordination Team.

Financial risk management seeks to achieve the following key objectives:

- increase the probability of budget and strategic objectives being met,
- limit cash flow volatility,
- ensure short-term financial liquidity,
- optimise the expected level of cash flows and risk,
- support operating, investment and financial processes, and create value in the long term.

With a view to implementing the above objectives, the Group has put in place appropriate tools and developed a number of documents, approved at the relevant decision-making levels, defining the framework for ensuring effectiveness and safety of the Group's financial activities, including:

- the methodology for quantifying exposures to particular risks,
- the time horizon for hedging a given risk,
- acceptable financial instruments,
- the method of assessing financial risk management,
- limits within risk management,
- the reporting method,
- credit limits,
- documentation and operating standards,
- separation of responsibilities for execution of transactions, risk analysis and control, documentation of and accounting for transactions, and their allocation to different corporate units.

The Parent monitors and reports all managed market risks on an ongoing basis. The Parent uses liquid derivatives which can be measured by applying commonly used valuation models. The valuation of derivative financial instruments is performed based on market inputs provided by reliable sources. Opening positions with respect to risks which do not arise as part of the Group's core business is prohibited.

In July 2019, as part of the refinancing of foreign-currency loans used to finance the 10+ Programme, the existing hedging relationships were terminated and new financing agreements were created to maintain the type of hedge accounting applied (cash flow hedge) and designated as the hedged item for future sales of oil products denominated in USD.

27.1 Risk related to commodity and petroleum product prices

The Group considers risk related to prices of commodities and petroleum products to be particularly important.

The following risk factors are identified in this area:

- 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),
- 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.

The Parent has in place "Grupa LOTOS S.A.'s commodity and petroleum products price risk management policy", which defines the classification system for transaction portfolios and their business functions, describes how risk is understood and how portfolio exposures are measured, specifies permitted financial instruments and limitations on their use, and transaction execution standards, and also provides guidelines on how to evaluate risk management performance and set relevant limits. Transaction limits falling within the scope of that policy are delegated by the Management Board to lower-level decision-makers.

To support the achievement of the policy objectives, the Company uses a leading Energy Trading and Risk Management system (Allegro).

Under the approved policy, the Company may continue to offer petroleum products at fixed prices. To preserve the original price risk profile, the Group has entered into commodity swaps.

In 2018, the Management Board of Grupa LOTOS S.A. approved the „Market Risk Management Policy for the exploration and production segment of the LOTOS Group".

Open commodity swaps as at December 31st 2019:

Type of contract	Underlying index	Valuation period	Amount in tonnes in the valuation period	Fair value measurement	
				Financial assets	Financial liabilities
Commodity swap	FuelOil 3.5 pct Brg FOB Rrdam	MAR 2020 - SEP 2021	171,422	1.1	(14.3)
Commodity swap	Gasoil 0.1 pct Crg CIF NWE_ARA	MAR 2020 – SEP 2021	(15,839)	0.5	(1.0)
			Total	**1.6**	**(15.3)**

These swap transactions for a total of 171,422 tonnes based on the 3.5 PCT Barges FOB Rotterdam liquid index in the period from March 2020 to September 2021 and (15,839) tonnes based on the Gasoil 0.1 pct Crg CIF NWE ARA liquid index in the same period were entered into to reverse the risk profile relating to the prices of raw materials and petroleum products and arising in connection with the sale of bitumen components at fixed prices.

Open commodity swaps as at December 31st 2018:

Type of contract	Underlying index	Valuation period	Amount in tonnes in the valuation period	Fair value measurement	
				Financial assets	Financial liabilities
Commodity swap	FuelOil 3.5 pct Brg FOB Rrdam	MAR 2019 – JUN 2021	183,433	0.5	(21.5)
Commodity swap	Gasoil 0.1 pct Crg CIF NWE_ARA	MAR 2019 – JUN 2021	(17,010)	3.3	(0.1)
			Total	**3.8**	**(21.6)**

The above swap transactions for a total of 183,433 tonnes based on the FuelOil 3.5 pct Brg FOB Rrdam liquid index in the period from March 2019 to June 2021 and (17,010) tonnes based on the Gasoil 0.1 pct Crg CIF NWE ARA liquid index in the same period were entered into to reverse the risk profile relating to the prices of raw materials and petroleum products and arising in connection with the sale of bitumen components at fixed prices.

Type of contract	Underlying index	Valuation period	Amount in cubic metres in the valuation period	Fair value measurement	
				Financial assets	Financial liabilities
Commodity swap	Ethanol T2 FOB Rdam Barge Eur/cm	JAN 2019 – DEC 2019	24,300	10.0	-
			Total	**10.0**	**-**

Furthermore, in connection with the execution of an annual contract for the purchase of ethanol, in 2018 the Parent entered into commodity swaps to hedge the price risk.

27.1.1 Sensitivity analysis: market risk related to commodity and petroleum product price movements

Below is presented an analysis of the sensitivity of the Group's financial transactions to the risk of fluctuations in prices of commodities and petroleum products as at December 31st 2019 and 2018, assuming price increase/decrease corresponding to the implied annual volatility of the underlying index:

	Dec 31 2019			Dec 31 2018		
	Carrying amount	Change*		Carrying amount	Change**	
		+ implied volatility	- implied volatility		+ implied volatility	- implied volatility
Financial assets	1.6	9.0	(9.0)	13.8	1.5	(1.5)
Financial liabilities	15.3	(54.9)	54.9	21.6	(62.1)	62.1
Effect on profit/loss		**63.9**	**(63.9)**		**63.6**	**(63.6)**

* With respect to instruments held as at December 31st 2019, the above deviations of underlying index prices were calculated based on the implied annual volatility of the underlying index for December 31st 2019, as published by SuperDerivatives. The volatility was +/- 45.12% for the 3.5 PCT Barges FOB Rotterdam index and +/- 22.98% for the Gasoil 0.1 pct Crg CIF NWE_ARA index.
** With respect to instruments held as at December 31st 2018, the above deviations of underlying index prices were calculated based on the implied annual volatility of the underlying index for December 31st 2018, as published on the SuperDerivatives website. The volatility was +/- 37.28% for the FuelOil 3.5 pct Brg FOB Rrdam index, +/- 38.11% for Gasoil 0.1 pct Crg CIF NWE_ARA, and +/- 16.42% for Ethanol T2 FOB Rdam Barge Eur/cm.

