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PGNiG

Annual Report 2018

PGNiG - Polish Oil and Gas Company

# ANNUAL REPORT 2018

PGNiG
- Polish Oil and Gas Company

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a PDF file

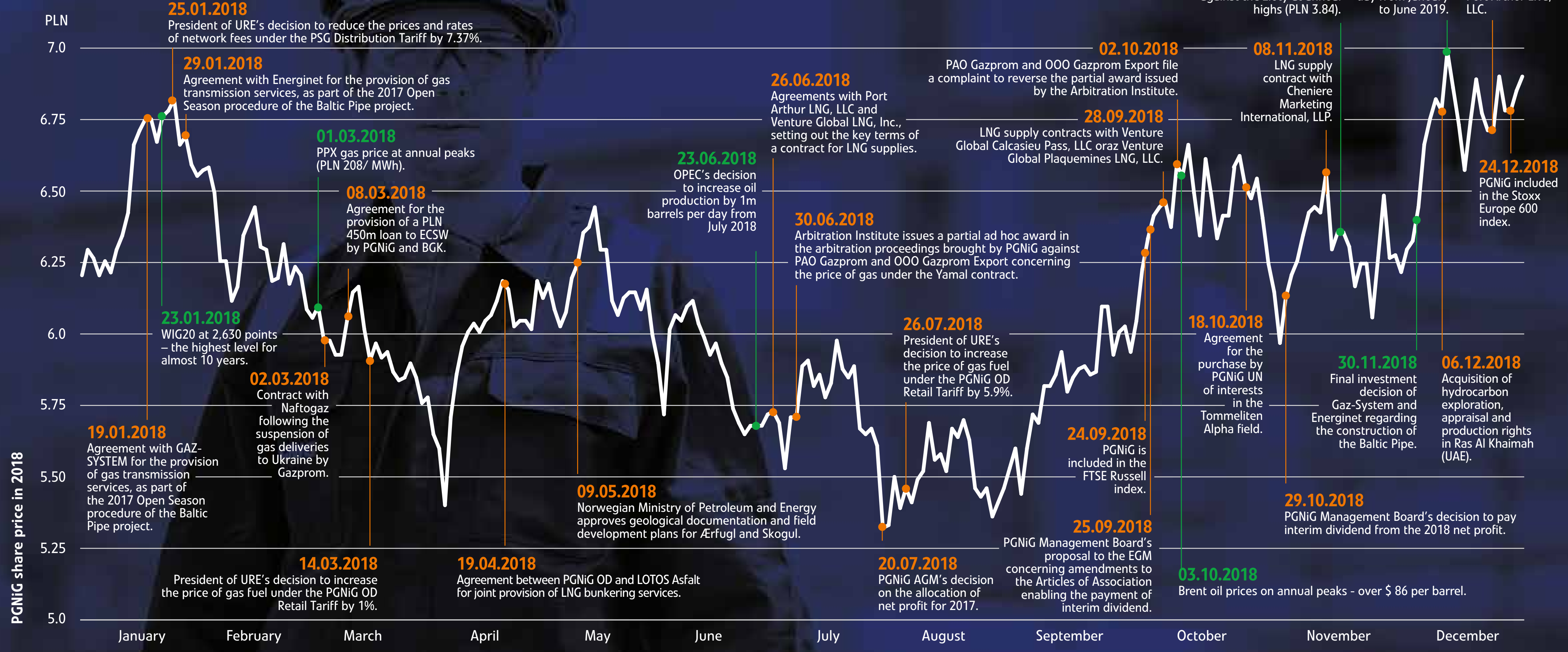
**Legend**

Notes in the margins refer to information highlighted in the Report.

- key to acronyms and abbreviations used in the Report
- websites containing additional information
- aupplementary information, definiotions and comments

PGNiG

# Calendar of events in 2018





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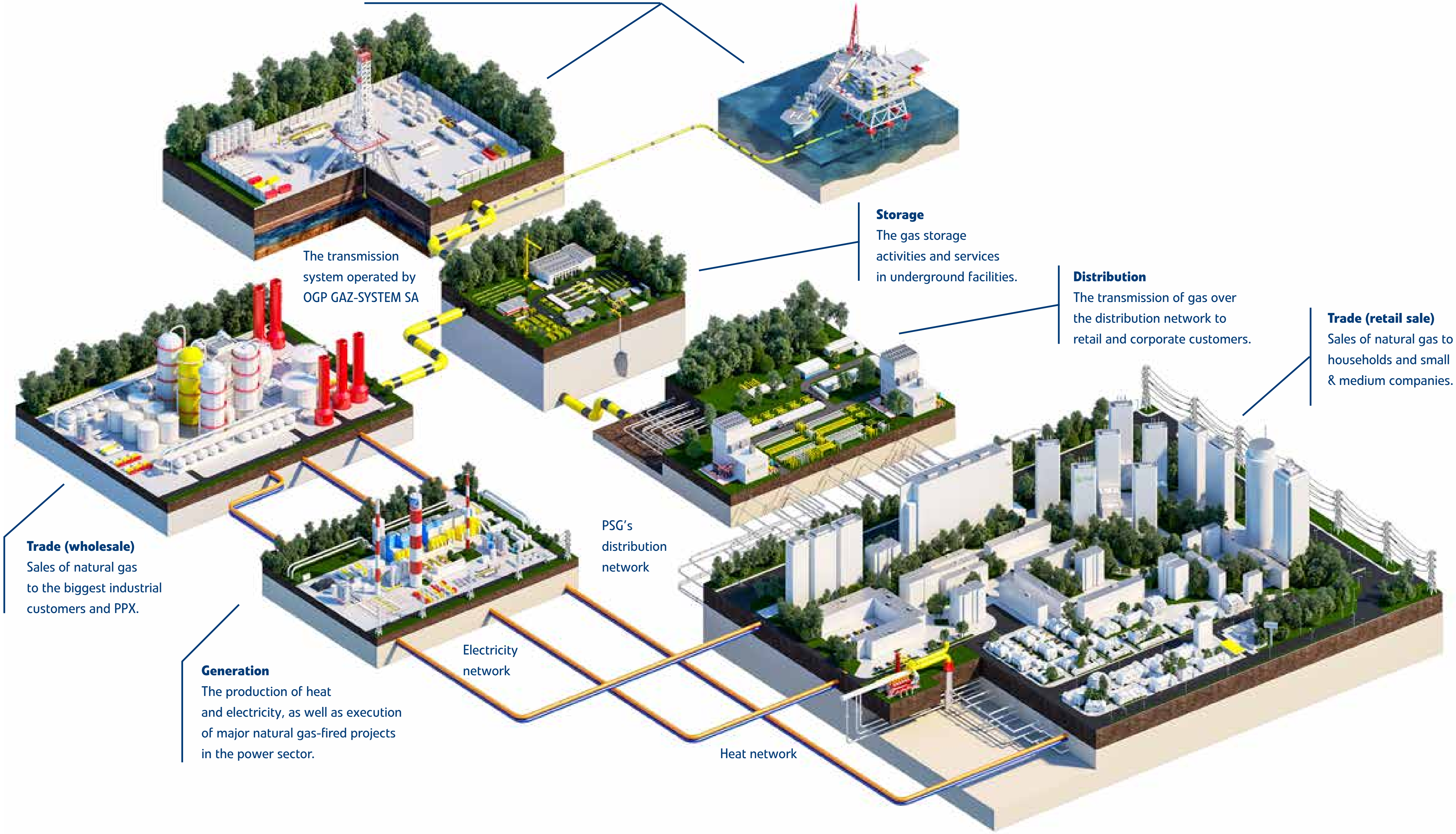
## Contents

# ANNUAL REPORT 2018

PGNiG
– Polish Oil and Gas Company

# Business Model

**Exploration & Production**
The entire process of oil and gas exploration and production, from geological analyses, to geophysical surveys and drilling work, to field development and hydrocarbon production.




**Storage**
The gas storage activities and services in underground facilities.

**Distribution**
The transmission of gas over the distribution network to retail and corporate customers.

**Trade (retail sale)**
Sales of natural gas to households and small & medium companies.

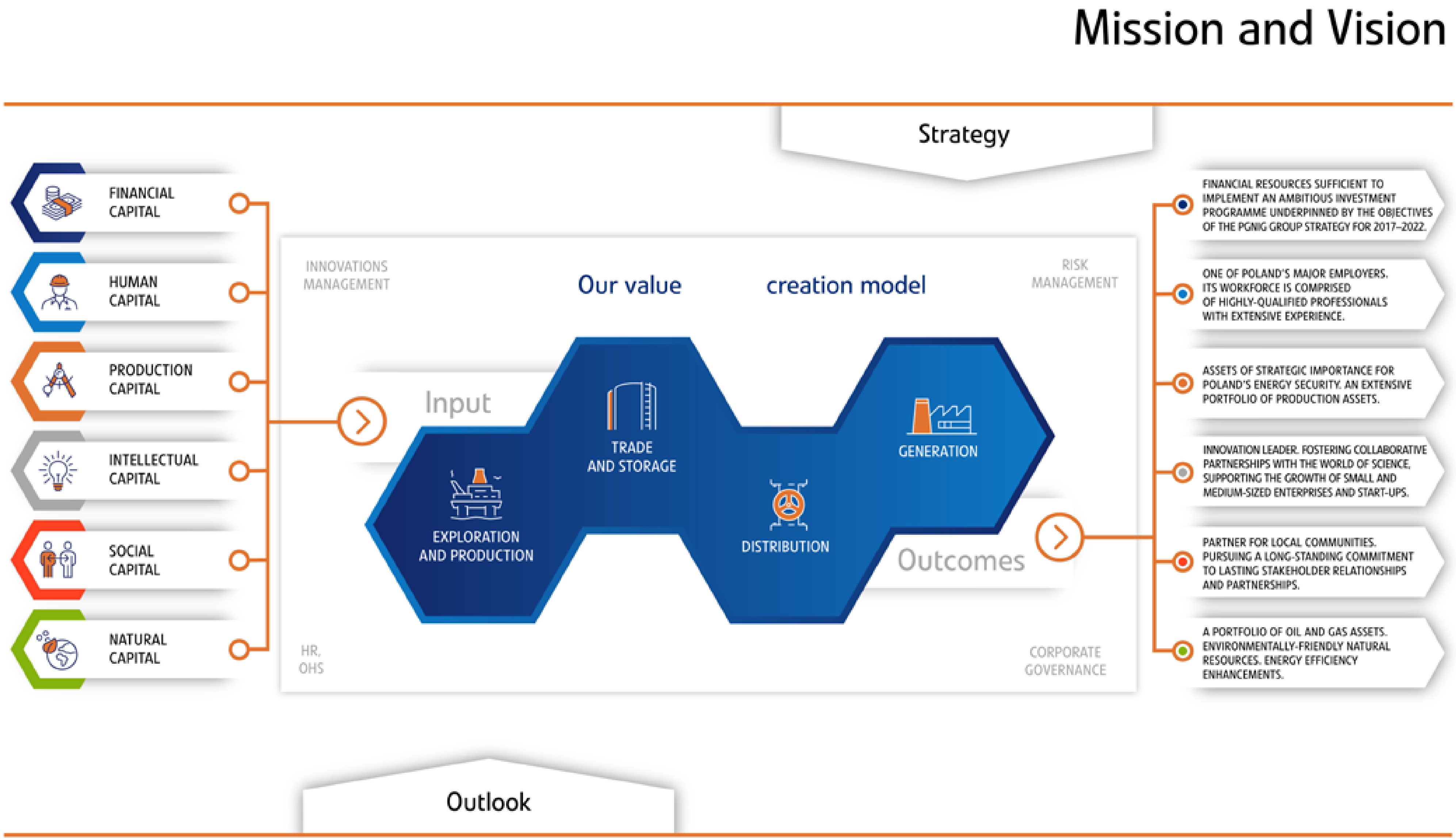
**Trade (wholesale)**
Sales of natural gas to the biggest industrial customers and PPX.

