

Calculation methodology and sources of the data to 'Separating Grain from Chaff' and 'Additional data'

I. Calculation methodology of profit of the Gas transit segment

Net Profit of 'Gas transit' segment (which is shown in the data 'Separating Grain from Chaff') is a NOPLAT - normalized operating profit, adjusted for income tax at nominal rate.

Normalized operating profit before income tax was determined on the basis of the note 'Segment information' to consolidated financial statements of NJSC 'Naftogaz of Ukraine', namely the item 'Segment result'.

Over the period 2013-2019 the accounting policy of NJSC 'Naftogaz of Ukraine' changed both to determine the indicator used as segment result (for example, normalized operating profit, EBITDA, etc.) and to determine the scope of the reporting segments themselves (up to 2017 Gas transit's results were disclosed only in conjunction with the domestic transportation of natural gas, and after 2017 - separately). Therefore, the data of consolidated financial statements published by the company needed adjustments in certain periods to determine NOPLAT segment 'Gas transit' for the whole period 2013-2019.

For example, according to financial statements for 2019 the segment result was defined as an adjusted EBITDA (in contrast to 2018 reporting period, where segment result was defined as adjusted operating income before tax) and, accordingly, requires the following adjustments:

- 1) From EBITDA disclosed in the financial statements two items are subtracted: (a) depreciation, depletion and amortization and (b) impairment of property, plant and equipment and intangible assets as disclosed in the section on reporting segments.
- 2) Obtained result is added to income recognised per results of Gas Transit Arbitration, included in results from discontinued operations.
- 3) From the obtained result it is subtracted normalized income tax, calculated as the nominal rate of income tax multiplied by EBITDA adjusted in paragraphs 1 and 2 above.

For the period 2013-2015, when the results of Gas transit were reported together with domestic gas transmission, gross profit of international Gas transit was used to determine the NOPLAT of the segment 'Gas transit' (disclosed in the Note 'Segment information'), which is then adjusted as follows:

- 1) Other operating expenses of Gas transit segment (not included in gross profit) are subtracted, which are determined as follows:
 - Other operating expenses of Gas transit and Domestic gas transmission segments are determined as segment result of this segment minus gross profits of both those segments.
 - Other operating expenses of Gas transit and Domestic gas transmission segments are divided on direct and indirect expenses.
 - Direct operating expenses are allocated according to their nature to transit (for example, in the period 2013-2015 foreign exchange differences arose only on gas transit) and domestic transmission, and indirect expenses are allocated by an allocation coefficient. Allocation coefficient of indirect expenses was based on the data for 2017 and determined as % of allocation of depreciation, depletion and amortization between gas transit and domestic transmission (88% for transit, 12% for domestic transmission), which in its turn was determined by (CWD) capacity weighted distance approach.
- 2) Normalized income tax is subtracted, determined as gross profit of Gas transit less other operating expenses multiplied by nominal rate of income tax.

Sources:

- Consolidated Financial Statements of NJSC 'Naftogaz of Ukraine' for 2014-2019 reporting periods <https://www.naftogaz.com/www/3/nakweb.nsf/0/C4775D2495121A4AC2257AD90051F66D>
- Internal data of NJSC 'Naftogaz of Ukraine', estimations and calculation of the team of NJSC 'Naftogaz of Ukraine', responsible for Stockholm Arbitrage.

II. Calculation methodology of the indicator 'EBITDA of 'the Rest of Naftogaz' with adjustment for factors, not controlled by the management' (which is shown on the second slide in the data «Separating Grain from Chaff», and on the last slide in the data «Additional data»)

EBITDA of the 'Rest of Naftogaz' is determined as EBITDA of Naftogaz Group without taking into account the results of Gas transit and adjusted for the factors not controlled by management. The following elements are determined for this calculation:

- (1) EBITDA of Naftogaz Group is determined as net profit / (loss) of Naftogaz Group adjusted for: a) depreciation, depletion and amortisation; b) income tax; and (c) financial expenses and income, net.
- (2) EBITDA of Gas transit segment is determined as the NOPLAT of the Gas transit segment, adjusted for: a) income tax and b) depreciation, depletion and amortisation.
- (3) The effect of non-controllable factors, which include the following:
 - Losses incurred due to loss of the assets in Crimea and occupied territories
 - Net foreign exchange income/(loss) (not included into segment 'Gas transit')
 - Revaluation of fixed assets (not included into segment 'Gas transit')
 - Provisions for litigations and other
 - Net profit/(loss) of PJSC 'Ukrnafta'
 - Expense recognised per results of Gas Sales Arbitration
 - The effect of changes in the import price of gas in USD/thm cm for the period 2013 -2019 compared to 2014. The effect is calculated as follows: the actual volume of imported natural gas used by NJSC 'Naftogaz of Ukraine' for the needs of residential consumers (directly and for the needs in heat of residential consumers) multiplied by the difference in the weighted average purchase price of imported natural gas of NJSC 'Naftogaz of Ukraine' in 2014 year and purchase prices of imported natural gas in the corresponding year for the period 2013-2019, as well as multiplied by the average rate of UAH/USD according to the NBU in the corresponding year.