The effect of the underlying index price changes on the fair value was examined assuming that the currency exchange rates remain unchanged.

27.2 Risk related to prices of carbon dioxide (CO_2) emission allowances

The risk related to prices of carbon dioxide emission allowances is managed within the Parent on an ongoing basis in line with the assumptions set forth in the strategy for managing the risk approved by the Grupa LOTOS Management Board. The Group balances its future CO_2 emission allowance deficits and surpluses depending on the market situation and within defined limits. In line with the approved strategy and limits, the Parent executes the following transactions for emission units:

- EUA (Emission Unit Allowance) – represents an allowance to emit one tonne of CO_2,
- CER (Certified Emission Reduction unit) – represents one tonne of CO_2 equivalent (tCO_2e) effectively reduced. CERs are obtained in connection with investment projects implemented in developing countries where no CO_2 emission limits have been defined.
- ERU (Emission Reduction Unit) – represents one tonne of CO_2 equivalent (tCO_2e) effectively reduced. ERUs are certified emission units, obtained through investment projects implemented in countries where CO_2 reduction costs are lower.

As at December 31st 2019, the Parent's deficit of allowances in the 2013–2020 trading period (Phase III) was 1,033,226 tonnes. However, taking into account derivative transactions for a total of 1,595,000 tonnes, the Parent had surplus emission allowances for 561,774 tonnes, which were purchased in view of the market situation and the strategic nature of the emission allowances deficit expected after 2020.

As at December 31st 2018, the Parent's deficit of allowances in the 2013–2020 trading period (Phase III) was 1,142,876 tonnes. However, taking into account derivative transactions for a total of 1,159,000 tonnes, the Parent had surplus emission allowances for 16,124 tonnes, which were purchased in view of the market situation and the strategic nature of the emission allowances deficit expected after 2020.

To manage risk related to carbon dioxide emission allowances, the Group evaluates the risk of deficit of free emission allowances allocated under the National Allocation Plan on a case-by-case basis.

The CO_2 emission allowances for 2013–2020 presented below include allowances granted pursuant to the Regulations of the Council of Ministers, as well as other free allowances allocated by the European Commission.

Number of free CO_2 emission allowances for 2013–2020 and actual CO_2 emissions:

in million tonnes	2013	2014	2015	2016	2017	2018	2019	2020	Total
Allowances allocated under the National Allocation Plan(1)	1.8	1.7	1.6	1.6	1.6	1.5	1.5	1.5	12.8
Actual CO_2 emissions (2)	1.7	1.9	1.9	2.0	1.8	2.0	2.0	-	13.3

(1) Number of free CO_2 allowances in 2013–2020 as per the National Allocation Plan (NAP), based on the Regulation of the Polish Council of Ministers of March 31st 2014 (Dz.U. of 2014, item 439) and the Regulation of the Polish Council of Ministers of April 8th 2014 (Dz.U. of 2014, item 472), containing a list of installations covered by the greenhouse gas emission allowance trading scheme along with the number of allowances allocated to them. The figures also account for additional free emission allowances from the European Commission reserve, allocated in connection with the expansion of the refinery's production capacities following from the use of natural gas in hydrogen production.

(2) CO_2 emissions, calculated based on the production data for the installations covered by the emissions trading scheme. The data is verified in accordance with Art. 59 of the Act on Trading in Greenhouse Gas Emission Allowances of April 28th 2011.

As at December 31st 2019, considering the proposed amount of allowances to be allocated under the European Union Emissions Trading Scheme for 2019 and the actual volume of emissions, the Group reported a deficit of allocated CO_2 emission allowances, and therefore recognised a liability PLN 71.8m as at December 31st 2019 (December 31st 2018: PLN 40.7m). The PLN 30.5m effect of the provision on EBIT is presented under cost of sales (2018: PLN 26.3m).

If required, futures contracts to purchase carbon dioxide (CO_2) allowances open as at the last day of the reporting period are settled by the Group through physical delivery, with the intention to potentially use the allowances to offset actual CO_2 emissions. The valuation of contracts settled through physical delivery is not disclosed under financial assets/liabilities in the financial statements. However, the Group internally monitors and performs the valuation of such contracts as part of an overall assessment of the effectiveness of its CO_2 risk management (off balance sheet).

EUA futures contracts open as at December 31st 2019 which the Group considered likely to be settled through physical delivery and used for the Group's own purposes were not disclosed in the financial statements as at the last day of the reporting period, and their fair value was recorded only as an off-balance sheet item.

Contract position as at December 31st 2019 and 2018:

Open CO_2 allowances contracts as at December 31st 2019:

Type of contract	Contract settlement period	Contract volume (in tonnes)	Phase	Fair value measurement*	
				Financial assets	Financial liabilities
EUA Futures	DEC 2020	1.595.000	Phase III	3.3	(1.1)

*Off-balance-sheet value, used exclusively for statistical purposes and as part of monitoring in risk management.

Open CO_2 allowances contracts as at December 31st 2018:

Type of contract	Contract settlement period	Contract volume (in tonnes)	Phase	Fair value measurement*	
				Financial assets	Financial liabilities
EUA Futures	DEC 2019 – DEC 2020	1,159,000	Phase III	50.1	(0.8)

*Off-balance-sheet value, used exclusively for statistical purposes and as part of monitoring in risk management.

27.2.1 Sensitivity analysis: market risk related to movements in prices of carbon dioxide (CO_2) emission allowances

As at December 31st 2019 and 2018, the Group held futures for the purchase of carbon dioxide (CO_2) emission allowances.

The Group does not perform a sensitivity analysis for the fair value of futures contracts to purchase CO_2 emission allowances held by it as at the end of the reporting period if it intends to settle the contracts through physical delivery and use them to cover its allowance deficits under the carbon emission reduction system. Therefore, no sensitivity analysis was performed with reference to the EUA futures held as at December 31st 2019 and 2018.