**Generation**
The production of heat and electricity, as well as execution of major natural gas-fired projects in the power sector.

# Contents



# Model of value creation



# Letter from the Chairman of the Supervisory Board

**Ladies and Gentlemen,**

In 2018, the Polish economy confirmed its growing role in Europe – with GDP up by more than 5%, we were one of the fastest-developing economies in the European Union. Nevertheless, last year was certainly a difficult period for businesses operating in the gas and oil sectors. The prices of raw materials remained high for most of the year, which undoubtedly benefitted upstream companies, such as the PGNiG Group. However, we should also take into account the multitude of factors which, from the perspective of management tasks, proved to be a major challenge. I am referring here to fluctuations in commodity prices, the progressing decoupling of gas prices from oil prices, a rapid expansion of the LNG market, and important decisions concerning the energy sector, made both at the national level (including adoption of the National Energy and Climate Plan for 2021–2030) and on the international arena.

Given these developments, the PGNiG Management Board once again proved extremely effective, as confirmed not only by the record high profit delivered in 2018, but also by a number of key initiatives supporting the PGNiG Group Strategy for 2017–2022 (extended until 2026), approved in March 2017.

Effective supervision over the progress in the strategy implementation was also among the priorities of the PGNiG Supervisory Board in 2018. Last year, the PGNiG Management Board made a number of crucial decisions to diversify gas supply sources, including the execution of long-term contracts for LNG imports from American partners, or the acquisition of the Tommeliten Alpha licence on the Norwegian Continental Shelf. The effects of initiatives geared towards increasing Poland's energy security and improving the PGNiG Group's terms of trade will be felt in the coming years and appreciated by our stakeholders.

As Chairman of the PGNiG Supervisory Board I am proud that for the third consecutive time PGNiG secured a top spot in the 'Transparent Company of the Year' competition organised by the Institute of Accountancy and Taxes and the Gazeta Giełdy Parkiet daily.

The Supervisory Board's activities are strongly focused on the information policy and corporate governance – each Member of the Supervisory Board knows that these are fundamental issues for every company which is mature and open to dialogue. Fulfilment of disclosure requirements has long ceased to be a mere regulatory burden for us. On the contrary, we perceive it as a great opportunity for the Group's development, for example because it strengthens our image as a trusted trading partner and increases security, making us better placed to successfully compete on the challenging commodity market. I would like to assure you that maintaining a high degree of transparency and compliance with regulations will remain a top priority for the PGNiG Supervisory Board in 2019. Without doing so, it would be hardly possible for the Company to expand its operations in any business segment in the long term.

The beginning of 2019 and the lack of macroeconomic stability seen on the gas and oil markets show that the PGNiG Management Board and the Group employees have a period of hard work ahead. Further improvement of processes will not only enable delivery of sound operating and financial performance in the short term, but will also make it possible to remain optimistic about the Company's development in 5, 10, or 15 years' time. On behalf of the PGNiG Supervisory Board, I can say that we are ready for that. We will continue to support all promising solutions which, when materialised, may increase the PGNiG Group's value and improve Poland's energy security.

**Respectfully yours,**
**Bartłomiej Nowak**
**Chairman of the Supervisory Board**

# Letter from the President of the Management Board

**Dear Shareholders,
Customers and Trading Partners,**

We invite you to read the Report of the PGNiG Group for 2018.

It covers a period during which we worked hard to deliver on our Strategy, which defines our objectives and ambitions for 2017–2022. We take pride in the Group's accomplishments in 2018, in particular in its success in increasing hydrocarbon reserves and diversifying natural gas supplies to Poland.

In 2018, the PGNiG Group's EBITDA rose 8% year on year. We also recorded the highest revenue in our history, amounting to more than PLN 41bn. In terms of market capitalisation, at the end of 2018 PGNiG was the third largest company on the Warsaw Stock Exchange.

High oil and gas prices during most of 2018 helped us deliver strong EBITDA in the Upstream segment, while high costs of gas imports led to an EBITDA loss in the Trading segment. What is important, despite a more than 7% reduction in the Distribution Tariff rates, performance of the Distribution segment remained solid.

In the Generation segment, high electricity prices helped offset rising coal prices and slightly increased tariff rates for sales and distribution of heat.

In the second half of 2018, we signed contracts with leading US LNG suppliers, thereby securing annual natural gas deliveries of at least 10 bcm (regasified) after 2022.

As a result, we effected a long-awaited change in the Group's gas imports structure. This was a major milestone for our business – not only have we considerably improved pricing terms for gas imports, but we are also becoming a major player on the internal market for LNG, which many experts believe will predominate in global natural gas trading in the future.

In 2018, the Exploration and Production segment was particularly successful in keeping domestic output levels unchanged, largely on the back of increased production from existing fields and revitalisation of old wells, e.g. in the Przemyśl field. On the Norwegian Continental Shelf, we acquired a significant interest in the Tommeliten Alpha field from Equinor Energy AS, thus completing another M&A objective set in the Group's strategy. According to our estimates, at peak production the field will add more than 0.5 bcm to our natural gas production volumes. The newly acquired asset is of key importance, especially in the context of the Group's diversification strategy, which is largely based on the Baltic Pipe pipeline, to be completed in 2022.

A noteworthy accomplishment of the Distribution segment was the increased pace of connecting new customers. In October 2018, we announced a programme of gas network roll-out to new areas in Poland, whose target is to ensure that by 2022 approximately 90% of the country have access to the national gas grid. The project was launched in late 2018.

In 2018, we completed and handed over a new multi-fuel unit at the Zofiówka CHP plant, thus consolidating our position on the heat and electricity market in Upper Silesia. We are also continuing work to construct a new CCGT unit at the Żerań CHP plant. We are satisfied with the progress made on large infrastructure projects, which have a direct bearing on the Group's ability to attain its strategic objectives in the power sector.

As part of our CSR efforts, we are promoting natural gas as an environment-friendly fuel.

We engage in activities to combat smog – we are aware that air pollution in Poland is primarily caused by 'low emissions' or flue gas generated mainly from out-of-date coal-fired boilers, which is why we offer our customers an opportunity to replace their old systems for modern gas boilers. We also work with local governments, encouraging them to rely on gas-powered buses for public transport. Our activities in this area are prompting more and more municipalities to switch to environment-friendly and cost-effective vehicles.

In line with our Strategy, in 2019 we will focus on measures to diversify gas supply sources and increase our reserves both in Poland and abroad. We also intend to ramp up our activities in new markets, including the UAE, where in December 2018 we acquired a hydrocarbon exploration, appraisal and production licence. We do not give up on innovative R&D projects. Our goal is large-scale implementation of revolutionary projects, such as Geo-Metan, which not only improve the safety of miners and help reduce methane emissions but also contribute to growth of our gas output in Poland.

To conclude, I would like to extend my thanks to the Management Board and Supervisory Board of PGNiG as well as our entire team for their trust and hard work in 2018.

**Kind regards,**
**Piotr Woźniak**
**President of the PGNiG Management Board**

# Environment and stakeholders

# Shareholders and the capital market

## Shareholding structure

As at December 31st 2018, the share capital of PGNiG was approximately PLN 5.78bn, and comprised 5,778,314,857 shares with a par value of PLN 1 per share. Series A shares were ordinary bearer shares and each share conferred the right to one vote at the General Meeting. The State Treasury remains PGNiG's majority shareholder.

In 2018, there were no changes in the shareholding structure.

## Shareholding structure at the end of 2018

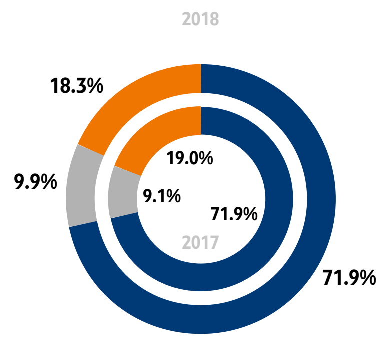
| Shareholders | Number of shares/ voting rights attached to the shares as at December 31st 2017 | Percentage of share capital/total voting rights at the GM as at December 31st 2017 | Change in 2018 | Number of shares/ voting rights attached to the shares as at December 31st 2018 | Percentage of share capital/total voting rights at the GM as at December 31st 2018 |
|---|---|---|---|---|---|
| State Treasury | 4,153,706,157 | 71.88% | - | 4,153,706,157 | 71.88% |
| Others, including: | 1,624,608,700 | 28.12% | - | 1,624,608,700 | 28.12% |
| - OFE* | 525,205,570 | 9.09% | 43,851,066 | 569,056,636 | 9.85% |
| Total | 5,778,314,857 | 100.00% | - | 5,778,314,857 | 100.00% |

* Data based on annual asset specifications of open-end pension funds as at December 29th 2018.

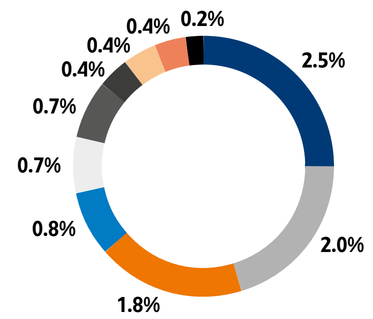
Institutional investors, primarily open-end pension funds (OFE), pension fund management companies, as well as Polish and foreign investment funds, held over 16% of all shares issued by PGNiG.

Major holdings of PGNiG shares were included in the portfolios of open-end pension funds, which at December 29th 2018 held 9.85% of PGNiG's equity, valued at just under PLN 4bn. Relative to 2017, the number of shares held by open-end pension funds increased by 0.8pp. Based on the closing price on the last trading day in 2018, the value of PGNiG shares held by open-end pension funds rose PLN 637m relative to 2017.

### Shareholding structure comparison




### Percentage of PGNiG share capital held by open-end pension funds at the end of 2018




Source: In-house analysis based on annual asset specifications of open-end pension funds as at December 29th 2018.

