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# **FOREWORD**



### **Dear Investor,**

we present to you the first part of the Grupa LOTOS S.A. Investor's Guide, which is a manual for analysing financial statements of oil & gas companies.

The oil business is affected by a number of external factors that tend to be highly volatile. Major impact factors include: prices of crude oil and petroleum products (e.g. gasoline and diesel oil), and USD/PLN exchange rates. Their fluctuations may cause significant changes in the financial performance of companies from our sector in reporting periods.

The analytical tools provided by oil & gas companies are not always effective in helping investors understand their financial performance. The key measure of a refinery's operating efficiency, i.e. the model refining margin, is not a variable that gives an exact indication of operating results. Exchange rate fluctuations do not always translate on a 1:1 basis into financial performance either.

These, as well as others intricacies of an analytical outlook on the financial performance of oil & gas companies, will be explained in this Guide. We hope that it will assist you in analysing and interpreting our financial performance and help you learn more about the ins and outs of our industry.

The example figures shown here are based mainly on the actual financial figures of the LOTOS Group and are accompanied by references to relevant pages of our Financial Statements for 2015.



# WHAT WILL YOU LEARN IN THE FIRST PART OF THIS GUIDE?

To begin with, we will explain certain FINANCIAL ITEMS IN THE PROFIT AND LOSS STATEMENT, which include:



#### **REVENUE**

What do we sell?
What is the structure of our sales?
What factors affect revenue?
What other elements are analysed in the context of revenue??



#### **EBIT**

What is EBIT?
How is EBIT calculated?
What does consolidated EBIT of?
Which factors may distort EBIT?



#### **AMORTISATION AND DEPRECIATION**

Which categories of non-current assets are subject to depreciation/amortisation?
What is the nature of the property, plant and equipment we depreciate?



#### **EBITDA**

How do we calculate EBITDA in our company?



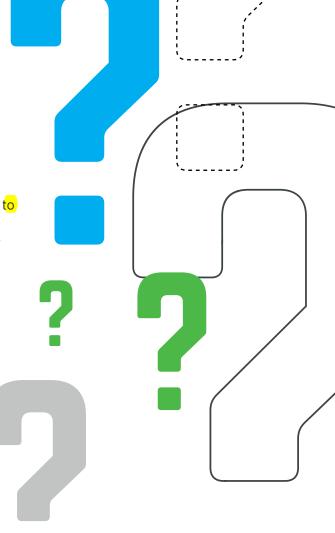
#### **EFEKT LIFO**

What is the LIFO effect?
Why is it so important to analyse
the effectiveness of Grupa LOTOS?
What factors determine the LIFO effect amount?



#### **LIFO-BASED EBITDA**

What is the origin of this item? Why is it so important to stock-market analysts and our fundamental valuation?





# **REVENUE**

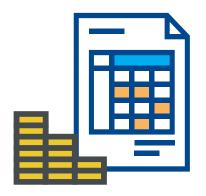


Table 1. Consolidated statement of comprehensive income - Consolidated Financial Statements for 2015, page 4

(PLN '000)	Note	Year ended Dec 31 2015	Year ended Dec 31 2014
Revenue	8	22.709.442	28.501.887
Cost of sales	9.1	(20.249.028)	(27.466.614)
Gross profit		2.460.414	1.035.273
Distribution costs	9.1	(1.284.846)	(1.162.071)
Administrative expenses	9.1	(459.120)	(447.055)
Other income	9.3	48.291	26.707
Other expenses	9.4	(341.341)	(845.862)
Operating profit/(loss)		423.398	(1.393.008)
Finance income	9.5	100.637	21.740
Finance costs	9.6	(688.243)	(727.982)
Share in net profit/(loss) of equity-accounted joint ventures	16	(31.066)	(24.465)
Loss before tax		(195.274)	(2.123.715)
Corporate income tax	10.1	(68.026)	657.343
Net loss		(263.300)	(1.466.372)

The key driver of the LOTOS Group's revenue is crude oil prices. These in turn depend on global demand for and supply of crude oil and petroleum products, the global political and macroeconomic environment, as well as the situation on international commodity and financial markets. The diagram below shows how those factors affect revenue of oil & gas companies