27.3 Currency risk

In its operations the Group is exposed to currency risks related to:
- trading in raw materials, petroleum products and other commodities,
- investment cash flows,
- cash flows from financing activities, including deposits and borrowings,
- valuation of derivative instruments,

indexed to or denominated in a currency other than the functional currency.

Currency risk is managed by the Parent in line with the assumptions of the Grupa LOTOS S.A. Currency Risk Management Policy. Under the policy, exposure is understood as material positions exposed to currency risk, affecting liquidity within the management horizon when the risk arises. The central risk metric is Cash-Flow-at-Risk (CFaR), computed based on the CorporateMetrics™ methodology, with the CFaR value limit and the maximum hedge ratio being the key limits.
The exposure management horizon is linked with the budget forecast horizon, which varies from three to six consecutive quarters depending on the time of the year.

The Group actively manages its currency exposure by optimising the expected values of cash flows and risk within applicable limits, taking into account expected market developments.

As USD is used in market price quotations for crude oil and petroleum products, It was decided that USD is the most appropriate currency for contracting and repaying long-term credit facilities as this would reduce the structural long position and, consequently, also the strategic currency risk.

The Group has a structural long position in USD (it benefits from a rise in the USD/PLN exchange rate) 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. on purchase of crude oil, credit facility repayments).

Under the EFRA Project, the Group concluded EUR/USD currency contracts designed to hedge EUR-denominated capital expenditure against USD as the main financing currency.

Open currency contracts as at December 31st 2019:

Type of contract	Purchase/sale	Contract settlement period	Currency pair (base/quote)	Amount in base currency (million)	Fair value measurement	
					Financial assets	Financial liabilities
Currency spot	Purchase	JAN 2020	USD/PLN	20.8	-	-
Currency spot	Sales	JAN 2020	EUR/PLN	(0.1)	-	-
Currency forward	Purchase	JUN 2020	EUR/USD	17.0	0.3	-
Currency forward	Sales	JAN − APR 2020	USD/PLN	(130.0)	12.9	-
Currency swap	Purchase	JAN − MAR 2020	EUR/USD	87.5	1.3	-
Currency swap	Sales	JAN − APR 2020	USD/PLN	(226.3)	8.6	-
Currency swap	Sales	JAN − MAR 2020	EUR/PLN	(19.5)	0.5	-
				Total	**23.6**	**-**

Open currency contracts as at December 31st 2018:

Type of contract	Purchase/sale	Contract settlement period	Currency pair (base/quote)	Amount in base currency (million)	Fair value measurement	
					Financial assets	Financial liabilities
Currency spot	Sales	JAN 2019	EUR/PLN	(1.6)	-	-
Currency forward	Purchase	JAN 2019	USD/PLN	11.5	-	(0.4)
Currency forward	Purchase	JAN – DEC 2019	EUR/USD	125.0	-	(14.1)
Currency forward	Sales	JAN – JUN 2019	USD/PLN	(110.0)	-	(7.3)
Currency swap	Purchase	MAY 2019	EUR/USD	19.0	-	(0.6)
Currency swap	Purchase	JAN 2019	EUR/PLN	60.0	0.1	-
Currency swap	Sales	JAN − JUL 2019	USD/PLN	(261.6)	2.7	(3.2)
				Total	**2.8**	**(25.6)**

27.3.1 Sensitivity analysis: market risk related to currency exchange movements

Currency structure of selected financial instruments as at December 31st 2019

Dec 31 2019	Note	(million) USD	USD translated into PLN	(million) EUR	EUR translated into PLN	Carrying amount in foreign currency translated into PLN
Financial assets						
Trade receivables		64.3	244.2	5.9	25.1	269.3
Cash and cash equivalents		79.1	300.6	29.2	125.0	425.6
Other financial assets:		21.1	80.1	4.1	17.3	97.4
Loans advanced to related entities		18.9	71.8	-	-	71.8
Security deposit (margin)		-	-	4.1	17.3	17.3
Other		2.2	8.3	-	-	8.3
Total		**164.5**	**624.9**	**39.2**	**167.4**	**792.3**
Financial liabilities						
Borrowings		722.1	2,689.8	-	-	2,689.8
Notes		61.0	231.8	-	-	231.8
Lease liabilities		-	-	9.7	41.4	41.4
Trade payables		382.9	1,454.1	15.8	67.2	1,521.3
Other financial liabilities		8.4	31.9	40.8	173.7	205.6
Total		**1,174.4**	**4,407.6**	**66.3**	**282.3**	**4,689.9**

Currency structure of selected financial instruments as at December 31st 2018

Dec 31 2018	Note	(million) USD	USD translated into PLN	(million) EUR	EUR translated into PLN	Carrying amount in foreign currency translated into PLN
Financial assets						
Trade receivables		78.0	293.2	6.5	28.4	321.6
Cash and cash equivalents		75.7	284.7	26.7	115.4	400.1
Other financial assets:		75.7	284.5	-	-	284.5
Loans advanced to related entities		64.3	241.4	-	-	241.4
Deposits		9.0	33.9	-	-	33.9
Cash for removal of the MOPU from the YME field	15	0.7	2.8	-	-	2.8
Other		1.7	6.4	-	-	6.4
Total		**229.4**	**862.4**	**33.2**	**143.8**	**1,006.2**
Financial liabilities						
Borrowings		913.4	3,376.6	-	-	3,376.6
Notes		60.4	227.0	-	-	227.0
Lease liabilities		-	-	7.8	33.3	33.3
Trade payables		388.8	1,461.9	5.8	25.0	1,486.9
Other financial liabilities		3.2	12.0	11.6	49.9	61.9
Total		**1,365.8**	**5,077.5**	**25.2**	**108.2**	**5,185.7**

For the purposes of sensitivity analysis, the currency structure presented above also accounts for intercompany foreign currency transactions sensitive to changes in foreign exchange rates, which affect the Group's currency risk in accordance with IAS 21 The Effects of Changes in Foreign Exchange Rates with respect to recognition of relevant foreign exchange gains or losses in the Group's net profit or loss.

Apart from currency spots, forwards and swaps, the Group held foreign-currency derivatives, including commodity swaps, commodity options, interest-rate swaps and futures. Depending on the type of derivative, the Group applies appropriate methods of fair value measurement, which also determine the method of calculating the effect of changes of foreign exchange rates on the value of individual derivatives (for more detailed information on the derivative measurement methods, see Note 7.22). The tables below, presenting sensitivity of financial instruments to currency risk as at December 31st 2019 and December 31st 2018, also present the effect of currency exchange rate movements on the carrying amounts of the derivative financial instruments.