The largest equity interests in PGNiG were held by funds managing the largest portfolios of future pensions, including Nationale-Nederlanden (NN), Aviva and PZU Złota Jesień. The share of open-end pension funds in the PGNiG shareholder base rose 6.3pp from the IPO, when it accounted for 3.5% of the share capital (valued at PLN 711m). Pension funds are typically long-term investors whose equity portfolios are characterised by low turnover, especially with respect to large dividend-paying companies. They have a stabilising effect on the Company's shareholding structure, while limiting its free float, which can translate into lower trading volumes. In the case of PGNiG shares, the daily trading volume averaged PLN 24.2m in 2018 (2017: PLN 21.7m).

## Performance of the PGNiG stock

Since September 23rd 2005, the PGNiG stock has been listed in the continuous trading system of the main market on the Warsaw Stock Exchange. The issue price in the Company's public offering was PLN 2.98. In 2018, PGNiG shares were included in the following indices: WIG, WIG20, WIG30, WIG-Poland, RESPECT Index, WIGdiv, and WIG-PALIWA (sectoral index).

**PLN 39.9 bn market capitalization on December 31, 2018**

### Performance of PGNiG shares vs WSE indices

| Index / PGNiG stock price* | Value as at Dec 31 2017 | Value as at Dec 31 2018 | 2018 low | 2018 high | PGNiG's weight in the index as at Dec 31 2018 |
|---|---|---|---|---|---|
| WIG | 63 746 points | 57 691 points | 54 027 points | 67 529 points | 3.89% |
| WIG20 | 2 461 points | 2 277 points | 2 083 points | 2 630 points | 5.36% |
| WIG30 | 2 825 points | 2 582 points | 2 375 points | 3 017 points | 5.07% |
| WIG-Poland | 65 184 points | 58 890 points | 55 056 points | 69 047 points | 3.98% |
| RESPECT Index | 3 078 points | 2 793 points | 2 550 points | 3 270 points | 8.07% |
| WIGdiv | 1 214 points | 1 070 points | 1 011 points | 1 281 points | 10.78% |
| WIG-Paliwa | 7 140 points | 7 998 points | 5 814 points | 8 164 points | 23.08% |
| PGNiG | PLN 6.29 | PLN 6.91 | PLN 5.32 | PLN 7.00 | - |

Source: WSE – Warsaw Stock Exchange (Giełda Papierów Wartościowych w Warszawie).
* PGNiG stock price and index values based on closing prices, excluding the ex-dividend day effect.

In 2018, PGNiG shares outperformed the main indices of the WSE. The annual rate of return on the Company shares for the year, excluding dividends, was positive, at 10%. Over that time, the broad market index WIG and the blue-chip index WIG20, which includes PGNiG, yielded negative rates of return of -9% and -7%, respectively. The PGNiG share price movements ranged between -13% (the lowest closing price of PLN 5.32 on July 20th 2018) and +14% (the highest closing price of PLN 7.00 on December 7th 2018) from the 2018 average closing price (PLN 6.12). To compare, fluctuations of the WIG20 index ranged between -9% (the lowest value of 2,082.77 points on October 26th 2018) and +15% (the highest value of 2,630.37 points on January 23rd 2018).

Brent oil - a blend of crudes produced from fields in the North Sea, used as a benchmark in oil pricing.

Material market variables, analysed on an ongoing basis by investors in PGNiG shares, include market prices of crude oil and natural gas, which are produced and traded by the Group.

- In the first quarter of 2018, the price of a month ahead contract for Brent crude rose from USD 66.57/bbl on January 2nd to USD 70.27/bbl on March 29th. The trend continued over the next two quarters to peak on October 3rd, when the price of Brent crude reached USD 86.29/bbl. In the fourth quarter of 2018, the price of Brent crude fell sharply, until it reached its annual low of USD 50.47/bbl on December 24th;
- The price of gas on the PPX was on an upward trend for the first three quarters of 2018, when the spot price rose from PLN 80.80/MWh on January 1st to PLN 120.99 on September 30th 2018. At the end of February and beginning of March, the price of gas on the PPX skyrocketed for a short time to over PLN 200/MWh. In the fourth quarter of the year, the trend reversed and the price of gas on the PPX fell from PLN 115.69/MWh on October 1st to PLN 92.42/MWh on December 31st.

In the first quarter of 2018, the price of PGNiG shares followed the movements of WIG20. In that period, the PGNiG shares and WIG20 delivered identical rates of return of -10%. Corporate and market developments of significance for stock exchange investors buying and selling PGNiG shares over that time included the President of URE's decision of January 25th to reduce the prices and rates of network fees under the Distribution Tariff, and conclusion of transmission contracts between PGNiG and the gas transmission system operators in Poland and Denmark, i.e. GAZ-SYSTEM and Energinet, on January 19th and January 29th, respectively, as part of the 2017 Open Season procedure of the Baltic Pipe project.

In the second quarter, the PGNiG shares slightly outperformed WIG20. Their rate of return was positive at +1% in the period, while WIG20 yielded a negative rate of return of -3% at the quarter end. On May 28th, the PGNiG Management Board recommended to the Annual General Meeting that a dividend of PLN 0.15 per share, i.e. PLN 0.05 below the consensus, be paid to the shareholders. A month later, on June 26th, PGNiG entered into preliminary long-term contracts with Port Arthur LNG, LLC and Venture Global LNG, Inc. for the purchase of liquefied natural gas from the US. On June 30th, the Arbitration Institute in Stockholm issued a partial award favourable to PGNiG in the arbitration proceedings against PAO Gazprom and OOO Gazprom Export concerning the price of gas under the Yamal contract.

The beginning of the third quarter 2018 saw a strong weakening of the PGNiG stock price relative to WIG20, but the Company made up lost ground in September 2018. Eventually, the rate of return on PGNiG shares in the third quarter was higher than that of WIG20 (13% vs 7%). The key event for the share price in the period was the announcement by PGNiG on July 20th of the Annual General Meeting's decision not to pay dividend from the 2017 net profit. Other events key for PGNiG in the third quarter included the decision of the President of URE of July 26th 2018 to increase the gas fuel price under the Retail Tariff, and the PGNiG Management Board's request to the Extraordinary General Meeting to amend the Articles of Association so as to enable the Company to pay interim dividend for 2018.

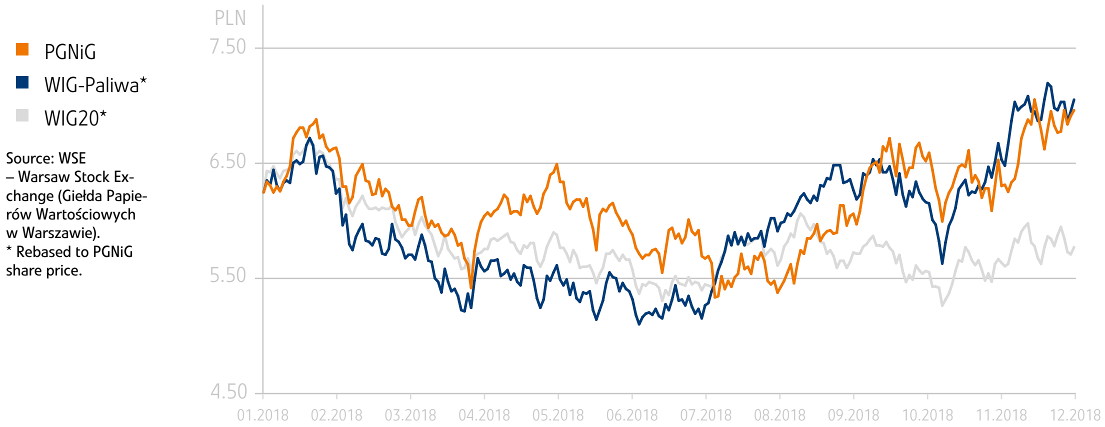
In the fourth quarter of 2018, the PGNiG stock yielded a rate of return of 7%, markedly outperforming the WIG20 index, which came in at -0.4%. In early December, the Company stock price hit an all-time high. On December 7th, the shares were priced at PLN 7.0 the highest level recorded during the Company's more than 13 years on the WSE. The price hikes took place around the time when the Deutsche Boerse Group announced, on December 4th, that the Company would be included in the Stoxx 600 index as of December 24th. Other events of key importance to PGNiG in the fourth quarter included the announcement of the execution of final long-term LNG supply contracts with Venture Global LNG, Inc. and Port Arthur LNG, LLC on October 16th and December 19th, respectively, as well as the purchase of the Tommeliten Alpha field and hydrocarbon exploration, appraisal and production rights in Ras Al Khaimah in the United Arab Emirates. More than a month

LNG - liquefied natural gas, natural gas condensed into liquid form.

earlier, on October 29th, the PGNiG Management Board decided to pay interim dividend of PLN 0.07 per share from the profit earned in 2018. The dividend was paid on December 3rd 2018.

On December 28th 2018 (the last trading day in the year), the PGNiG stock price closed at PLN 6.91. The price was nearly 132% above the issue price of 2005 and 81% above the closing price on the first day of listing. Factoring in the dividends of PLN 1.73 per share paid in 2005–2018, investors who acquired PGNiG shares at the closing price on the first listing date and held them until the end of 2018 saw a profit of 127%.

## PGNiG share price vs WIG20 and WIG-Paliwa




Source: WSE – Warsaw Stock Exchange (Giełda Papierów Wartościowych w Warszawie).
* Rebased to PGNiG share price.

## Rates of return on WSE indices vs PGNiG stock in 2018 and from PGNiG's IPO[1]

| Index | Rate of return in 2018 | Rate of return from PGNiG's IPO[2] to Dec 31 2018 |
|---|---|---|
| WIG | -9.50% | 73.64% |
| WIG20 | -7.50% | -7.32% |
| WIG30 | -8.63% | 1.65%[3] |
| WIG-Poland | -9.66% | 79.90% |
| WIG-Paliwa | 12.01% | 140.74% |
| RESPECT Index | -9.26% | 71.33%[4] |
| PGNiG | 9.86% | 81.36%[5] |

Source: WSE – Warsaw Stock Exchange (Giełda Papierów Wartościowych w Warszawie).
[1] Rates of return do not include dividends paid in 2005–2018.
[2] Closing price on September 23rd 2005: PLN 3.81.
[3] Data calculated in relation to the value of the WIG-30 index at the end of its first trading day (September 23rd 2013).
[4] Data calculated in relation to the value of the RESPECT Index at the end of its first trading day (November 19th 2009).
[5] Relative to the issue price of PLN 2.98, PGNiG shares yielded a rate of return of 132%.