### **REVENUE**



GLOBAL DEMAND FOR AND SUPPLY OF CRUDE OIL AND PETROLEUM PRODUCTS



GEOPOLITICAL AND MACROECONOMIC ENVIRONMENT



SITUATION ON GLOBAL FINANCIAL MARKETS

# GLOBAL CRUDE OIL PRICES

GLOBAL PRICES OF PETROLEUM PRODUCTS

REVENUE OF THE LOTOS GROUP



# SALES OF PETROLEUM PRODUCTS

Diesel oil, gasolines, heavy and light fuel oils, aviation fuel, crude oil and natural gas produced by the LOTOS Group



# SALES OF MATERIALS AND MERCHANDISE

fuels and crude oil purchased from non-LOTOS Group entities for resale

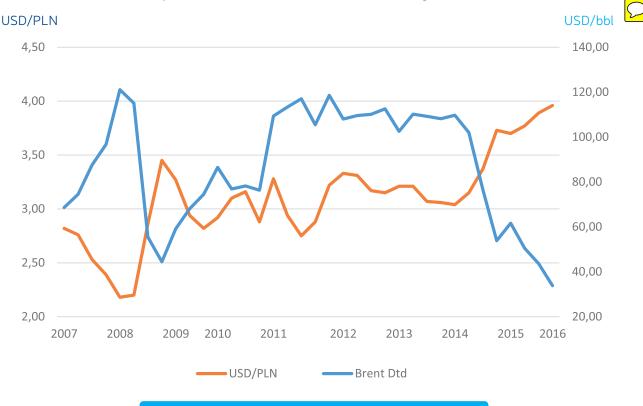


### **REVENUE**

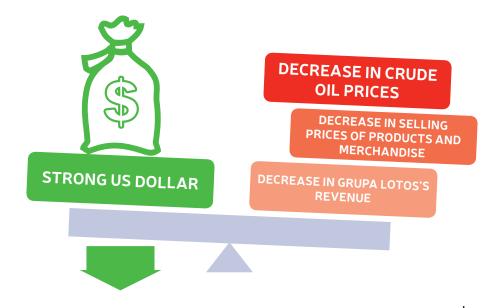
#### PRICES OF CRUDE OIL AND PETROLEUM PRODUCTS ARE QUOTED IN US DOLLARS

Typically, the USD/PLN exchange rate and the price of crude oil (in USD/bbl) are negatively correlated, meaning that when the price of oil goes down, the US dollar exchange rate rises and vice versa. This is illustrated on the graph below.

Figure 1. Brent Dated crude oil price (in USD/bbl) vs. USD/PLN exchange rate



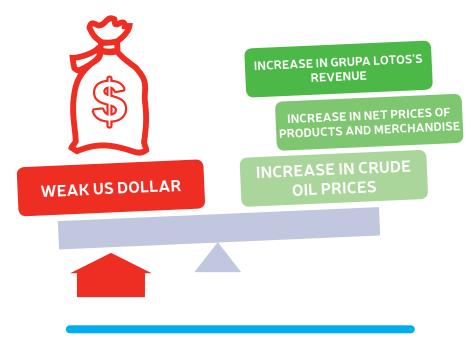
The LOTOS Group's revenue depends on net selling prices of products and merchandise as well as sales volumes. If crude oil prices decrease, driving down the prices of products and merchandise, our revenue falls. **The prices** are quoted in USD. When oil prices go down, the dollar usually appreciates, supporting our revenue.



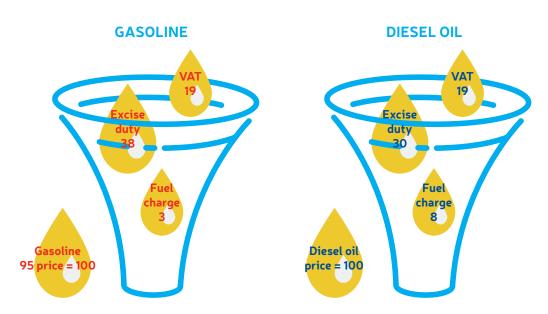


### **REVENUE**

Conversely, when crude oil prices move up, causing an increase in the selling prices of products and merchandise (quoted in USD), a weak US dollar has an adverse effect on our revenue.



In our financial statements, revenue is presented net of VAT and sales taxes, i.e. excise duty and fuel charge.



For the sake of simplicity, the hypothetical price of gasoline is 100 units per litre in this example.