Analysis of the sensitivity to currency risk as at December 31st 2019, showing the effect of a +/- 7.088% change in the USD/PLN exchange rate and a +/- 3.975% change in the EUR/PLN exchange rate on net profit or loss

Dec 31 2019	Effect of exchange rate increase/decrease on net profit/loss for the year in 2019			
	+7.088%	+3.975%	-7.088%	-3.975%
	USD	EUR	USD	EUR
Financial assets				
Derivative financial instruments	(121.4)	16.2	121.4	(16.2)
Trade receivables	17.3	1.0	(17.3)	(1.0)
Cash and cash equivalents	21.3	5.0	(21.3)	(5.0)
Other financial assets:	5.7	0.7	(5.7)	(0.7)
Loans advanced to related entities	5.1	-	(5.1)	-
Security deposits (margins)	-	0.7	-	(0.7)
Other	0.6	-	(0.6)	-
Total financial assets	**(77.1)**	**22.9**	**77.1**	**(22.9)**
Financial liabilities				
Borrowings	83.0 (1)	-	(83.0) (1)	-
Notes	16.4	-	(16.4)	-
Lease liabilities	-	1.6	-	(1.6)
Derivative financial instruments	1.5	1.8	(1.5)	(1.8)
Trade payables	103.1	2.7	(103.1)	(2.7)
Other financial liabilities	2.3	6.9	(2.3)	(6.9)
Total financial liabilities	**206.3**	**13.0**	**(206.3)**	**(13.0)**
Total	**(283.4)**	**9.9**	**283.4**	**(9.9)**

(1) The calculation of the effect of an exchange rate movement on the balance-sheet item takes into account the effect of cash flow hedge accounting. Assuming a 7.088% change of the USD/PLN exchange rate, the effect of cash flow hedge accounting would potentially lead to a change of PLN (107.7)m/PLN 107.7m in the fair value of borrowings.

The above deviations of carrying amounts in the złoty that are dependent on currency exchange rates were calculated on the basis of the implied annual exchange rate volatility for December 31st 2019, which was 7.088% for USD/PLN and 3.975% for EUR/PLN, as published by Reuters. The sensitivity analysis was performed with reference to the balance of instruments held as at December 31st 2019.

Analysis of the sensitivity to currency risk as at December 31st 2018, showing the effect of a +/- 9.950% change in the USD/PLN exchange rate and a +/- 5.512% change in the EUR/PLN exchange rate on net profit or loss

Dec 31 2018	Effect of exchange rate increase/decrease on net profit/loss for the year in 2018			
	+9.950%	+5.512%	-9.950%	-5.512%
	USD	EUR	USD	EUR
Financial assets				
Derivative financial instruments	(46.7)	14.4	46.7	(14.4)
Trade receivables	29.2	1.6	(29.2)	(1.6)
Cash and cash equivalents	28.3	6.4	(28.3)	(6.4)
Other financial assets:	28.3	-	(28.3)	-
Loans advanced to related entities	24.0	-	(24.0)	-
Deposits	3.4	-	(3.4)	-
Cash earmarked for work on removal of the MOPU from the YME field	0.3	-	(0.3)	-
Other	0.6	-	(0.6)	-
Total financial assets	**39.1**	**22.4**	**(39.1)**	**(22.4)**
Financial liabilities				
Borrowings	143.7 (1)	-	(143.7) (1)	-
Notes	22.6	-	(22.6)	-
Lease liabilities	-	1.8	-	(1.8)
Derivative financial instruments	151.4	(34.0)	(151.4)	34.0
Trade payables	145.5	1.4	(145.5)	(1.4)
Other financial liabilities	0.1	2.8	(0.1)	(2.8)
Total financial liabilities	**463.3**	**(28.0)**	**(463.3)**	**28.0**
Total	**(424.2)**	**50.4**	**424.2**	**(50.4)**

(1) The calculation of the effect of an exchange rate movement on the balance-sheet item takes into account the effect of cash flow hedge accounting. Assuming a +/-9.950% change of the USD/PLN exchange rate, the effect of cash flow hedge accounting would potentially lead to a change of PLN (194.1)m/PLN 194.1m in the fair value of borrowings. Furthermore, the calculation takes into account the effect of paid upfront arrangement fees (measured at the exchange rate effective on the payment date), reducing financial liabilities under borrowings, which would potentially result in a change of PLN 1.9m/PLN (1.9)m in the fair value of borrowings, assuming a +/- 9.950% change of the USD/PLN exchange rate.

The above deviations of carrying amounts in the złoty that are dependent on currency exchange rates were calculated on the basis of the implied annual exchange rate volatility for December 31st 2018, which was 9.950% for USD/PLN and 5.512% for EUR/PLN, as published by Reuters. The sensitivity analysis was performed with reference to the balance of instruments held as at December 31st 2018.

27.4 Interest rate risk

The Parent 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. The Parent manages the interest rate risk within the granted limits using interest rate swaps.

Open interest rate contracts as at December 31st 2019:

Type of contract	Period	Notional amount (USDm)	Company receives	Financial assets	Financial liabilities
Interest rate swap (IRS)	SEP 2016 − DEC 2021	211.0	3M LIBOR	-	(6.6)
			Total	**-**	**(6.6)**

In the table above, IRS contracts are aggregated according to the currency of the notional amount and the reference rate. The 'Period' column shows the earliest start date and the latest end date of the period for contracts classified in a given group.

Open interest rate contracts as at December 31st 2018:

Type of contract	Period	Notional amount (USDm)	Company receives	Financial assets	Financial liabilities
Interest rate swap (IRS)	DEC 2015 − JUN 2019	2.5	6M LIBOR	0.1	-
Interest rate swap (IRS)	JAN 2015 – DEC 2021	522.0	3M LIBOR	7.7	(7.1)
			Total	**7.8**	**(7.1)**

In the table above, IRS contracts are aggregated according to the currency of the notional amount and the reference rate. The 'Period' column shows the earliest start date and the latest end date of the period for contracts classified in a given group.