## Trading multiples

| Key metrics | Unit | 2018 | 2017 | 2016 | 2017/2018 change (%) |
|---|---|---|---|---|---|
| Net profit attributable to owners of the parent | PLNm | 3,209 | 2,923 | 2,351 | 9.20% |
| Earnings per share[1] | PLN | 0.55 | 0.51 | 0.40 | 7.84% |
| Stock price at the close of trading on last session day in the year | PLN | 6.91 | 6.29 | 5.63 | 9.86% |
| Average stock price in the year | PLN | 6.12 | 6.33 | 5.16 | -3.32% |
| Number of shares outstanding | million shares | 5,778 | 5,778 | 5,778 | 0.00% |
| Capitalisation at year end | PLNm | 39,928 | 36,346 | 32,532 | 9.86% |
| Average daily trading volume | million shares | 3.9 | 3.5 | 4.9 | 11.43% |
| Average daily trading value | PLNm | 24.2 | 21.7 | 25.5 | 11.52% |
| Dividend amount[3] | PLNm | - | 1,156 | 1,062 | - |
| Trading multiples[2] | - | - | - | - | - |
| P/E at average share price | - | 11.02 | 12.32 | 12.69 | - |
| P/E at year end | - | 12.44 | 12.44 | 13.85 | - |
| P/BV at year end | - | 1.09 | 1.08 | 1.02 | - |
| EV/EBITDA | - | 5.58 | 5.59 | 5.53 | - |
| Dividend per share[3] | PLN | - | 0.2 | 0.18 | - |

Source: WSE – Warsaw Stock Exchange (Giełda Papierów Wartościowych w Warszawie).
[1] Attributable to holders of ordinary shares in the parent (in PLN).
[2] Prices at close.
[3] Dividend from previous year's profit.
P/E at average share price = average share price in financial year / net earnings per share attributable to owners of the parent
P/E at year end = share price at close of trading on last session day in financial year / net earnings per share attributable to owners of the parent
P/BV at year end = share price at close of trading on last session day in financial year / book value per share
EV/EBITDA = market capitalisation at close of trading on last session day in financial year + net debt at end of financial year / earnings before interests and taxes in financial year + total depreciation and amortisation in financial year
Dividend per share = dividend for previous financial year / number of shares outstanding

For more on P/E see p. 193.

For more on P/BV see p. 193.

For more on EV/EBITDA see p. 193.

For more on Dividend see p. 193.

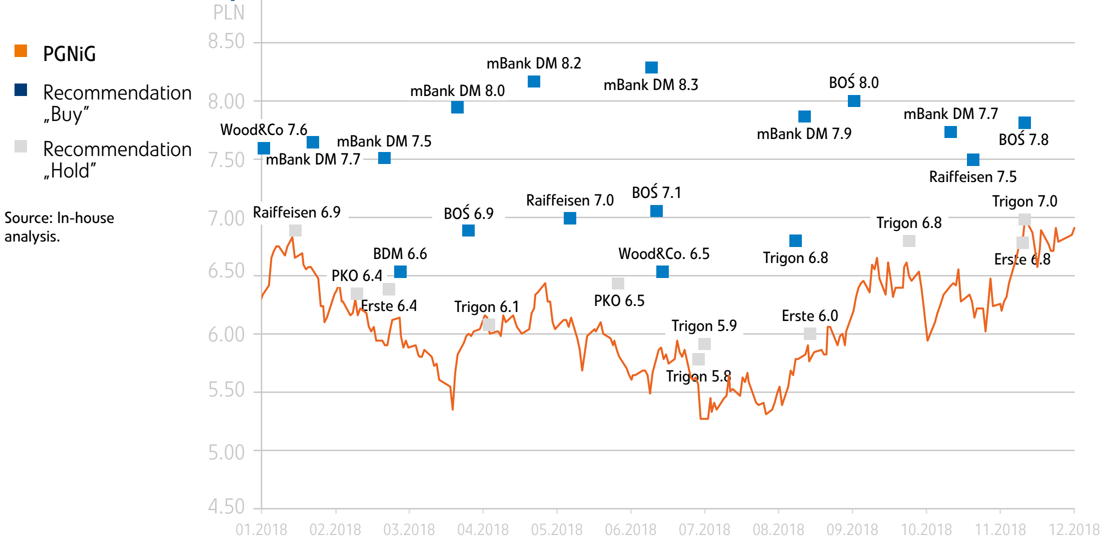
## Number of analyst recommendations

| 2018 | |
|---|---|
| 17 | buy |
| 0 | sell |
| 11 | hold |

| 2017 | |
|---|---|
| 15 | buy |
| 4 | sell |
| 7 | hold |

Compared with 2017, the number of recommendations concerning the PGNiG stock issued by equity analysts rose slightly (from 26 to 28 in 2018). Over the year, analysts issued 17 buy recommendations, 11 hold recommendations, and no sell recommendations. The average target price was PLN 7.1, with an average closing price for the year of PLN 6.12.

## Analyst recommendations in 2018




## Rating

| Agency | Rating | Outlook | The last update |
|---|---|---|---|
| Fitch Ratings | BBB- | stable | 09.10.2018 |
| Moody's Investors Service | Baa2 | stable | 26.06.2019 |

## Dividend

The decision on dividend payment by PGNiG is made by the General Meeting. The PGNiG Group's Strategy for 2017–2022 in effect as at the date of this Report provides for distribution of up to 50% of consolidated net profit as dividend, with the proviso that in recommending dividend payments the PGNiG Management Board must always take into account the PGNiG Group's current financial condition and investment plans.

## Dividend from 2012–2018 net profit

| | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 |
|---|---|---|---|---|---|---|---|
| Dividend for financial year (PLNbn) | 0.4* | - | 1.16 | 1.06 | 1.18 | 0.89 | 0.77 |
| Dividend per share (PLN) | 0.07* | - | 0.20 | 0.18 | 0.20 | 0.15 | 0.13 |
| Average annualised share price (PLN) | 6.12 | 6.33 | 5.16 | 5.94 | 4.85 | 5.83 | 4.06 |
| Dividend yield | 1.05% | - | 3.88% | 3.03% | 4.12% | 2.57% | 3.20% |

* Interim dividend from the Company's profit for 2018

## Investor relations

As a listed company, PGNiG seeks to ensure efficient and effective communication with capital market participants, including with its shareholders and investors. The key task of the Investor Relations Division is to ensure equal and non-discriminatory access to information that has material influence on the Company share price. This is done by ensuring timely and legally compliant fulfilment of disclosure requirements, as well as through numerous supporting initiatives.

In 2018, as part of stock-market reporting, PGNiG published 65 current reports, a number of which contained information on (imports and sales) contracts of key importance to the Group's operations as well as its operating and financial performance. Stock-market reporting was also the channel frequently used by the Company to report on decisions made at the Annual General Meeting and the Extraordinary General Meetings of PGNiG.

PGNiG is working to constantly improve its corporate website, placing particular focus on the investor relations section. The website features current and periodic reports, information on the Group's strategy, PGNiG's investor presentations, with a brief and accessible summary of the PGNiG Group's operations, as well as the telephone and email contact details of the PGNiG Investor Relations Division. Investors

### In 2016–2018,

the Company was awarded in the 9th and 10th edition of the programme in the 'Polish Companies in the WIG20 and mWIG40 Indices' category, and in the 11th edition it was recognised for the 'Best IR Service' in the 'Large Companies' category.

appreciate the top quality of PGNiG's investor relations service, as evidenced by numerous awards in the Golden Website Award programme organised each year by the Polish Association of Listed Companies in Warsaw.

See also:
www.en.pgnig.pl/investor-relations

Following the announcement of its annual, semi-annual and quarterly results, the Company also organised four conference calls (for analysts and investors) and four press conferences (for all stakeholders and especially for the media). PGNiG arranged a real-time broadcast of a press conference on its website (with simultaneous interpretation into English) and the opportunity to replay the recording of the conference call attended by capital market representatives.

See also:
www.en.pgnig.pl/investor-relations/reports/current/-/reports/2018

See also:
www.irip.pl/
o-konkurs-the-best-
annual-report

See also:
www.irip.pl/
transparentna-
spolka-2018

See also:
www.efcongress.com/
sites/default/
files/imce/rating_
relacji_inwestorskich_
ekf_2018_0.pdf

PGNiG actively communicated with retail investors. Key initiatives addressed to this investor group included development of dedicated educational materials building the investors' knowledge of the Company and the gas market (e.g. the 2017 Integrated Annual Report) and participation in the Retail Investor's Day during the Stock Exchange Full of Value event held at the WSE.

Investor relations and financial reporting initiatives taken by the PGNiG Group with numerous stakeholders in mind were recognised by the judging panel of the 'Best Annual Report 2017' contest, organised by the Institute of Accountancy and Taxes. In November 2018, the PGNiG Group received the second main award and a distinction for the best application of International Financial Reporting Standards/International Accounting Standards in the corporate category (the decision was based on evaluation of full-year reports, including financial statements, Directors' Report, and the 2017 Integrated Online Report).

In April 2018, the PGNiG Group was also named one of the five most transparent companies included in the WIG20 index, in the 'Transparent Company of the Year 2017' contest organised by the Institute of Accountancy and Taxes. The Group was recognised not only for its reporting (including financial reporting) and investor relations activities but also for implementing corporate governance standards.

In 2018, PGNiG ranked among the 14 companies included in the WIG30 index that were assigned the 'A' rating by the European Financial Congress in the largest ever survey and rating of the WIG30 companies' investor relations on the Polish capital market.



# Customers

As a leading integrated group in the polish oil and gas sector, PGNiG Group has a wide range of both retail and business customers. The PGNiG Group customers purchase from it primarily natural resources, mainly natural gas and crude oil as well as other products and services provided by numerous Group companies.

## Customers by key commodities and products sold by the Group

| | |
|---|---|
| Crude oil, condensate, NGL | 1. Major oil companies operating in Poland, including:<br>• LOTOS Group;<br>• ORLEN Group;<br>• TOTSA TOTAL Oil Trading.<br>2. Foreign oil companies – PGNiG Group's partners under foreign production licences. |
| E high-methane natural gas and Ls/Lw nitrogen-rich gas | 1. Polish Power Exchange;<br>2. Refineries and petrochemical plants;<br>3. Power and heat plants;<br>4. Nitrogen plants;<br>5. Retail, services, wholesale;<br>6. Other industrial customers in Poland and abroad;<br>7. Households – **regulated pricing (Energy Regulatory Office Tariff);**<br>8. Exports;<br>9. PST customers. |
| LNG | 1. Bunkering LNG-fuelled vessels;<br>2. Clients of the London LNG office;<br>3. Small-scale LNG;<br>4. Industrial customers. |
| CNG | 1. Owners of commercial vehicles;<br>2. Retail customers;<br>3. Local public transport companies. |
| Heat | 1. Residents of the Warsaw region (Warsaw and the neighbouring area) – **regulated pricing (Energy Regulatory Office Tariff);**<br>2. Residents of the Upper Silesia – **regulated pricing (Energy Regulatory Office Tariff)**. |
| Electricity | 1. Exchange trading (POLPX, EEX);<br>2. Wholesale trading companies;<br>3. Business customers;<br>4. Households – **regulated pricing (Energy Regulatory Office Tariff);**<br>5. PST customers. |

NGL, natural gas liquids - components of natural gas that are separated from the gas state in the form of liquids.