These taxes are included in the retail price of fuels. According to the data of the Polish Organisation of Oil Industry and Trade (POPiHN), in 2015 taxes accounted for 56% and 51% of the retail prices of gasoline and diesel oil, respectively.







In line with the practice commonly applied to analysing the profitability of oil & gas companies, the LOTOS Group employs the concept of EBIT. In the financial statements, it is equivalent to accounting operating profit/loss. EBIT is operating profit/loss before the cost of financing. It is achieved using equity and external capital (loans, bonds), before accounting for finance income/cost and income tax.

In the LOTOS Group, consolidated EBIT is determined by operating profit/loss of the following reporting segments (1):



# EBIT OF THE UPSTREAM SEGMENT

(crude oil and natural gas exploration and production)

### EBIT OF THE DOWNSTREAM SEGMENT

(crude oil processing, petroleum products wholesale and retail sale, ancillary activities)



<sup>(1)</sup> Consolidated EBIT should be increased/decreased by EBIT of the "Other" business segment, covering the operations considered not material (non-core) to the LOTOS Group's financial performance.



### **EBIT**

#### **EXAMPLE 1.** Calculation of consolidated EBIT (for 2015):

EBIT of the upstream segment - PLN 57,278 thousand + EBIT of the downstream segment + EBIT of "Other" segment - PLN 637 thousand - consolidation adjustments PLN 32,343 thousand

= consolidated EBIT = PLN 423,398 thousand

Table 2. Operating profit/loss - Consolidated Financial Statements for 2015, page 30

(PLN '000)	Upstream segment	Downstream segment	Other	Consolidation adjustments	Consolidated
			rear ended Dec 3	1 2015	
Revenue:	698.898	22.369.102	15.712	(374.270)	22.709.442
Intersegment sales	322.632	43.014	8.624	(374.270)	-
External sales	376.266	22.326.088	7.088	_	22.709.442
Operating profit/(loss) (EBIT)	(57.278)	448.970	(637)	32.343	423.398
Depreciation/amortisation	242.944	466.330	6.974	(1.680)	714.568
Operating profit/(loss) before depreciation and amortisation (EBITDA)	185.666	915.300	6.337	30.663	1.137.966

Table 3. Operating profit/loss - Consolidated Financial Statements for 2014, page 30

(PLN '000)	Upstream segment	Downstream segment	Other	Consolidation adjustments	Consolidated
			ear ended Dec 3	1 2014	
Revenue:	906.279	28.157.947	25.535	(587.874)	28.501.887
Intersegment sales	523.278	47.559	17.037	(587.874)	-
External sales	383.001	28.110.388	8.498		28.501.887
Operating profit/(loss) (EBIT)	(624.120)	(774.492)	6.914	(1.310)	(1.393.008)
Depreciation/amortisation	344.141	459.449	7.137	(1.786)	808.941
Operating profit/(loss) before depreciation and amortisation (EBITDA)	(279.979)	(315.043)	14.051	(3.096)	(584.067)



### **EBIT**

The following factors influence (i.e. increase or decrease) the LOTOS Group's consolidated EBIT:

operating FX differences

USD/PLN exchange differences, mainly arising between the date of purchase and date of posting purchased crude oil (recognised in the financial statements under cost of sales)

consolidation adjustments

accounting adjustments that need to be made in the calculation of consolidated financial results as an effect of consolidation of the financial figures of the Group companies (i.e. excluding intragroup transactions)

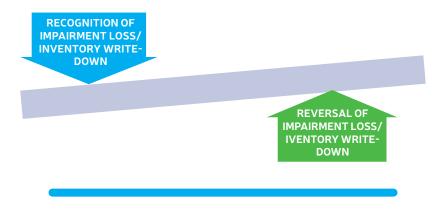
impairment losses/inventory write-downs

- inventory write-downs: made routinely to align the raw material and product inventory valuation to current market values in the given reporting period, recognised under cost of sales
- impairment losses on property, plant and equipment, including impairment losses recognised following impairment tests, shown in the financial statements in the statement of comprehensive income, under other expenses/other income



### **EBIT**

Recognition of impairment losses or inventory write-downs decreases EBIT, and their reversal increases EBIT, as presented in the diagram below.