27.4.1 Sensitivity analysis: market risk related to interest rate movements

Analysis of the Group's sensitivity to interest rate risk as at December 31st 2019, assuming a +/- 0.37% change in interest rates

Dec 31 2019	Note	Carrying amount	Change +0.37%	Change -0.37%
Financial assets				
Cash and cash equivalents	17	1,516.6	5.6	(5.6)
Other financial assets:		97.7	0.4	(0.4)
Oil and Gas Extraction Facility Decommissioning Fund	15	41.1	0.2	(0.2)
Cash pledged as security for contractual obligations related to future asset decommissioning	15	38.9	0.1	(0.1)
Security deposits (margins)	15	17.7	0.1	(0.1)
Total		**1,614.3**	**6.0**	**(6.0)**
Financial liabilities				
Bank borrowings	22.1	2,865.2	10.8 (1)	(10.8) (1)
Non-bank borrowings	22.2	43.4	0.2	(0.2)
Notes	22.3	231.8	0.9	(0.9)
Lease liabilities	22.4	1,276.0	4.7	(4.7)
Derivative financial instruments (2)	23	6.6	(2.8)	2.8
Total		**4,423.0**	**13.8**	**(13.8)**

(1) Net of paid arrangement fees reducing liabilities under borrowings.

(2) Interest rate swap (IRS). The difference between the change in the valuation amount, when the interest rate curve moves up or down 0.37%, arises at the time of calculating and discounting future cash flows (relating to the contract settlement) as at the valuation date. The cash flows are discounted at different interest rates (in the first case the interest rate curve movement increases the interest rate by 0.37%, in the second case it reduces the interest rate by 0.37%).

Analysis of the Group's sensitivity to interest rate risk as at December 31st 2018, assuming a +/- 0.26% change in interest rates

Dec 31 2018	Note	Carrying amount	Change	
			+0.26%	-0.26%
Financial assets				
Derivative financial instruments [2]	23	7.8	3.4	(3.4)
Cash and cash equivalents	17	1,941.3	5.0	(5.0)
Other financial assets:		506.0	1.3	(1.3)
Oil and Gas Extraction Facility Decommissioning Fund	15	38.7	0.1	(0.1)
Deposits	15	33.9	0.1	(0.1)
Cash pledged as security for contractual obligations related to future asset decommissioning	15	430.6	1.1	(1.1)
Cash earmarked for work on removal of the MOPU from the YME field	15	2.8	-	-
Total		**2,455.1**	**9.7**	**(9.7)**
Financial liabilities				
Bank borrowings	22.1	3,421.2	7.7 [1]	(7.7) [1]
Non-bank borrowings	22.2	55.8	0.1	(0.1)
Notes	22.3	227.0	0.6	(0.6)
Lease liabilities	22.4	180.0	0.5	(0.5)
Derivative financial instruments [2]	23	7.1	(0.7)	0.7
Total		**3,891.1**	**8.2**	**(8.2)**

[1] Net of fixed-rate borrowings and paid arrangement fees reducing liabilities under borrowings.
[2] Interest rate swap (IRS). The difference between the change in the valuation amount, when the interest rate curve moves up or down 0.26%, arises at the time of calculating and discounting future cash flows (relating to the contract settlement) as at the valuation date. The cash flows are discounted at different interest rates (in the first case the interest rate curve movement increases the interest rate by 0.26%, in the second case it reduces the interest rate by 0.26%).

The sensitivity analysis was performed for the instruments held as at December 31st 2019 and December 31st 2018. The effect of the interest rate changes on the fair value was examined assuming that the currency exchange rates remain unchanged. In the case of derivative instruments held as at December 31st 2019 and December 31st 2018, for the purpose of interest rate sensitivity analysis the interest rate curve was moved up or down by the historical annual volatility for December 31st 2019 and December 31st 2018, calculated based on historical volatility data for interest rates on interest rate swaps expiring in one year, as published by Reuters.

27.5 Liquidity risk

The liquidity risk management process at the Group consists in monitoring projected cash flows and the portfolio of financial assets and liabilities, matching maturities of the assets and liabilities, analysing working capital, and optimising cash flows within the Group. This process requires that units operating in different business areas closely cooperate in activities undertaken in order to ensure safe and effective allocation of the liquidity.

The majority of the Group's Polish subsidiaries participate in a physical cash pooling arrangement, whereby the Parent manages the structure on an on-going basis to optimise liquidity and interest balances.

In the period covered by the budget, liquidity is monitored on an ongoing basis across the Group as part of financial risk management. In the mid- and long term, it is monitored as part of the planning process, which helps to develop a long-term financial strategy.

In the area of financial risk, in addition to active management of market risk, the Group observes the following liquidity management rules:
- no margins in derivative financial instrument trading on the OTC market,
- limited possibility of early termination of financial transactions,
- limits for low-liquidity spot financial instruments,
- credit risk limits for counterparties in financial and trade transactions,
- ensuring adequate availability of diversified sources of funding of appropriate structure and quality,
- internal control processes and organisational efficiency facilitating prompt contingency response.

Below are presented contractual maturities of financial liabilities as at December 31st 2019 and December 31st 2018:

Contractual maturities of financial liabilities:

Dec 31 2019	Note	Carrying amount	Contractual cash flows	Up to 6 months	6 - months 12th	1–2 years	2–5 years	Over 5 years
Bank borrowings (other than overdraft facilities)	22.1	2,865.2	3,231.7	447.4	337.3	922.1	1,519.6	5.3
Non-bank borrowings	22.2	43.4	48.7	4.8	4.8	9.7	29.4	-
Notes	22.3	231.8	244.9	244.9	-	-	-	-
Lease liabilities	22.4	1,276.0	2,295.0	171.3	164.4	272.1	442.3	1,244.9
Trade payables	25	1,940.8	1,940.8	1,940.6	-	0.2	-	-
Other financial liabilities	25	365.5	365.5	253.5	89.1	3.3	10.1	9.5
Total		**6,722.7**	**8,126.6**	**3,062.5**	**595.6**	**1,207.4**	**2,001.4**	**1,259.7**
Dec 31 2018								
Bank borrowings (other than overdraft facilities)	22.1	3,418.2	4,340.4	162.4	1,375.7	929.5	1,853.0	19.8
Overdraft facilities	22.1	3.0	3.0	3.0	-	-	-	-
Non-bank borrowings	22.2	55.8	60.2	8.1	7.9	15.7	27.5	1.0
Notes	22.3	227.0	238.0	238.0	-	-	-	-
Lease liabilities	22.4	180.0	261.0	26.7	29.9	50.8	110.5	43.1
Trade payables	25	1,913.7	1,913.7	1,913.7	-	-	-	-
Other financial liabilities	25	279.5	279.5	244.5	8.9	7.4	7.0	11.7
Total		**6,077.2**	**7,095.8**	**2,596.4**	**1,422.4**	**1,003.4**	**1,998.0**	**75.6**