CNG - compressed natural gas, natural gas compressed to a pressure of 20-25 MPa.

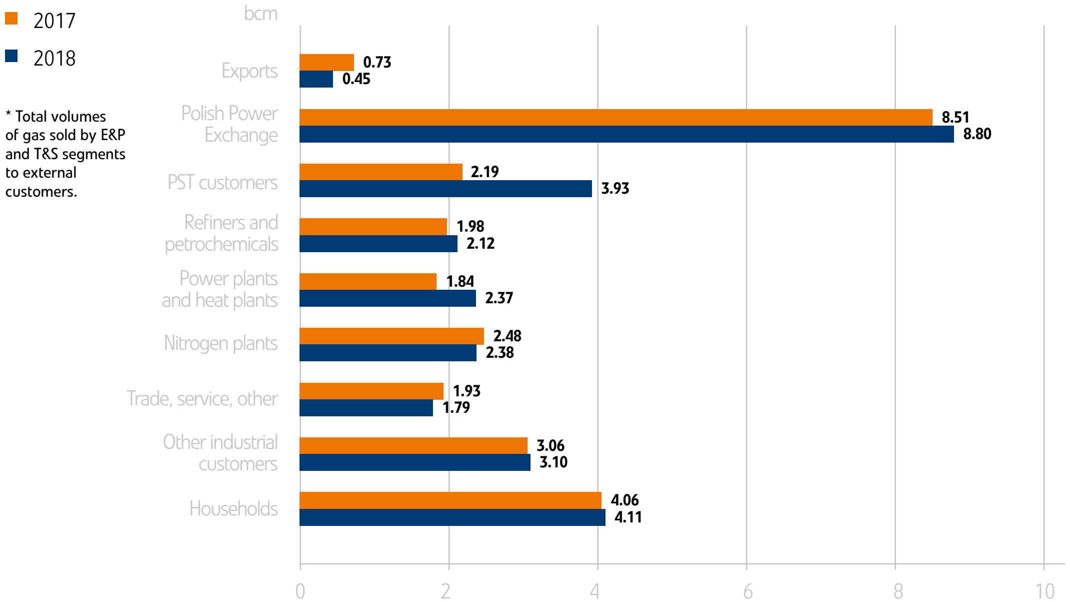
## Customers by key services provided by the Group

| | |
|---|---|
| Natural gas distribution services | 7 million customers connected to the gas distribution grid – **regulated pricing (Energy Regulatory Office Tariff)** |
| Heat distribution services | Heat consumers in the Warsaw region (Pruszków, Michałowice and Piastów areas) and the Katowice region – **regulated pricing (Energy Regulatory Office Tariff)** |
| Natural gas storage services | Companies importing natural gas to Poland or trading gas abroad – **regulated pricing (Energy Regulatory Office Tariff)** |
| Drilling and well services; geophysical and geological services | Local and international customers |

## Sale and distribution of gas

PGNiG Group is the largest natural gas supplier on the growing polish gas market (CAGR +2.7% in 2005-2017).

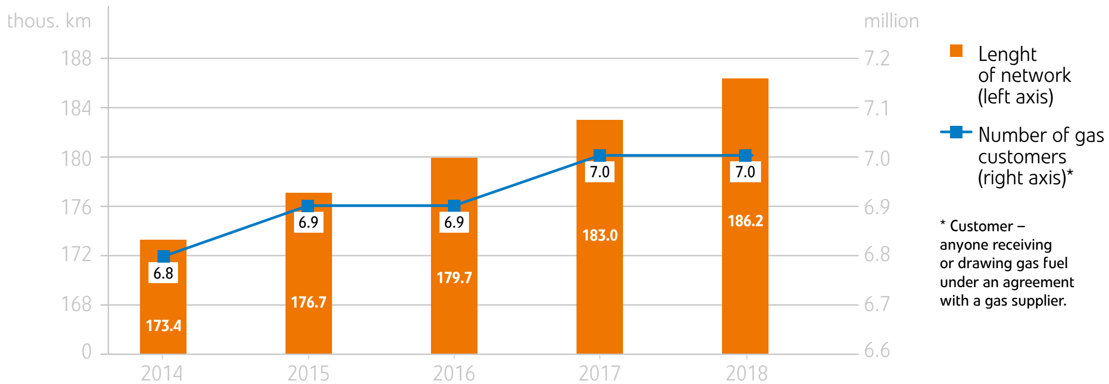
### PGNiG Group* – gas sales volumes by customer group (bcm)




* Total volumes of gas sold by E&P and T&S segments to external customers.

Polska Spółka Gazownictwa Sp.zo.o. is the owner of approximately 97% of Poland's distribution network and nearly 99% of the gas service lines. The company transports natural gas from gas sellers to households, industrial and wholesale customers.

### Length of network, including service lines (thousand km), and number of customers




* Customer – anyone receiving or drawing gas fuel under an agreement with a gas supplier.

## Wholesale trade

In pursuit of its strategic objective to increase gas sales volumes, in 2018 PGNiG entered into a number of contracts to sell gas to customers in Poland, and extended its cooperation with strategic customers it already had. The Company also signed contracts with new customers from the steel and metallurgy industry, including CMC Poland Sp. z o.o. and continued to export gas to Ukrainian market.

In 2018, the largest amounts of gas in Poland were sold to industrial customers. The largest Polish customers in this category include Grupa Azoty SA and its subsidiaries, PKN Orlen SA and its subsidiaries, Grupa Lotos SA, Polska Grupa Energetyczna SA, Arcelor Mittal Poland SA, and KGHM Polska Miedź SA.

In 2018, sales on the Polish Power Exchange (PPX) accounted for the largest portion (30%) of the PGNiG Group's total gas sales. The volume of gas sold by PGNiG on the PPX in 2018 increased by approximately 0.8 TWh year on year.

### Business-to-business sales policy

In the B2B market in 2018, PGNiG OD continued its strategy to expand the gas fuel portfolio and improve its margin management.

PGNiG OD is a gas supplier with the most extensive portfolio of gaseous fuels, tailored to the diverse needs of individual segments of business customers. To the customers interested in the fixed price guarantee (for the duration of the contract), the following mass products were offered: Low Price All the Time, Flexible Price, Constant Savings for Business, Business Online and Certain Price. Larger customers had the ability to flexibly determine contract terms (payment terms, delivery periods) in the fixed price formula (based on individual valuation) or by tying their price with gas prices at the Polish Power Exchange (indexed product, tranche product or a mix of the two).

## Sales of LNG and CNG

In the area of LNG, PGNiG OD focuses on industrial customers whose energy demand cannot be met due to gas infrastructure constraints in terms of physical availability and capacity limits. PGNiG OD provides bunkering services as a separate business segment, supplying LNG to power marine vessels.

The key customers of the CNG segment are public transport companies (ca. 70% of all customers), which rolled out their fleets of CNG buses when excise duty was suspended and CNG transport became economically viable. The remaining share comprises customers in the utility vehicle market (ca. 15%) and retail customers (ca. 15%).

### PGNiG's offer for individual clients

In 2018, the company launched a number of promotional campaigns, which stimulated customers' interest in its offering and increased added value for customers. Some of the campaigns were:

- 'Automatic Promotion' – as a means to mitigate the competition, for the BW1-BW4 tariff groups an automatic promotion was introduced, which temporarily reduced the selling price (for the first quarter of 2018) without the need for customers to sign any documents;
- 'Low Price All the Time, 2nd and 3rd Edition' – ensuring protection against fluctuations in gas prices;
- 'Subsidy of up to PLN 3,000' (1st and 2nd edition), offering financial support to consumers who plan to switch from solid fuel to gas fuel in their heating systems;
- 'Gazek – Keeping Your Home Safe', in which insurance products (insurance of home appliances and consumer electronics as well as assistance insurance) were added to the offering;
- 'Switch to Gas', where PGNiG joined forces with local authorities to actively reduce smog by offering people easier access to environmentally-friendly gas fuel;
- 'PGNiG Debt of Gratitude' (including the edition dedicated to miners who went on strike at the Wujek mine) – helping PGNiG OD customers with the Warsaw Uprising or Wujek Mine Defender veteran status to pay for gas.

Thanks to the scheme, around 145 thousand new accounts in tariff groups 1–4 were added to the retail customer base in 2018.

### Customer satisfaction

The companies providing services to retail customers at the PGNiG Group, including PGNiG OD and PSG, constantly improve the quality of service and develop online sales channels and modern tools of communication with customers via websites prepared in a mobile version and adapted to the needs of the disabled and elderly.

At the same time, efforts are made to increase customer awareness on the energy market in the context of market liberalisation and fair competition. Handbooks explaining the matters have been prepared and 'Informed Customer' campaigns are under way. The campaigns are targeted at natural gas and electricity consumers, as a response to signals about some traders' activities that have certain characteristics of unfair competition. The aim is to warn PGNiG's customers against dishonest competitor vendors who want to pass for PGNiG employees, and to educate customers about their consumer rights.

In addition, on September 19th 2018, PSG and the PGNiG Foundation launched a nationwide educational campaign under the slogan 'Natural gas - reliable and safe'. Its main objective is to disseminate knowledge about natural gas and to raise awareness of how to use gas-fuelled appliances at home responsibly.

On top of the activities discussed above, it also important to mention the implementation of the MIGAM sign language system at the PGNiG Customer Service Offices. The MIGAM system enables the hearing impaired to establish a video connection with a sign language interpreter from a web browser, a mobile application or any other device that has a camera.

Committed to supporting Group-wide efforts to tackle the problem of air pollution (smog) affecting local communities in Poland, PGNiG OD has launched a sales programme entitled 'Subsidised Furnace Replacement'.


# Our employees

Employees are the asset determining the Group's value and its successful development. Accordingly, the Group strives to provide its employees with stable employment and rewarding career opportunities in a safe and friendly working environment.

The PGNiG Group is one of the largest employers in Poland, its workforce largely comprised of highly-qualified professionals with extensive experience. At the same time, it can boast being the first employer for many young people.

## Employment structure in the PGNiG Group

### Employment at the PGNiG Group and PGNiG by segment

| | 2018 | 2017 | 2016* | 2015 | 2014 |
|---|---|---|---|---|---|
| Exploration and Production | 6,847 | 6,998 | 7,720 | 8,903 | 10,221 |
| Trade and Storage | 3,051 | 2,961 | 3,520 | 3,462 | 3,929 |
| Distribution | 11,542 | 11,114 | 10,846 | 10,678 | 12,173 |
| Generation | 1,813 | 1,785 | 1,870 | 1,071 | 1,068 |
| Other Activities | 1,510 | 1,836 | 1,315 | 1,305 | 1,605 |
| Total | 24,763 | 24,694 | 25,271 | 25,419 | 28,996 |

* Data for 2016 as restated in line with the reclassification of the PGNiG Group's activities in 2017, when some of the employees were transferred from the Trade and Storage segment to the Other Activities segment.