#### **EXAMPLE 2.** Estimation of inventory write-downs in accordance with IAS 2<sup>(1)</sup>:

Assuming that:	Average price of manufactured fi barrel of oil (US	rom one	Amount of cru	ıde oil	Market value of products from one crude oil barrel (USD)
Opening balance: January 1st	80	X	100	=	8,000
Closing balance: March 31st (end of reporting period, i.e. a quarter)	50	x	100	=	5,000

<sup>(1)</sup> Numbers selected on a random basis, to illustrate underlying mechanisms. Simplified mechanism – in reality, valuation also covers crude oil, intermediate products of crude oil refining, and merchandise (goods purchased for resale).

Recognition of write-downs on products manufactured from crude oil inventories consists in adjusting the inventory value for the mathematical difference between the market values of products at the beginning and end of the reporting period. Accordingly, the write-down amount is as follows:

**USD 8,000 - USD 5,000 = USD 3,000** 

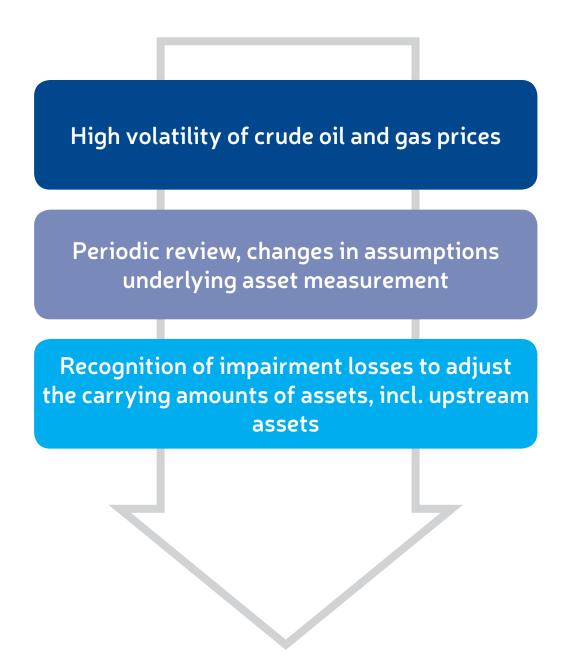
The inventory write-down for 2015 is presented in Note 19 to the Financial Statements of the LOTOS Group for 2015, which reads: "Following a change in prices of crude oil and refining products in 2015, in H1 2015 the LOTOS Group reversed inventory write-downs recognised in Q4 2014, and in Q3 and Q4 2015 the Group recognised write-downs to adjust the carrying amount of inventories to the net realisable value."



### **EBIT**

#### **EXAMPLE 3.** Impairment losses on upstream assets

The diagram below provides a simplified overview of a process leading to the recognition of impairment losses on upstream assets.



The table presented on the next page shows accumulated impairment losses on three classes of the LOTOS Group's upstream assets (i.e. assets related to exploration for, development and production of hydrocarbons) as at the beginning (January 1st 2015) and end (December 31st 2015) of the reporting period. The difference between the values shown is the outcome of impairment testing of those assets as at December 31st 2015.



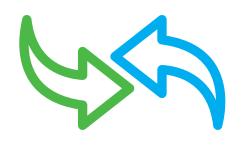
### **EBIT**

Table 4. Property, plant and equipment classified as exploration and evaluation, development, and production assets (Consolidated Financial Statements for 2015, Note 13.1, pages 40–41)