Contractual maturities of derivative financial instruments:

Dec 31 2019	Note	Carrying amount*	Contractual cash flows	Up to 6 months	6 - months 12th	1–2 years	2–5 years	Over 5 years
Commodity swap	23	(13.7)	(13.9)	(2.8)	(8.1)	(3.0)	-	-
Currency forward and spot contracts		13.2	13.2	13.2	-	-	-	-
Interest rate swap (IRS)		(6.6)	(6.7)	(3.6)	(0.9)	(2.2)	-	-
Currency swap		10.4	10.4	10.4	-	-	-	-
Total		**3.3**	**3.0**	**17.2**	**(9.0)**	**(5.2)**	**-**	**-**
Dec 31 2018	**Note**							
Commodity swap	23	(7.8)	(8.4)	3.3	(6.9)	(4.7)	(0.1)	-
Currency forward and spot contracts		(21.8)	(22.0)	(16.1)	(5.9)	-	-	-
Interest rate swap (IRS)		0.7	0.8	(3.6)	3.0	(0.2)	1.6	-
Currency swap		(1.0)	(0.9)	(0.9)	-	-	-	-
Total		**(29.9)**	**(30.5)**	**(17.3)**	**(9.8)**	**(4.9)**	**1.5**	**-**

* Carrying amount (fair value gains on derivative financial instruments plus fair value losses on derivative financial instruments) represents the fair value of derivative financial instruments disclosed in the statement of financial position (excluding CO_2 emission allowance futures purchased with the intention of settlement through physical delivery).

27.6 Credit risk

Management of credit risk related to counterparties in financial transactions consists in the verification of creditworthiness of the current and potential counterparties and monitoring of credit exposures against the granted limits.
Credit exposure includes bank deposits, cash balances in bank accounts, measurement of derivative financial instruments, and granted security.

The counterparties must have an appropriate credit rating assigned by leading rating agencies or hold guarantees from institutions meeting the minimum acceptable rating requirement. The Group enters into financial transactions with reputable firms with sound credit standing, and diversifies the group of institutions with which it maintains relationships.

As at December 31st 2019 and December 31st 2018, the concentration of credit risk exposure to any single counterparty in the Group's financial transactions did not exceed PLN 399.0m and PLN 542.7m, respectively (3.86% and 5.44% of the Parent's equity, respectively).

As regards management of counterparty risk in non-financial transactions, all customers who request trading on credit terms are subject to credit assessment, whose results determine the level of possible credit limits. In 2017, the Parent completed development of a rating model which supports assigning credit limits to counterparties. The Parent defines guidelines for managing counterparty risk in non-financial transactions to ensure that appropriate standards of credit analysis and operational security are observed across the entire Group.

As at December 31st 2019 and December 31st 2018, the concentration of credit risk exposure to any single counterparty in the Group's trade transactions did not exceed PLN 531.0m and PLN 116.4m, respectively (5.14% and 1.17% of the Parent's equity, respectively).

Credit risk is measured by the maximum exposure to risk of each class of financial assets. Carrying amounts of financial assets represent the maximum credit risk exposure.

Maximum credit risk exposure of financial assets	Note	Dec 31 2019	Dec 31 2018
Derivative financial instruments	23	25.2	24.4
Trade receivables	15	2,609.1	1,880.4
Cash and cash equivalents	17	1,516.6	1,941.3
Other financial assets	15	177.3	710.7
Total		**4,328.2**	**4,556.8**

In the Management Board's opinion, the risk related to non-performing financial assets is reflected in the recognised impairment losses. For information on impairment of financial assets, see Notes 9.3, 9.4 and 15.1.

For discussion of credit risk concentrations for trade receivables, see Note 15.1.
For ageing analysis of receivables past due but not impaired, see Note 15.1.

28. Capital management

The objective of the LOTOS Group financial policy is to maintain long-term liquidity, while using an appropriate level of financial leverage to support the achievement of the principal objective of maximising the return on equity for shareholders.

This is achieved through constant effort to develop the desired capital structure at the Group level.

The LOTOS Group uses the debt to equity ratio, calculated as net debt to equity, to monitor its financing structure.

Net debt comprises bank and non-bank borrowings, notes and liabilities under leases less cash and cash equivalents. Equity includes equity attributable to owners of the Parent plus non-controlling interests.

	Note	Dec 31 2019	Dec 31 2018
Non-current liabilities			
Bank borrowings	22.1	2,100.5	2,158.1
Non-bank borrowings	22.2	35.7	42.2
Notes	22.3	-	-
Leases	22.4	1,006.4	145.0
Total		**3,142.6**	**2,345.3**
Current liabilities			
Bank borrowings	22.1	764.7	1,263.1
Non-bank borrowings	22.2	7.7	13.6
Notes	22.3	231.8	227.0
Leases	22.4	269.6	35.0
Total		**1,273.8**	**1,538.7**
Cash and cash equivalents	17	(1,516.6)	(1,941.3)
Net debt		**2,899.8**	**1,942.7**
Equity attributable to owners of the Parent		12,715.3	12,034.7
Non-controlling interests		0.1	0.1
Total equity		12,715.4	12,034.8
Net debt to equity		**0.23**	**0.16**

29. Contingent liabilities and assets

29.1 Material court, arbitration and administrative proceedings and other risks to the Parent or its subsidiaries

In the period between the end of the previous financial year, i.e. December 31st 2018, and the date of issue of these interim financial statements, there were no significant changes with respect to pending material court, arbitration, and administrative proceedings or with respect to other risks to the Company or its subsidiaries. For information on pending material proceedings, see Note 29.1 to the consolidated financial statements for 2018.