Sources:

- Consolidated Financial Statements of NJSC 'Naftogaz of Ukraine' for 2014-2019 reporting periods; <https://www.naftogaz.com/www/3/nakweb.nsf/0/C4775D2495121A4AC2257AD90051F66D>
- Internal data of the reporting packages of NJSC 'Naftogaz of Ukraine' to consolidated financial statements of NJSC 'Naftogaz of Ukraine' for 2014-2019 reporting periods.
- Internal data NJSC 'Naftogaz of Ukraine' on the volume of imported natural gas used for the needs of residential consumers and factual purchase price of imported gas in 2019-2013
- Estimations and calculation of the team of NJSC 'Naftogaz of Ukraine', responsible for Stockholm Arbitrage.

III. Calculation methodology of 'EBITDA of the 'Rest of Naftogaz' adjusted by factors not controlled by management, as well as the effects of the increase in gas prices for residential consumers' (which is shown on the second slide in these 'Separating Grain from Chaff', the last slide in the data 'Additional data')

Calculation methodology of EBITDA of 'the Rest of Naftogaz' adjusted for the factors not controlled by management, corresponds to the method described above in paragraph II. Additional effects, incorporated into EBITDA - is the effect of the increase in gas prices for residential consumers as a result of price reform in the gas market started in 2014.

The effect of the increase in gas prices for residential consumers includes the following four elements, the principle of which is to compare the actual figures of corresponding year in the period and 2013 -2019 with the figures adjusted to the estimated scenario without the effect of price reform:

- (1) The effect of the increase in revenues from the sale of natural gas to residential consumers of NJSC 'Naftogaz of Ukraine' (directly and for the needs in heat of residential consumers) minus the increase in royalty for natural gas extraction for residential consumers of JSC 'Ukrgezvydobuvannya' in 2013 - 2019 compared to 2013, which in turn is calculated as follows:
 - (a) Increase in revenues from the sale of gas to residential consumers in the relevant year compared to 2013 is calculated as actual volume of natural gas sales for the needs of the residential consumer of NJSC 'Naftogaz of Ukraine' in the relevant year multiplied by the difference between the wholesale price for residential consumers of NJSC 'Naftogaz of Ukraine' in the relevant year for the period 2013 -2019 and the price of gas for these categories of consumers in 2013 year.
 - (b) Increase in royalty for extraction of natural gas by JSC 'Ukrgezvydobuvannya' is calculated as the actual expenses of royalty for natural gas extraction of JSC 'Ukrgezvydobuvannya' in the relevant year for the period 2013 -2019 minus multiplication of actual volume of extracted natural gas, adjusted for the volumes extracted under JV agreements, and actual royalty rate in UAH/th. cm of 'Ukrgezvydobuvannya' in 2013.
- (2) The effect of a decrease in the usage of gas by residential consumers (directly and for the needs in heat of residential consumers) in the period 2015-2019 as a result of an increase in gas prices. This effect takes into account the following:
 - (a) Decrease in revenues from the sale of gas to residential consumers due to reduction in gas consumption by this category of customers for the period 2015-2019 and in selling prices for this category of consumers in 2013. Total volume of annual reduction in gas consumption by a factor of increased gas prices were conservatively estimated at almost 3 bcm per year of gas (according to the Naftogaz Group's assessment of the impact of this factor in 2015-2016), which was used to calculate this effect in the period 2015 - 2019;
 - (b) Decrease in purchases of imported natural gas for the needs of residential consumers due to reduction in natural gas consumption. To determine this effect in 2015-2019 the volume of reduction in gas consumption (from the point in (a) above) is multiplied by the actual purchase price of imported gas of NJSC 'Naftogaz of Ukraine' in 2014 in USD/th. cm and an average rate of USD/UAH according to the NBU's data in the corresponding year.
- (3) The effect of adjusting the value of imported natural gas inventories for the needs of residential consumers to their net realizable value without the effect of price reform. According to international financial reporting standards, the value of gas inventories should not exceed their net realizable value, i.e. when the regulated price of natural gas at which this natural gas is sold for the needs of residential consumers is less than the purchase price of this gas, in which case the loss occurs because of the difference in selling price and purchase price of gas, should be recognised in the expenses at each reporting date. The following adjustment was used to assess this effect:
 - (a) Actual amount of gas inventory adjustment to their net realizable value in accordance with the data of the consolidated financial statements NJSC 'Naftogaz of Ukraine' for 2014 -2019 was multiplied by an adjusting coefficient, the calculation of which is disclosed below;
 - (b) To determine adjusting coefficient, the difference in actual purchases prices of imported gas, taking into account the estimated wholesale margins (5%) and regulated wholesale prices for residential consumers in the first quarter of a year next to reporting, is divided by the difference in purchase price of imported gas, taking into account the estimated wholesale margins (5%) and regulated wholesale gas prices for residential consumers in the 1st quarter of 2014. The adjusting coefficient determined in this way is then multiplied by the actual reported amount of adjustment of gas inventory's value to their net realizable value.
- (4) The effect of growth in the expenses of natural gas extraction of JSC 'Ukrgezvydobuvannya' (excluding depreciation and royalty) for the needs of residential consumers in 2013-2019 compared to 2013, which is determined as follows:

- (a) The actual volume of natural gas sales of JSC 'Ukrgezvydobuvannya' for the needs of residential consumers in the period 2013-2019, multiplied by
- (b) the difference in the value of the actual expenses of gas extraction per unit (excluding amortization and royalty) JSC 'Ukrgezvydobuvannya' in the relevant year for the period 2013 -2019 and the actual expenses of gas extraction in 2013 (excluding amortization and royalty).

Sources:

- GAS CHANGE: WHERE A THIRD OF GAS DISAPPEARED IN UKRAINE, Figure 3. Influence of certain factors on natural gas consumption by residential consumers in 2014 and 2015, Figure 2. Gas consumption by residential consumers of Ukraine in 2012-2015 in Ukraine and in its separate territories <https://104.ua/ua/opinions/id/gazovij-peredil-kudi-znikla-tretina-gazu-v-ukrajini-18688>
- Annual report of NJSC 'Naftogaz of Ukraine' for 2016, Ukrainian version, Figure «Key factors of change in the volumes of gas supply to district heating companies (DCH) for the households for 2016, mcm», p. 76 https://www.naftogaz.com/files/Zvity/Annual_report_ukr_170608.pdf
- Dynamics of gas prices for residential consumers, <https://www.naftogaz.com/files/Information/Dynamika-cina-2015-2019-Naselennya.pdf>
- Dynamics of gas prices for district heating companies for residential consumers, <https://www.naftogaz.com/files/Information/Dynamika-cina-2015-2019-TKE.pdf>
- Volumes of gas extraction in Ukraine for the periods:
 - 2013-2014 - Annual report of NJSC 'Naftogaz of Ukraine' for 2014 (p. 124, Ukrainian version),
 - 2015-2019 <https://www.naftogaz.com/www/3/nakweb.nsf/0/956937E95620D3A3C2257F1C0050157E?OpenDocument&Expand=1.1&>
- Volume of gas consumption for the periods:
 - 2014-2013 <https://www.naftogaz.com/www/3/nakweb.nsf/0/CE74C00C0DCB1CB0C2257DCE004D3E6C#:~:text=%D0%A3%202014%20%D1%80%D0%BE%D1%86%D1%96%20%D0%A3%D0%BA%D1%80%D0%B0%D1%97%D0%BD%D0%B0%20%D1%81%D0%BA%D0%BE%D1%80%D0%BE%D1%82%D0%B8%D0%BB%D0%B0%20%D1%81%D0%BF%D0%BE%D0%B6%D0%B8%D0%B2%D0%B0%D0%BD%D0%BD%D1%8F%20%D0%BF%D1%80%D0%B8%D1%80%D0%BE%D0%B4%D0%BD%D0%BE%D0%B3%D0%BE%20%D0%B3%D0%B0%D0%B7%D1%83%20%D0%BD%D0%B0%2016%25,-%D0%94%D0%BB%D1%8F%20%D1%80%D0%BE%D0%B1%D0%BE%D1%82%D0%B8%20%D1%81%D0%B0%D0%B9%D1%82%D1%83&text=%D0%97%D0%B0%202014%20%D1%80%D1%96%D0%BA%20%D1%81%D0%BF%D0%BE%D0%B6%D0%B8%D0%B2%D0%B0%D0%BD%D0%BD%D1%8F%20%D0%B3%D0%B0%D0%B7%D1%83,%D0%BC%20%D0%B0%D0%B1%D0%BE%20%D0%BD%D0%B0%2016%25>