(PLN '000)		classifie	, plant and ed ed as explora aluation asso	tion and	classifie	, plant and e ed as explora aluation ass	tion and			quipment cla evaluation as		Total
	Note	Poland	Lithuania	Total	Poland	Norway	Total	Poland	Norway	Lithuania	Total	
Gross carrying amount Jan 1 2015		91.930	-	91.930	578.046	1.535.085	2.113.131	497.119	582.851	136.105	1.216.075	3.421.136
Purchase		27.372	-	27.372	304.332	-	304.332	2.194	3.903	8.290	14.387	346.091
Acquisition of Sleipner assets		-	-	-	-	-	-	-	394.956	-	394.956	394.956
Exchange differences on translating foreign operations		-	-	-	-	(84.158)	(84.158)	-	(87.469)	122	(87.347)	(171.505)
Recognition of assets related to future costs of decommissioning of oil and gas extraction facilities	13.1.4	-	-	-	-	-	-	-	605.423	-	605.423	605.423
Estimated costs of decommissioning of oil and gas extraction facilities	13.1.4	-	-	-	10.054	1.485	11.539	-304	5.480	-250	4.926	16.465
Reclassification of non-current assets under construction to development assets		-	-	-	30.857	-	30.857	-	-	-	-	30.857
Reclassification of non-current assets under construction to exploration and evaluation assets		60.577	-	60.577	-	-	-	-	-	-	-	60.577
Reclassification of development assets to production assets		-	-	-	(865.348)	-	(865.348)	865.348	-	-	865.348	-
Reclassification to non-current assets (or disposal group) held for sale		-	-	-	(45.011)	-	(45.011)	-	-	-	-	(45.011)
Reversal of assets related to decommissioning of oil and gas extraction facilities	30.1	-	-	-	(2.750)	-	(2.750)	-	-	-	-	(2.750)
Expenditure written off due to project discontinuation	9.4	(12.123)	-	(12.123)	-	-	-	-	-	-	-	(12.123)
Other		-	-	-	(10.180)	-	(10.180)	4.599	(7.941)	(286)	(3.628)	(13.808)
Gross carrying amount Dec 31 2015		167.756	-	167.756	-	1.452.412	1.452.412	1.368.956	1.497.203	143.981	3.010.140	4.630.308
Accumulated depreciation Jan 1 2015		-	-	-	55.696	-	55.696	312.353	199.741	50.873	562.967	618.663
Depreciation		-	-	-	2.427	-	2.427	20.294	129.831	19.065	169.190	171.617
Exchange differences on translating foreign operations		-	-	-	-	-	-	-	(19.307)	336	(18.971)	(18.971)
Reclassification of development assets to production assets		-	-	-	(58.123)	-	(58.123)	58.123	-	-	58.123	-
Other		-	-	-	-	-	-	(144)	-	(286)	(430)	(430)
Accumulated depreciation Dec 31 2015		-	-	-	-	-	-	390.626	310.265	69.988	770.879	770.879
Impairment losses Jan 1 2015		47.161	-	47.161	-	1.535.085	1.535.085	-	43.415	9.303	52.718	1.634.964
Recognised	9.4	1.836	-	1.836	-	1.485	1.485	-	-	6.314	6.314	9.635
Exchange differences on translating foreign operations		-	-	-	-	(84.158)	(84.158)	-	(2.786)	114	(2.672)	(86.830)
Used/Reversed		-	-	-	-	-	-	-	(2)	-	(2)	(2)
Impairment losses Dec 31 2015		48.997	-	48.997	-	1.452.412	1.452.412	-	40.627	15.731	56.358	1.557.767
Net carrying amount Dec 31 2015		118.759	-	118.759				978.330	1.146.311	58.262	2.182.903	2.301.662



# AMORTISATION AND DEPRECIATION



The accounting concept of depreciation applies chiefly to the property, plant and equipment of the LOTOS Group, its buildings and structures, especially those located in the refinery and those used by the LOTOS Group's upstream segment. In hydrocarbon production, so-called units-of-production depreciation method may be used, whereby depreciation charges reflect actual wear and tear, which — in the case of oil and gas production — is tied to real-life output.

Property, plant and equipment are depreciated by allocating their initial value over the period of their useful life.

Depreciation charges are determined based on the expected useful lives of property, plant and equipment.

Table 5. Depreciation/amortisation in expenses by nature – Consolidated Financial Statements for 2015, Note 9, page 32

(PLN '000)	Note	Year ended Dec 31 2015	Year ended Dec 31 2014
Depreciation/amortisatior	8	714.568	808.941
Raw materials and consumables used		16.860.134	24.734.942
Services		1.434.003	1.280.200
Taxes and charges		408.976 (1)	179.710
Employee benefits expense	9.2	685.254	681.865
Other expenses by nature		222.462	344.315
Merchandise and materials sold		1.336.113	978.764
Total expenses by nature		21.661.510	29.008.737
Change in products and adjustments to cost of sales		331.484	67.003
Total		21.992.994	29.075.740
including:			
Cost of sales		20.249.028	27.466.614
Distribution costs		1.284.846	1.162.071
Administrative expenses		459.120	447.055

<sup>(1)</sup> Changes in working capital are not taken into account.



### **AMORTISATION AND DEPRECIATION**

The table below presents the share of the LOTOS Group's segments in depreciation/amortisation charges (to illustrate the scale of depreciation/amortisation charges).