Material court proceedings to which the Parent is a party

Tax settlements

In 2015, the Company's VAT settlements for 2010 were subject to inspection by tax inspection authorities. On June 23rd 2015, the Company received a post-inspection report and challenged some of the findings contained in the report. On September 30th 2015, the Company received a decision issued by the Director of the Tax Audit Office in Bydgoszcz, in which the Tax Audit Office assessed the VAT amount payable by the Company for the period from January to December 2010, identifying VAT arrears of PLN 48.4m. The Company dismissed the allegations of the Director of the Tax Audit Office as entirely groundless and on October 14th 2015 filed an appeal with the Director of the Tax Chamber in Gdańsk. The Director of the Tax Chamber in Gdańsk upheld the decision of the Director of the Tax Audit Office in Bydgoszcz, whereas the complaint lodged by the Company with the Provincial Administrative Court on June 8th 2016 was dismissed. On August 25th 2016, the Company lodged a cassation complaint with the Supreme Administrative Court of Warsaw. On April 17th 2019, the Supreme Administrative Court dismissed the Company's complaint against the ruling of the Provincial Administrative Court of Gdańsk.

Furthermore, as at December 31st 2019, the Company disclosed a provision for tax risk recognised in connection with other tax inspections concerning value added tax (VAT), see Note 25.1.

Court proceedings instigated by or against companies of the LOTOS Group

Agreement to which LOTOS Exploration and Production Norge AS is a party

LOTOS Exploration and Production Norge AS ("LOTOS E&P Norge AS") was a party to proceedings held before an arbitration court in Norway in connection with claims filed by Single Buoy Moorings Inc. ("SBM"), the supplier of the MOPU (Mobile Offshore Production Unit) for operation of the YME field, against Talisman Energy Norge AS, the operator of the YME field ("Talisman", "Operator") and the other YME licence holders. The share of SBM's claims attributable to LOTOS E&P Norge AS was 20%.

In 2013, Talisman Energy Norge AS ("Talisman", the then operator of the YME field) and Single Buoy Moorings Inc. ("SBM", owner of the MOPU) announced that an agreement was reached to terminate all existing contracts and agreements executed by the parties in connection with the YME project and remove the defective MOPU from the YME field.

SBM paid USD 470m to the consortium members, and Talisman Energy, on behalf of the licence holders, agreed to make the necessary preparations and remove the platform from the field. Under the agreement, SBM was responsible for towing the MOPU to the port and its scrapping, whereas following completion of certain works, the ownership of elements of the YME field in situ subsea infrastructure delivered by SBM should be transferred to the consortium members, who would be required to perform site restoration (and disassembly) activities related to the subsea infrastructure. Each of the parties will cover the costs of its scope of decommissioning work as set out in the agreement.

In accordance with the agreement made with SBM, the balance of the Group's share in the amount due to the consortium members under the agreement (USD 81.8m) was transferred to the YME project escrow account, to be gradually released to finance the removal of the MOPU and related infrastructure from the field, in accordance with the agreement.

On August 22nd 2016, the YME project partners completed evacuation of the defective MOPU from the field. In Q1 2017, the caisson (element of the subsea infrastructure) was inspected. As a result of the inspection it was found that the caisson can stand without additional support until 2019 (provided that it is inspected on a semi-annual basis and its condition remains unimpaired).
On August 11th 2017, SBM Offshore confirmed the conclusion of an agreement with a majority of MOPU insurers to settle insurance claims relating to the faulty execution of the MOPU. On September 10th 2018, SBM announced that the insurance claim concerning the YME project was fully and finally settled. The gross amount received by SBM as insurance compensation was USD 390m. The share of LOTOS E&P Norge AS (net of the cost of legal services and other expenses) was expected at USD 30.7m. In 2018, the Group recognised its share in the compensation under Other income, in the amount of PLN 118.3m.

On March 5th 2019, LOTOS E&P Norge AS received cash of USD 31.1m as the final settlement of insurance claims.

In the twelve months ended December 31st 2019, there were no material settlements under court or other proceedings, save for those presented above.

29.2 Other contingent liabilities

In the period between the end of the previous financial year, i.e. December 31st 2018, and the date of issue of these financial statements, there were no changes in the Company's or its subsidiaries' other material contingent liabilities.

30. Related parties

30.1 Transactions with related entities in which the Group holds equity interests

Equity-accounted joint ventures		2019	2018
Sales		488.5	635.5
Purchases		21.9	26.7
	Note	Dec 31 2019	Dec 31 2018
Receivables	15	38.8	23.1
Liabilities	25	2.6	5.2

In 2019 and 2018, material transactions were made by the Group with LOTOS-Air BP Polska Sp. z o.o. and involved mainly sale of aviation fuel. The aggregate value of the transactions made in 2019 was PLN 488.4m (2018 PLN 635.4m). As at December 31st 2019, the balance of outstanding receivables under these transactions was PLN 38.8m (December 31st 2018: PLN 23.1m).

In 2019, the Group also executed transactions with UAB Minijos Nafta, for a total amount of PLN 21.9m (2018: PLN 26.7m). The transactions were crude oil purchases. As at December 31st 2019, the balance of outstanding payables under those transactions was PLN 2.6m (December 31st 2018: PLN 5.2m).

For general information on joint ventures in which the Group holds interests, see Note 14.

30.2 Entity having control of the Group

As at December 31st 2019 and December 31st 2018, the State Treasury held a 53.19% interest in Grupa LOTOS S.A. In 2018 and 2019, no transactions were concluded between Grupa LOTOS S.A. and the State Treasury.

30.2.1 Transactions with related entities of which the State Treasury has control or joint control or on which the State Treasury has significant influence

In 2019 and 2018, the Group executed transactions with parties related to it through the State Treasury, the aggregate value of which was material. They were concluded on an arm's length basis in the course of the Group's day-to-day operations and involved mainly purchase and sale of fuels, purchase of crude oil and natural gas, and transport services.