As at December 31st 2018, the PGNiG Group employed 24,763 staff, 69 (0.3%) more than as at December 31st 2017.

In the Exploration and Production segment, a drop in employment was recorded. Relative to December 31st 2017, the number of employees fell by 151 (or 2%), which was mainly attributable to 109 headcount reduction at Geofizyka Toruń (11% of its total headcount) following completion of certain operations that required contingent staffing, a standard practice at the company due to the nature of its business.

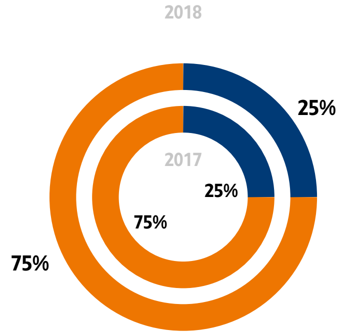
Relative to December 31st 2017, headcount at the Distribution Segment went up by 428 (or 4%). The increase in employment resulted mainly from the acquisition of a spun-off business of PGNiG Technologie SA by Polską Spółkę Gazownictwa Sp. z o.o. As part of the merger, PSG established a new Infrastructure Development and Maintenance Branch in Krosno, which hired 278 former PGNiG Technologie employees. The remaining increase was a consequence of defining new business needs and investment processes at PSG, as well as implementing an age management policy that ensures optimal age of staff and an appropriately high level of qualifications.

Relative to December 31st 2017, the number of employees in the Other Activities segment decreased by 326 (or 18%) due to a number of changes in individual companies of the segment. Key developments affecting the segment's headcount include:

- 302 headcount reduction at PGNiG Technologie (56% of its total headcount), chiefly due to the completion of the 'Krosno Technology' project in 2018. As part of the project, a section of the company's business was spun off and transferred to PSG together with 278 staff in compliance with Art. $23^1$ of the Polish Labour Code. Furthermore, as part of the 'New Records' project, PGNiG Serwis took over 11 employees;
- workforce restructuring at Geovita SA, as a result of which 42 employees (or 18%) were made redundant. The reduction in headcount was achieved primarily through the expiry of fixed-term contracts;
- recruitment of 48 new personnel by PGNiG Serwis (20% of its total headcount) mainly to keep up with the development of its services, in particular security services, and meet the requirements of the 'New Records' project, carried out in partnership with PGNiG Technologie;
- transfer by the PGNIG Head Office of 27 employees from field ICT units to PGNiG OD, the Trade and Storage segment.

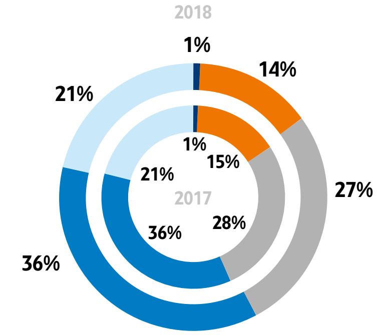
## Workforce structure at the PGNiG Group

### Sex



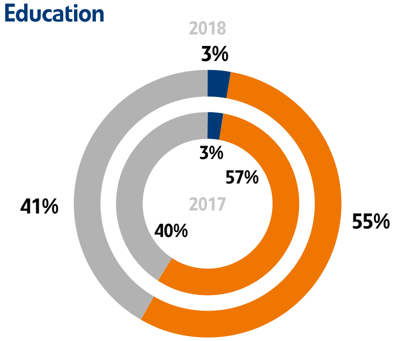

- Women
- Man

### Age

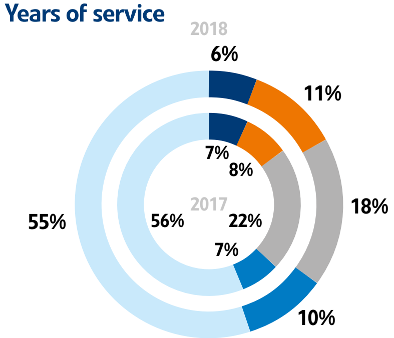



- up to 24
- 25-34
- 35-44
- 45-55
- over 55

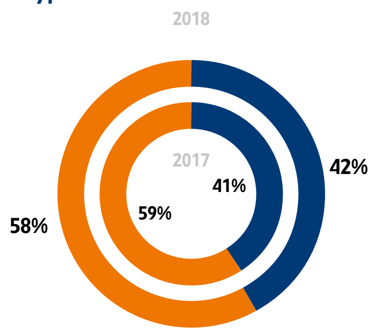
## Education




## Years of service




## Job type




## Recruitment

PGNiG's recruitment policy is focused on employing top-class specialists whose expertise and competence, combined with the experience and professionalism of the Company's other staff, will ensure continuity and high standard of business processes. Priority in filling vacancies at the PGNiG Group is given to internal recruitment, to best use the potential of its existing employees.

### Workforce turnover – new hires/departures (by age and gender, as at the end of 2018)

| Age (years) | Number of new hires | | Number of departures | |
|---|---|---|---|---|
| | Women | Men | Women | Men |
| up to 24 | 42 | 159 | 17 | 39 |
| 25-34 | 314 | 443 | 118 | 231 |
| 35-44 | 231 | 335 | 182 | 274 |
| 45-55 | 78 | 270 | 56 | 310 |
| over 55 | 18 | 127 | 143 | 490 |
| Total | 683 | 1,334 | 516 | 1,344 |

### Employee turnover at the PGNiG Group in 2018

| Organisational unit | New hires in 2018 as percentage of total workforce | Departures in 2018 as percentage of total workforce |
|---|---|---|
| PGNiG | 3.90% | 4.41% |
| PGNiG Group | 8.05% | 7.29% |

### Student internship and work placement programmes

PGNiG offers a number of work placement opportunities and competitions to select candidates to be offered internships and traineeships with the Company. Its work placement programmes are an attractive opportunity to gain professional experience, develop new skills, and learn more about working in the oil and gas industry. In 2018, PGNiG had in place the following internship and education programmes:

**GeoTalent**

It is PGNiG's proprietary internship and education programme for students of the AGH University of Science and Technology in Kraków, the Faculty of Geographical and Geological Sciences of the Adam Mickiewicz University of Poznań and the Faculty of Geology of the Warsaw University. It seeks to identify and attract the best students and graduates who want to pursue their professional careers in the oil and gas industry. GeoTalent comprises workshops, competitions for students, the Mentoring Programme, the Ambassadorial Programme, the Summer Internship Programme, and other similar initiatives. A total of 38 interns completed paid placements with PGNiG in 2018.

**Energy for the Future**
It is an internship programme run by the Company jointly with two other groups under Ministry of Energy patronage, aimed at finding the most talented students and graduates of faculties relevant to the Polish energy sector. Each participating student will have a chance to gain hands-on experience and skills in the areas of interest. The number of interns enrolled in the third edition of the programme was 23.

**EU co-financed internship programmes**
In 2018, PGNiG offered paid internships for participants in the internship programme run by the Adam Mickiewicz University of Poznań and co-financed with EU aid funds under the Knowledge–Education–Development Operational Programme. In 2018, there were three interns enrolled.

**Deposits of Career**
The programme offers students and graduates of all faculties (except oil and gas engineering, covered by GeoTalent) an opportunity to gain professional experience at a large and stable company. Its participants can complete an internship and take part in educational events to support career building. In 2018, 19 trainees were admitted under the programme, 13 of whom stayed with PGNiG as interns or employees working under other arrangements.

Internships are also offered by PGNiG outside the programmes discussed above. In 2018, a total of 253 persons were covered by the internship and work placement opportunities.

### Number of internship and work placement participants in the PGNiG Group in 2017–2018

| Organisational unit | Number of internship and work placement participants in 2018 | | Number of internship and work placement participants in 2017 | |
|---|---|---|---|---|
| | Secondary school students | University students | Secondary school students | University students |
| PGNiG Group | 279 | 502 | 225 | 258 |
| PGNiG | 36 | 217 | 7 | 109 |

## Diversity in the workplace

### Management Boards of PGNiG Group companies by gender (%) in 2018

| Organisational unit | Women | Men |
|---|---|---|
| PGNiG | 17% | 83% |
| PGNiG Group | 15% | 85% |

### Supervisory Boards of PGNiG Group companies by gender (%) in 2018

| Organisational unit | Women | Men |
|---|---|---|
| PGNiG | 0% | 100% |
| PGNiG Group | 17% | 83% |

## Parental leaves

### PGNiG Group employees on parenting-related leaves (maternity/paternity wand parental leave) in 2017–2018

| Organisational unit | Total (percentage of total workforce) | Women (percentage of all employees on parental leave) | Men (percentage of all employees on parental leave) |
|---|---|---|---|
| PGNiG | 1.84% | 95.35% | 4.65% |
| PGNiG Group | 2.39% | 71.40% | 28.60% |

In 2018, the rate of return to work after parenting-related leave at the PGNiG Group was 87.2% (2017: 91.5%). In 2018, the rate of return to work after parenting-related leave at PGNiG was 92.1% (2017: 89.6%).

Parenting-related leave is any leave to which an employee may be entitled after child birth/adoption, including maternal, additional maternal, paternal, parental and childcare leave.

## Remuneration policy

The key internal document governing the remuneration policy at PGNiG is the Collective Bargaining Agreement concluded with trade unions on July 15th 2009. The remuneration system is additionally governed by internal rules in place at individual organisational units and by agreements with trade unions.

In line with the adopted remuneration policy, base pay rates are based on job grading. The rate depends on the qualifications required for a given job, type of work performed and professional experience.

The policy also provides for additional components of remuneration, the most important of them being:

- Awards and bonuses under an incentive scheme;
- St. Barbara's Day awards, paid, as a rule, in the amount of a monthly base pay;
- Jubilee benefits and one-off retirement benefits, in amounts depending on the length of service with the Company, and;
- Annual bonuses, in amounts depending on the Company's performance, negotiated every year with employees.

## Incentive scheme

At PGNiG, a bonus scheme is in place whose key components include:

- MBO (Management By Objectives) bonus, which applies to management positions responsible for achieving PGNiG's key objectives. The amount of an MBO bonus depends on the quality and progress in the achievement of allocated objectives;
- Discretionary periodic bonus, which covers the remaining employees and is granted on a quarterly basis, based on discretionary assessment of an employee's performance by their superior;
- Discretionary task bonus, earmarked for employees excelling in their work for the Company (a special account placed at the disposal of the PGNiG Management Board);
- Discretionary project bonus, earmarked for employees who have been involved in the execution of project work; the bonus amount depends on the quality and progress in the execution of specific projects.

An element supporting the incentive scheme is also the miner's titles and industry badges as well as related financial rewards given on the occasion of the Miners' Day. The titles and badges are awarded for long service as well as for special merits and achievements at work.