Table 6. Depreciation/amortisation, by segment – Consolidated Financial Statements for 2015, Note 8, page 30

(PLN '000)	Upstream segment	Downstream segment	Other	Consolidation adjustments	Consolidated
		١	ear ended Dec 3	1 2015	
Revenue:	698.898	22.369.102	15.712	(374.270)	22.709.442
Intersegment sales	322.632	43.014	8.624	(374.270)	-
External sales	376.266	22.326.088	7.088	-	22.709.442
Operating profit/(loss) (EBIT)	(57.278)	448.970	(637)	32.343	423.398
Depreciation/amortisatior	242.944	466.330	6.974	(1.680)	714.568
Operating profit/(loss) before depreciation and amortisation (EBITDA)	185.666	915.300	6.337	30.663	1.137.966



# **EBITDA**



EBITDA is a measure of a company's ability to generate cash from its operations <sup>(2)</sup>. Following a practice widely used by its industry peers, the company employs the concept of EBITDA which is understood to be equal to:

- EBIT (operating profit)
- + Depreciation/amortisation
- = EBITDA

#### **EXAMPLE 4.** Calculation of the LOTOS Group's EBITDA (end of 2015)

- PLN 423m
- + PLN 714m
- = PLN 1,137m

Table 7. Consolidated statement of comprehensive income - Consolidated Financial Statements for 2015, page 4

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Revenue	8	22.709.442	28.501.887
Cost of sales	9.1	(20.249.028)	(27.466.614)
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Corporate income tax	10.1	(68.026)	657.343
Net loss		(263.300)	(1.466.372)

<sup>(2)</sup> Changes in working capital are not taken into account.



### **EBITDA**

Table 8. Depreciation/amortisation - Consolidated Financial Statements for 2015, Note 9.1, page 32

(PLN '000)	Note	Year ended Dec 31 2015	Year ended Dec 31 2014
Depreciation/amortisation	8	714.568	808.941
Raw materials and consumables used		16.860.134	24.734.942
Services		1.434.003	1.280.200
Taxes and charges		408.976 (1)	179.710
Employee benefits expense	9.2	685.254	681.865
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Distribution costs		1.284.846	1.162.071
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<sup>(1)</sup> Changes in working capital are not taken into account.



# LIFO-BASED EBITDA AND LIFO EFFECT

High volatility of oil prices on the global markets makes the time of purchasing crude oil to be processed into petroleum products important to the actual profitability of the refining process. In accordance with the IFRS (International Financial Reporting Standards), the LOTOS Group uses the weighted average method to measure changes in inventories of feedstocks, merchandise, products, and intermediate products. This approach is the basis for the preparation of financial statements.

### **EXAMPLE 5.**Calculation of the weighted average oil purchase price

Oil purchase price	Volu	me purchased		Value of purchased oil			
USD 100/bbl	X	500 bbl	=	= USD 50,000			
USD 80/bbl	x	400 bbl	=	= USD 32,000			
USD 50/bbl	X	450 bbl	=	= USD 22,500			
Total		1,350 bbl		USD 104,500			
eighted average oil purchase price = USD 77/bbl							

This method materially distorts the profitability of a refinery, because it defers the impact of changes in crude oil prices on the prices of finished goods.

To neutralise the deferment effect and ensure comparability with global standards, the LOTOS Group uses a simplified, LIFO-based (Last In, First Out) inventory measurement method, which consists in recording changes in inventories based on the price of the last item added to the warehouse.

EBITDA which takes into account **cost of inventories used for production** calculated using the LIFO methodology is called LIFO-based EBITDA. This approach is presented in the additional materials accompanying the Financial Statements (such as the Management's Discussion and Analysis of financial performance and the quarterly presentations of financial results). The mathematical difference resulting from the comparison of the results calculated based on these two methods is known as the LIFO effect.