	2019	2018
Sales	765.8	661.2
Purchases	1,633.7	1,922.7
	Dec 31 2019	**Dec 31 2018**
Receivables	97.9	47.4
Liabilities	294.5	202.8

In addition, the Group had credit facilities, loans, notes and leases towards banks and institutions of which the State Treasury has control or joint control or over which it exercises significant influence. These entities include PKO BP S.A., PEKAO S.A., Bank Gospodarstwa Krajowego, and Agencja Rozwoju Przemysłu S.A.

	Dec 31 2019	Dec 31 2018
Bank borrowings	1,190.4	1,304.7
Non-bank borrowings	43.4	55.8
Notes	231.8	227.0
Leases	11.0	20.3
Total	**1,476.6**	**1,607.8**

30.3 Remuneration of members of the Company's governing bodies and its key management staff

Remuneration paid to members of the Company's Management and Supervisory Boards	2019	2018
Management Board		
Short-term employee benefits (salaries):	**6.42**	**3.08**
Jarosław Wittstock	0.81	0.16
Marian Krzemiński	0.22	-
Jarosław Kawula	1.42	0.69
Zofia Paryła	0.24	-
Mateusz Bonca(1)	1.63	0.71
Patryk Demski(2)	0.97	0.37
Robert Sobków(3)	0.75	0.35
Marcin Jastrzębski(4)	0.38	0.59
Mariusz Machajewski(5)	-	0.09
Piotr Ciach	-	0.12
Supervisory Board		
Short-term employee benefits (salaries):	**0.66**	**0.60**
Piotr Ciach	0.08	0.07
Dariusz Figura	0.08	0.08
Mariusz Golecki	0.07	0.08
Beata Kozłowska-Chyła	0.10	0.10
Katarzyna Lewandowska	0.08	0.08
Adam Lewandowski	0.08	0.08
Grzegorz Rybicki	0.08	0.03
Agnieszka Szklarczyk-Mierzwa	0.09	0.08
Total (6)	**7.08**	**3.68**
including variable remuneration paid:	**2.17**	**-**
Management Board		
Jarosław Wittstock	0.12	-
Jarosław Kawula	0.73	-
Mateusz Bonca	0.70	-
Patryk Demski	0.24	-
Marcin Jastrzębski	0.38	-

Other employee benefits	Dec 31 2019	Dec 31 2018
Management Board		
Current liabilities due to variable remuneration: (7)	**2.87** (8)	**3.26**
Jarosław Wittstock	0.51	0.17
Marian Krzemiński	0.22	-
Jarosław Kawula	0.51	1.01
Zofia Paryła	0.22	-
Mateusz Bonca	0.50	0.90
Patryk Demski	0.27	0.30
Robert Sobków	0.47	0.30
Marcin Jastrzębski	-	0.58
Mariusz Machajewski	0.17	-
Total	**2.87**	**3.26**

(1) Including severance pay for termination of the management service contract paid in 2019.
(2) Including a severance pay for termination of the management service contract and non-compete compensation paid in 2019.
(3) Including a severance pay for termination of the management service contract and non-compete compensation paid in 2019.
(4) Including a severance pay for termination of the management service contract and non-compete compensation paid in 2019.
(5) Non-compete compensation paid in 2018.
(6) The amount reflects changes in the composition of the Company's Management and Supervisory Boards.
(7) Pursuant to the Act on Rules of Remunerating Persons Who Manage Certain Companies. Payment of the variable remuneration is conditional on the achievement of targets set for the Management Board members and consent of the Supervisory Board.
(8) The amount includes outstanding current liabilities due to variable remuneration for 2018.

In 2018 and 2019, the Group did not enter into any material transactions with any Management Board or Supervisory Board members, did not advance any loans, make any advance payments, issue any guarantees to or conclude any other agreements with any Management Board or Supervisory Board member which would be advanced, made, issued or concluded otherwise than on an arm's length basis or which would have material bearing on these financial statements.

Based on representations submitted by members of the Parent's Management and Supervisory Boards, in 2018 and 2019 Grupa LOTOS S.A was not aware of any transactions concluded with the Company or other LOTOS Group companies by the spouses, relatives, or relatives by affinity in the direct line up to the second degree, of members of the Management and Supervisory Boards or persons related to them through guardianship or adoption or other persons with whom they have personal relationships.

30.4 Remuneration paid or payable to other members of key management staff

Remuneration paid to members of key management staff (other than members of the Grupa LOTOS Management Board)	2019	2018
Short-term employee benefits (salaries), including:	44.7	42.8
- annual bonus paid	5.4 [1]	5.0 [2]
- length-of-service award paid	0.5	0.7
Other employee benefits	Dec 31 2019	Dec 31 2018
Post-employment benefits, length-of-service awards and other benefits	8.6	6.4
Current liabilities under annual bonus	17.8	12.9
Total	**26.4**	**19.3**

[1] Remuneration paid in 2019 on account of the annual bonus for 2018.
[2] Remuneration paid in 2018 on account of the annual bonus for 2017.

In 2019 and 2018, the Group did not advance any loans to its key management staff.

30.5 Transactions with related parties of members of the Management Board and the Supervisory Board

In 2019, the Group executed transactions with parties related to it through members of the Parent's Management Board and Supervisory Board. The transactions were connected with the Group's day-to-day operations and mainly involved purchase of civil liability insurance policies and property insurance policies for PLN 3.0m (2018: PLN 29.4m).

All transactions with parties related to the Group through members of the Management Board and the Supervisory Board were executed on an arm's length basis.

AUTHORISATION OF THE CONSOLIDATED FINANCIAL STATEMENTS FOR ISSUE

These consolidated financial statements were authorised for issue by the Management Board on March 9th 2020.

Signatures of the Management Board members and the person responsible for keeping the accounting books of Grupa LOTOS S.A.

President of the Management Board

Paweł Jan Majewski

Vice President of the Management Board,
Chief Investment and Innovation Officer

Marian Krzemiński

Vice President of the Management Board,
Chief Refining and Marketing Officer

Jarosław Kawula

Vice President of the Management Board,
Corporate Affairs

Jarosław Wittstock

Vice President of the Management Board,
Chief Financial Officer

Zofia Paryła

Finance and Accounting Centre Director –
Chief Accountant

Tomasz Południewski