 - 2015- 2016 <https://www.naftogaz.com/www/3/nakweb.nsf/0/E8A50F7214508AE8C22580BC00440E84?OpenDocument#:~:text=%D0%9F%D1%80%D0%BE%D1%82%D1%8F%D0%B3%D0%BE%D0%BC%2016%20%D1%80%D0%BE%D0%BA%D1%83%20%D0%BF%D0%BE%D0%B1%D1%83%D1%82%D0%BE%D0%B2%D1%96%20%D1%81%D0%BF%D0%BE%D0%B6%D0%B8%D0%B2%D0%B0%D1%87%D1%96,%D0%BD%D0%B0%200%2C2%20%D0%BC%D0%BB%D1%80%D0%B4%20%D0%BA%D1%83%D0%B1>
 - 2017-2018 [https://www.naftogaz.com/www/3/nakweb.nsf/0/00B62B682AA8CA37C22583900050DAF0#:~:text=%D0%9F%D1%80%D0%BE%D1%82%D1%8F%D0%B3%D0%BE%D0%BC%202018%20%D1%80%D0%BE%D0%BA%D1%83%20%D0%BF%D0%BE%D0%B1%D1%83%D1%82%D0%BE%D0%B2%D1%96%20%D1%81%D0%BF%D0%BE%D0%B6%D0%B8%D0%B2%D0%B0%D1%87%D1%96,%D1%80%D0%BE%D1%86%D1%96%20\(%2D5%2C4%25\)](https://www.naftogaz.com/www/3/nakweb.nsf/0/00B62B682AA8CA37C22583900050DAF0#:~:text=%D0%9F%D1%80%D0%BE%D1%82%D1%8F%D0%B3%D0%BE%D0%BC%202018%20%D1%80%D0%BE%D0%BA%D1%83%20%D0%BF%D0%BE%D0%B1%D1%83%D1%82%D0%BE%D0%B2%D1%96%20%D1%81%D0%BF%D0%BE%D0%B6%D0%B8%D0%B2%D0%B0%D1%87%D1%96,%D1%80%D0%BE%D1%86%D1%96%20(%2D5%2C4%25))
 - 2018-2019 <https://www.naftogaz.com/www/3/nakweb.nsf/0/8B3289E9F4B2CF50C2257F7F0054EA23?OpenDocument>
- Consolidated Financial Statements of NJSC 'Naftogaz of Ukraine' for 2014-2019 reporting periods <https://www.naftogaz.com/www/3/nakweb.nsf/0/C4775D2495121A4AC2257AD90051F66D>
- Internal data NJSC 'Naftogaz of Ukraine', estimations and calculation of the team of NJSC 'Naftogaz of Ukraine', responsible for Stockholm Arbitrage

IV. Calculation methodology of non-financial results of 'the Rest of Naftogaz' (shown on the last slide of 'Separating Grain from Chaff')

To assess changes in non-financial metrics of 'the Rest of Naftogaz' the CAGR was chosen as an indicator, by means of which the defined metrics are estimated for the following periods:

- 2013 - the year before the reform of the gas market
- 2015 - the first full year since the beginning of gas market reform and change of management at key companies of the Naftogaz Group
- 2019 - the last reporting period on the date of publication of this Longread

1) Market share in the segment of gas sales to industrial consumers

Includes the sale of natural gas by NJSC 'Naftogaz of Ukraine' to industrial consumer, budget organizations and operators of gas distribution networks for their production and technological needs. The share of NJSC 'Naftogaz of Ukraine' is defined as the ratio of natural gas sales in cubic meters to the total natural gas consumption by these categories of consumers in 2013, 2015 and 2019.