## Employee Pension Plan

Each employee, who has continuously worked for the Company for at least three months, may voluntarily join The Employee Pension Plan. Basic contributions amounting to 7% of employee's gross remuneration are financed by the employer.

### Employee development

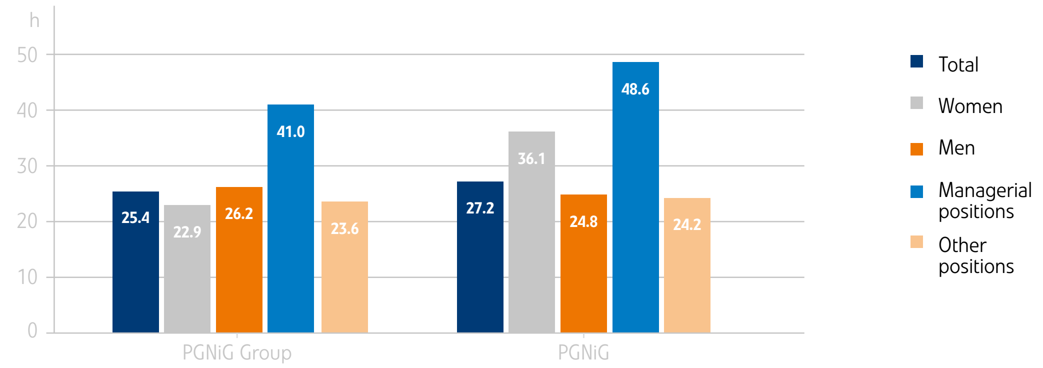
As the PGNiG Group's subsidiaries are engaged in a wide range of business activities, it is up to each of them to determine the type and extent of their staff training. The training management system in place is a vital tool in developing the competencies of our human resources. Our employees are given opportunities to improve their professional qualifications through a range of postgraduate university programmes, industry conferences, seminars and symposia, and also through occupational training.

Depending on their respective responsibilities and individual needs, employees can participate in a variety of training courses covering all aspects of a modern business, including risk management, legal environment analysis and customer service.

### Average number of training hours per employee

| Organisational unit | 2018 | 2017 |
|---|---|---|
| PGNiG | 27 h | 32 h |
| PGNiG Group | 25 h | 24 h |

### Average number of training hours per employee by category:




### Cooperation with trade unions

There are a number of trade unions active at PGNiG. PGNiG strives to ensure that social dialogue is based on the independence of all parties, legal compliance, as well as trust, willingness to compromise, and adherence to rules. There were no collective redundancies or disputes at PGNiG in 2018.

## Employees covered by the Collective Bargaining Agreement

| Organisational unit | 2018 | 2017 |
|---|---|---|
| PGNiG | 100.00% | 100.00% |
| PGNiG Group | 96.55% | 96.20% |

## Occupational health and safety

The PGNiG Group companies manage the areas of quality, environmental protection as well as occupational health and safety on the basis of the Group-wide QHSE. The QHSE Policy defines the goals and directions of the Group companies' activities in those areas and embodies their commitment to ensuring that products and services satisfy relevant quality requirements, building positive relations with customers, operating in compliance with applicable laws, and continuously enhancing the effectiveness of the quality, environmental protection, and OHS management systems. It is also the Company's commitment to take pro-active measures to prevent injuries and occupational diseases as well as environmental damage.

The PGNiG Group performs its tasks on a systemic basis, in accordance with the best standards defined in the international ISO 9001:2015,14001:2015 and OHSAS 18001:2007 standards, taking account of good industry practice.

All employees have access to OHS training and extensive medical care. Each employee has been instructed about the occupational risk level at their workplace. The training courses are conducted regularly, their frequency depending on the job and related risks. Increasing the level of safety is also the subject of annual meetings organised by the Company's Head Office, devoted to OHS conditions and experience sharing, and attended by representatives of external bodies, such as the National Labour Inspectorate.

PGNiG builds a safe work culture among employees, which translates into their appropriate behaviour, attitudes and actions. Measures are undertaken aimed at continuous improvement of safety of all persons staying on the Company's premises, including visitors.

### Work safety metrics

Safety-related activities are monitored continuously by way of:

- proactive monitoring, which consists in monitoring the effective implementation of procedures and measures designed to eliminate or minimise risks, defined at the planning phase. Its purpose is to assess the effectiveness of preventive measures;
- reactive monitoring, which provides information on loss events (accidents, failures and occupational diseases) and facilitates drawing appropriate conclusions and improving OHS management. It is a post-event preventive measure, designed to eliminate similar loss events in the future.

All accidents, events and conditions which are related to the Group's operations and which result in a loss or could potentially result in a loss are required to be reported. This applies to the operations of both the PGNiG branches and the PGNiG Group companies, as well as contractors and suppliers carrying out work for the PGNiG Group.

### Number of accidents at work at the PGNiG Group

In the PGNiG Group, the number of accidents at work fell by 3.4% in relation to 2017. The number of persons who were injured in accidents at work decreased by 0.5%. The following tables present detailed information on the accidents that occurred at the PGNiG Group and other OHS issues.

## F, SR, LDR, IR for the PGNiG Group in 2018

| Organisational unit | Accident frequency (F) | | | Severity rate (SR) | | | Lost day rate (LDR) | | | Injury rate (IR) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | M | total | W | M | total | W | M | total | W | M | total |
| **PGNiG** | **5.0** | **4.1** | **4.3** | **46.8** | **46.1** | **46.3** | **30.2** | **22.3** | **23.9** | **0.6** | **0.5** | **0.5** |
| GEOFIZYKA Toruń | - | 8.7 | 7.7 | - | 58.1 | 58.1 | - | 59.0 | 52.5 | - | 1.0 | 0.9 |
| Exalo Drilling | 4.7 | 17.4 | 15.9 | 6.0 | 93.8 | 90.8 | 3.6 | 193.7 | 173.0 | 0.6 | 2.1 | 1.9 |
| PGNiG Technologie | - | 18.1 | 16.0 | - | 37.6 | 37.6 | - | 76.4 | 68.6 | - | 2.0 | 1.8 |
| Polska Spółka Gazownictwa | 3.2 | 14.4 | 12.0 | 70.5 | 43.5 | 45.0 | 29.0 | 84.3 | 65.6 | 0.4 | 1.9 | 1.6 |
| PGNiG Serwis | 7.9 | - | 3.6 | 10.0 | - | 10.0 | 10.6 | - | 4.6 | 1.1 | - | 0.5 |
| GEOVITA | 12.7 | - | 10.1 | 15.5 | - | 15.5 | 24.0 | - | 19.0 | 1.6 | - | 1.2 |
| PGNiG TERMIKA | 10.4 | 4.3 | 5.3 | 20.5 | 36.3 | 31.0 | 1.4 | 1.0 | 1.1 | 1.4 | 0.6 | 0.7 |
| PGNiG Obrót Detaliczny | 0.6 | 1.1 | 0.8 | 22.0 | 62.0 | 42.0 | 1.7 | 8.3 | 4.1 | 0.1 | 0.1 | 0.1 |
| Gas Storage Poland | - | - | - | - | - | - | - | - | - | - | - | - |
| Polski Gaz TUW | - | - | - | - | - | - | - | - | - | - | - | - |
| **PGNiG Group** | **3.3** | **10.8** | **8.9** | **45.4** | **51.5** | **50.9** | **19.4** | **71.7** | **58.3** | **0.4** | **1.4** | **1.2** |

W – women

M – men

## Total number of accidents at the PGNiG Group in 2018

| Organisational unit | Total accidents | Casualties | including persons injured: | | Number of group accidents in total number of accidents | | Type of injury | | | Days lost | Indicators | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | in accidents at work | in accidents treated as accidents at work | number of accidents | number of persons | death | severe bodily injury | minor bodily injury | | incidence rate per 1,000 employees | severity rate (days of absence per accident) |
| **PGNiG** | **16** | **16** | **15** | **1** | **-** | **-** | **-** | **-** | **16** | **616** | **3.4** | **39** |
| GEOFIZYKA Toruń | 7 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 407 | 7.7 | 58.1 |
| Exalo Drilling | 29 | 29 | 29 | 0 | 0 | 0 | 0 | 0 | 29 | 2,633 | 15.9 | 90.8 |
| PGNiG Technologie | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 188 | 16.0 | 37.6 |
| PSG | 130 | 137 | 136 | 1 | 5 | 12 | 1 | 1 | 135 | 6,873 | 12.0 | 52.9 |
| PGNiG Serwis | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 3.6 | 10.0 |
| Geovita | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 31 | 10.1 | 15.5 |
| PGNiG TERMIKA | 6 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 186 | 5.3 | 31.0 |
| PGNiG OD | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 84 | 0.8 | 42.0 |
| GSP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 |
| Polski Gaz TUW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 |
| **Total PGNiG GROUP** | **197** | **209** | **203** | **6** | **7** | **19** | **1** | **1** | **207** | **11,337** | **8.4** | **58** |

## Diagnosed occupational diseases at the PGNiG Group in 2018

| Organisational unit | Total number of diseases | Occupational disease certificates issued by the National Sanitary Inspectorate | | | |
|---|---|---|---|---|---|
| | | Occupational loss of hearing | Vibration syndrome | Pneumoconiosis | Other |
| **PGNiG** | **2** | **1** | **-** | **-** | **1** |
| GEOFIZYKA Toruń | - | - | - | - | - |
| Exalo Drilling | 2 | 2 | - | - | - |
| PGNiG Technologie | 1 | 1 | - | - | - |
| Polska Spółka Gazownictwa | - | - | - | - | - |
| PGNiG Serwis | - | - | - | - | - |
| GEOVITA | - | - | - | - | - |
| PGNiG TERMIKA | - | - | - | - | - |
| PGNiG Obrót Detaliczny | - | - | - | - | - |
| Gas Storage Poland | - | - | - | - | - |
| Polski Gaz TUW | - | - | - | - | - |
| **PGNiG Group** | **5** | **4** | **-** | **-** | **1** |

## OHS-related initiatives (e.g. number of employees who received OHS training) in 2018

| Organisational unit | OHS training | | | | | Number of OHS meetings with technical and operational staff |
|---|---|---|---|---|---|---|
| | Induction training for new employees | Periodic | First aid training | Other | Total | |
| **PGNiG** | **210** | **2,613** | **282** | **171** | **3,276** | **70** |
| GEOFIZYKA Toruń | 50 | 329 | 394 | 228 | 1,001 | ad hoc |
| Exalo Drilling | 233 | 1251 | 77 | 2 | 1,563 | 12 |
| PGNiG Technologie | 10 | 97 | - | - | 107 | - |
| Polska Spółka Gazownictwa | 772 | 8,288 | 763 | - | 9,823 | 143 |
| PGNiG Serwis | 70 | 96 | 11 | - | 177 | 5 |
| GEOVITA | 61 | 63 | 1 | 1 | 126 | - |
| PGNiG TERMIKA | 149 | 716 | 5 | 10 | 880 | 38 |
| PGNiG Obrót Detaliczny | 331 | 393 | - | 1 | 725 | - |
| Gas Storage Poland | 8 | 22 | - | 2 | 32 | 23 |
| Polski Gaz TUW | 8 | 20 | - | - | 28 | - |
| **PGNiG Group** | **1,902** | **13,888** | **1,533** | **415** | **17,738** | **291** |

# Society

In PGNiG, we believe that long-term business relations and market success require operations that create value for the Company, the Group and all of its stakeholders.