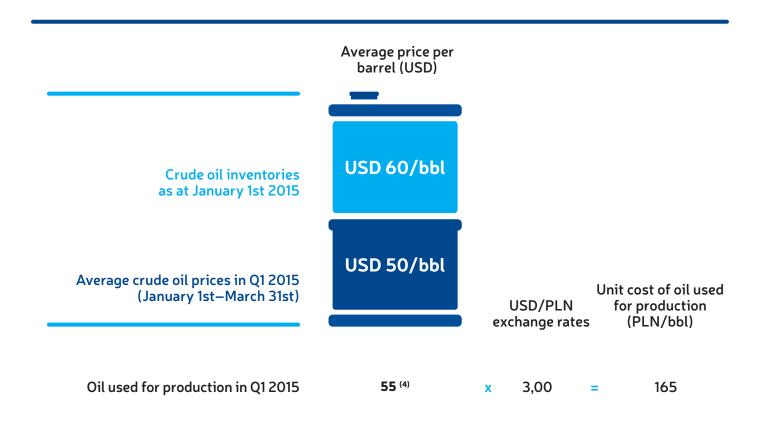


### LIFO-BASED EBITDA AND LIFO EFFECT

#### **EXAMPLE 6.**

Simplified example of EBITDA calculation using the two methods presented above, per one barrel of oil(3):

1. In accordance with IFRS (included in the financial statements):



The cost of one barrel of oil used for production was **PLN 165**. Assuming that the average net selling price of products is **PLN 200** in Q1, the profit per one barrel in accordance with the IFRS methodology (weighted average value of change in inventories) will be:

#### **PLN 200 - PLN 165 = PLN 35**

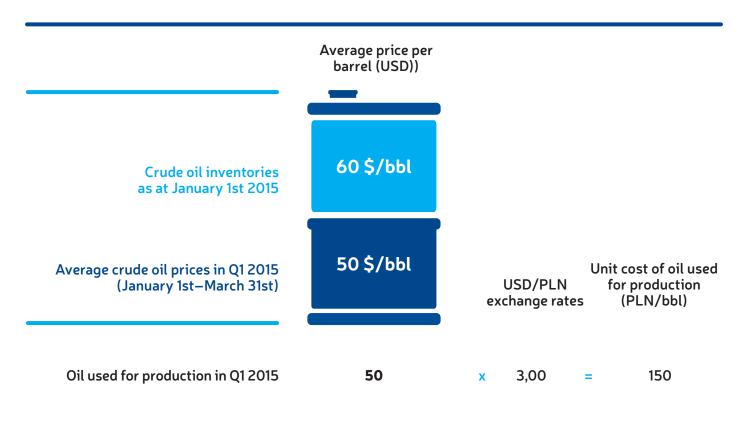
<sup>&</sup>lt;sup>(3)</sup> Amounts selected on a random basis, to illustrate underlying mechanisms; for the sake of simplicity, it has been assumed that stocks comprise one type of crude only and the amount of oil used is equal to the amount purchased in the period.

<sup>&</sup>lt;sup>(4)</sup> Weighted average price of oil used for production (oil priced USD 50/barrel in Q1 2015 added to oil priced USD 60/barrel in stock' on January 1st 2015).



### LIFO-BASED EBITDA AND LIFO EFFECT

#### 2. Based on the 'LIFO methodology':



The cost of one barrel of oil used for production was **PLN 150**. Assuming that the average net selling price of products is **PLN 200** in Q1, the profit per one barrel in accordance with the LIFO methodology will be:

#### **PLN 200 - PLN 150 = PLN 50**

#### Summary

In the first example, EBIT calculated based on the weighted average cost method was **PLN 35**, while EBIT based on the LIFO methodology was **PLN 50**.

Thus, the LIFO effect is the difference between the results calculated using these two methods in the analysed period:

**PLN 50 - PLN 35 = PLN 15** 



# GLOSSARY OF TERMS



#### barrel (of crude oil), bbl

the basic measure of crude oil production. One barrel equals approximately 159 litres.

#### boe

barrel of oil equivalent, a unit of energy based on the energy released by burning one barrel of oil.

#### **Brent price**

the benchmark (reference) price of a crude oil blend comprising oil varieties extracted from the North Sea

#### Brent/Urals differential

the differential between the price of Brent crude and the price of Urals

#### crack spread (product margin)

in reference to petroleum products, the difference between the price of a given petroleum product and the price of Brent crude.

#### crude oil

a naturally-occurring liquid fossil fuel extracted from underground; it consists primarily of hydrocarbons of various molecular weights and chemical structures, with small amounts of organic compounds containing nitrogen, oxygen, sulfur and other chemical elements

#### REBCO (Urals)

Russian Export Blend Crude Oil, the commercial name of the Russian Urals oil

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