Sources:

- **Volume of gas sales to NJSC 'Naftogaz of Ukraine' to non-residential consumers for the period:**
 - 2013:
 - ✓ Total volume of natural gas sales of NJSC 'Naftogaz of Ukraine' in 2013 – Annual report of Naftogaz for 2014, p. 146 (Ukrainian version)
<https://www.naftogaz.com/files/Zvity/Naftogaz%20Annual%20Report%202014.pdf>
 - ✓ Volume of natural gas sales of NJSC 'Naftogaz of Ukraine' in 2013 to residential consumers - Annual report of Naftogaz in 2014, p. 73 (Ukrainian version)
<https://www.naftogaz.com/files/Zvity/Naftogaz%20Annual%20Report%202014.pdf>
 - 2015:
 - ✓ Volume of natural gas sales of NJSC 'Naftogaz of Ukraine' to non-residential consumers for 2015 – Annual report of NJSC 'Naftogaz of Ukraine' for 2015, p. 171 (Ukrainian version)
<https://www.naftogaz.com/files/Zvity/Naftogaz-Annual-report-2015.pdf>
 - ✓ Volume of natural gas sales of DHC (for other consumers) for 2015 -
<https://www.naftogaz.com/www/3/nakweb.nsf/0/E8A50F7214508AE8C22580BC00440E84?OpenDocument#:~:text=%D0%9F%D1%80%D0%BE%D1%82%D1%8F%D0%B3%D0%BE%D0%BC%202016%20%D1%80%D0%BE%D0%BA%D1%83%20%D0%BF%D0%BE%D0%B1%D1%83%D1%82%D0%BE%D0%B2%D1%96%20%D1%81%D0%BF%D0%BE%D0%B6%D0%B8%D0%B2%D0%B0%D1%87%D1%96,%D0%BD%D0%B0%200%2C2%20%D0%BC%D0%BB%D1%80%D0%B4%20%D0%BA%D1%83%D0%B1>
 - 2019:
 - ✓ Volume of natural gas sales of NJSC 'Naftogaz of Ukraine' to non-residential consumers for 2019–
<https://www.naftogaz.com/www/3/nakweb.nsf/0/8B3289E9F4B2CF50C2257F7F0054EA23?OpenDocument#:~:text=%D0%A3%202019%20%D1%80%D0%BE%D1%86%D1%96%2C%20%D0%B7%D0%B0%20%D0%B4%D0%B0%D0%BD%D0%B8%D0%BC%D0%B8,%D0%BC>
- **Total volume of gas consumption by non-residential segment for the period:**
 - 2013:
 - ✓ Industry (excluding Crimea) – Annual report of NJSC 'Naftogaz of Ukraine' for 2014, p. 73 (Ukrainian version)
<https://www.naftogaz.com/files/Zvity/Naftogaz%20Annual%20Report%202014.pdf>
 - ✓ Other categories of non-residential consumers (excluding Crimea) – Internal data NJSC 'Naftogaz of Ukraine'
 - 2015:
 - ✓ Industrial consumers and budget organization -
<https://www.naftogaz.com/www/3/nakweb.nsf/0/E8A50F7214508AE8C22580BC00440E84?OpenDocument>
 - ✓ Volume of gas consumption by the operators of gas distribution systems for production and technical needs – Annual report of NJSC 'Naftogaz of Ukraine' for 2015, p. 81 (Ukrainian version)
<https://www.naftogaz.com/files/Zvity/Naftogaz-Annual-report-2015.pdf>
 - 2019:
 - ✓ Annual report of NJSC 'Naftogaz of Ukraine' for 2019, p. 27 (Ukrainian version).

[%D1%81%D1%82%D0%B2%D0%B0%D0%BC%D0%B8%20%D0%9D%D0%B0%D1%84%D1%82%D0%BE%D0%B3%D0%B0%D0%B7%D1%83%20%D0%B7%D0%B1%D1%96%D0%BB%D1%8C%D1%88%D0%B8%D0%B2%D1%81%D1%8F%20%D0%BD%D0%B0%206%25%20%D1%83%202019%20%D1%80%D0%BE%D1%86%D1%96,-](#)
[%D0%94%D0%BB%D1%8F%20%D1%80%D0%BE%D0%B1%D0%BE%D1%82%D0%B8%20%D1%81%D0%B0%D0%B9%D1%82%D1%83&text=%D0%9F%D1%96%D0%B4%D0%BF%D1%80%D0%B8%D1%94%D0%BC%D1%81%D1%82%D0%B2%D0%B0%20%D0%B3%D1%80%D1%83%D0%BF%D0%B8%20%D0%9D%D0%B0%D1%84%D1%82%D0%BE%D0%B3%D0%B0%D0%B7%20%D1%83%202019,%D0%B4%D0%BE%201%2C99%20%D0%BC%D0%BB%D0%BD%20%D1%82%D0%BE%D0%BD%D0%BD](#)