## Social Communication and investment dialogue

Local communities are an important stakeholder for us. As part of our strategic approach to managing relations with this group of stakeholders, we respond to the real needs and expectations of individual communities, and we support their economic growth.

Effective cooperation with social and business partners based on the principles of partnership and dialogue is one of the foundations of Sustainable development strategy and Group's social responsibility. The strategic goal is to conduct a dialogue with local communities in accordance with the best standards developed in the industry and within the PGNiG Group.

For more on PGNiG Group Sustainable Development Strategy for 2017–2022 see p. 65.

### Good neighbor

PGNiG makes every effort to identify a given community's current needs and expectations. Before launching operations in a location, we meet with the local authorities to explain the purpose and scope of works related to the planned investment. We have a highly customized approach to every community – depending on the place of conducting works or negotiations, we set the action plan in consultation with local authorities. In our communication, we rely on social dialogue as a way of communication that allows our stakeholders to understand our activities. PGNiG builds good neighborly relations also through sponsoring activities in the place of conducting works.

Our employees are a very important part of local communities where they play the role of PGNiG's informal ambassadors. It is their direct contacts and involvement in local initiatives, membership in the employee councils and trade unions has a direct impact on our image and contributes to the development of a given community.

## Social activity

### PGNiG Ignacy Łukasiewicz Foundation

The Group conducts its charity activities mainly through the PGNiG Ignacy Łukasiewicz Foundation. The Foundation's principal mission is to support projects designed to preserve and develop national heritage and culture, as well as promote knowledge and education in the field of fundamental/technical sciences and sports. The Foundation also seeks to promote the history of Poland, build national identity and commemorate Polish heroes.

The Foundation's activity is based on cooperation with programme partners and implementation of its own projects, which helps it reach those who most need support, irrespective of where they are in Poland.

In 2018, the PGNiG Foundation focused on three proprietary programmes: 'To Be Like Ignacy', 'We Warm Up Polish Hearts' and 'Air without Rubbish'.

### „Być jak Ignacy"('To Be Like Ignacy')

The programme promotes science among primary school pupils, giving them an opportunity to learn about the patron of the Ignacy Łukasiewicz Foundation and other distinguished Polish scientists. The main element of the programme is a website featuring an interactive comic strip and educational videos showing scientific experiments.

As part of the programme, the Foundation holds a competition called 'Ignacy's School of Science'. As at the end of 2018, more than 1,250 schools from all over Poland enrolled in its third edition. The competition judges will select 16 schools (one from each province) which find the most interesting way to organise and document the work of a specially set up science club and prepare a project. To assist teachers in running such clubs, the Foundation prepared lesson plans for 0–3 and 4–6 forms. The number of schools participating in the project's previous edition was over 650.

### A few facts about Ignacy Lukasiewicz

- **He was the first to distill kerosene from crude oil and use it for lighting.**
- **Inventor of the kerosene lamp.**
- **Creator of oil and refining industry.**
- **Co-founder and longstanding director of the first oil field in Bóbrka.**
- **Independence activist, philanthropist, community worker, creator of the concept of social care in oil industry.**
- **Recipient of the Order of St. Gregory the Great, papal chamberlain, member of the Diet of Galicia and Lodomeria.**

## „Rozgrzewamy Polskie Serca" ('We Warm Up Polish Hearts')

As part of the programme, the Foundation supports educational and film making projects, initiatives to aid war veterans, and a variety of cultural activities. The Foundation supports the memory of so-called Cursed Soldiers, heroes of the anti-communist underground. In March 2018, the first pilgrimage of Cursed Soldiers, initiated by the Foundation, arrived at the Jasna Góra Monastery.

The programme also features the 'Debt of Gratitude' project run in association with PGNiG Obrót Detaliczny. In addition to Warsaw Uprising veterans, the project also supports miners who went on the historical strike at the Wujek coal mine. Polish heroes receive direct financial support of up to PLN 900 a year to pay their gas bills, which in many cases fully covers the charge.

In 2018, as part of the 'We Warm Up Polish Hearts' project, support was also extended to the Foundation for Civic Space and Social Affairs in connection with its 'Recovering Forgotten History' programme that has been run for many years with the aim of correcting the content of historical books and publications issued around the world and devoted to the history of Poland and Central and Eastern Europe.

## „Powietrze bez Śmieci" ('Air without Rubbish')

The Foundation joined in efforts to tackle the problem of smog in Poland and launched, at the end of 2017, together with the PGNiG companies, the 'Air without Rubbish' educational programme. One arm of the programme was a campaign to raise Poles' awareness of smog through advertising, social media and a website. The other arm were two competitions carried out in 2018 – one where residents could vote to win a science playground for construction in their area, and the other, addressed to children from primary school forms 1 to 3, was where pupils could win equipment for a biology laboratory. Teachers conducted a series of lessons about smog and presented a special report based on these lessons. In 2018, over 170 municipalities and nearly 1,000 schools entered the programme.

## Other activities of the Foundation

Another initiative of the Foundation was the establishment of an Educational Apiary - Energy from Honey. The project combines environmental protection with education, as educational workshops on bees and urban beekeeping are held there in spring and summer. The apiary, set up in 2017, currently numbers 24 hives.

A financial donation was made to the Ignacy Łukasiewicz Museum of Oil and Gas Industry Foundation in Bóbrka to support the museum's activities. Being one of its main sponsors, PGNiG supports the cradle of the oil industry – the oldest petroleum production site, as well as the heritage of the magnificent Polish inventor and philanthropist Ignacy Łukasiewicz.

## Scholarships

The 'We Encourage Learning' scholarship programme was launched in 2009 by PGNiG TERMIKA SA to support the most talented third- and fourth-grade students of secondary schools. In 2018, the PGNiG Ignacy Łukasiewicz Foundation granted ten one-off scholarships: three for third-grade students of an energy technician class, four for fourth-grade students of an energy technician class, and three for fourth-grade students of an electrical technician class.

The Foundation also funded scholarships for children of tragically deceased employees of the PGNiG Group. Currently, the number of the Foundation's scholarship holders is 13.

## Other CSR activities

Other projects carried out in 2018 in pursuit of the Sustainable development strategy included:

- Health Day – the second edition of a programme of preventive medical examinations for employees of the PGNiG Head Office, including free cardiology and cancer tests and anti-stress workshops. In 2018, the campaign covered 300 people;
- A Drop of Energy – in 2018, the PGNiG Head Office held two blood donation sessions, and in autumn the Company participated in the national blood donation session of the energy industry 'A Drop of Energy for Independent Poland'. Moreover, blood donation sessions for employees were also organised by the PGNiG Branches in Zielona Góra and

Sanok, along with other Group companies;
- 'Oil Miner in School and Kindergarten' – a volunteer educational project in which employees of the PGNiG Zielona Góra Branch and PGNiG Geology and Hydrocarbon Production Branch are involved. The aim is to promote the profession of an oil miner through structured presentations in schools and kindergartens during dedicated events or St. Barbara's Day, the patron saint of miners, falling on December 4th. In 2018, over 160 volunteer miners visited 243 schools and kindergartens, having met with more than 18 thousand children.

For more on Model of value creation see p. 6.

### Gas Industry Museum

The Gas Industry Museum in Warsaw, located on the premises of the Wola Gas Works, which today houses the headquarters of PGNiG, is one of the most prominent examples of industrial architecture from the late 19th and early 20th centuries. In 2018, the museum was visited by nearly four thousand people, including more than 30 school groups taking part in museums classes, 20 groups of children and teenagers under the Summer and Winter in the City programme, and more than 20 organised groups of adults (including senior students of the University of the Third Age and tourist groups). The museum also participated in the Long Night of Museums, attracting more than 900 people to its historical space during a single evening.

In addition, in 2018, conceptual work was initiated on the modernization of the Museum to open it to a wider group of visitors and to present exhibits and topics related to „Gasworks in Wola" or the history of PGNiG and the gas industry in a modern manner, in accordance with the latest museum and exhibition trends.

### RESPECT Index

In 2018, PGNiG passed its twelfth successful assessment for inclusion in the index of socially responsible companies. Since the very inception of RESPECT Index, PGNiG has been a member of this elite group of socially responsible companies listed on the Warsaw Stock Exchange.

Eessential condition for inclusion in the index is social responsibility towards the environment, local communities and employees, which is assessed through a survey reviewed by Deloitte, the project auditor.

### Social capital in numbers

In 2018, over 75 thousand primary and secondary school students and more than 500 university students were direct recipients or beneficiaries of CSR projects run by the PGNiG Ignacy Łukasiewicz Foundation and other PGNiG Group entities (including, in particular, PGNiG, PGNiG OD, TERMIKA and PSG). In 2018, the PGNiG Group companies and the PGNiG Foundation provided support to over 400 initiatives and events, compared with over 300 in 2017.

## Sponsorship

For many years, PGNiG has been involved in sponsorship activities leading to the development of social capital, with sport, culture and education as the three focal areas of the Group's sponsorship activity. In 2018, particular importance was also attached to the celebration of the 100th anniversary of Poland's independence.

### Sports sponsorship

Sports sponsorship of is an important part of PGNiG's marketing efforts. For many years, the organisation's comprehensive support has focused on one professional sports discipline – handball, which is based on strategic thinking, unlocking the players' potential and dynamic action, which perfectly reflects the Company's nature.

In 2018, PGNiG supported the following initiatives:
- The Polish Handball Association – PGNiG has been the strategic sponsor of Polish handball since 2010. Currently, support is provided to senior and junior national women's and men's teams. In addition, celebrations of the hundred years' anniversary of Polish handball were organised;
- Superliga Sp. z o.o. – the Company is also a title sponsor of the men's league. PGNiG Superliga is the operator of Poland's top-class handball league;
- I Love Handball at 'Orlik' – a series of handball tournaments held in 16 provinces with the support of local sports enthusiasts at modern sports facilities built in recent years under the Polish government-sponsored 'Orlik' project.

### Celebrations of the hundredth anniversary of Poland's independence

PGNiG also took part in a number of patriotic initiatives in connection with the hundredth anniversary of the restoration of Poland's independence. In 2018, the Group launched its special logo highlighting Poland's national colours, which was used until the end of the year.

As far as cultural and patriotic events are concerned, the Company lent its support to:
- Concert to Celebrate the Hundredth Anniversary of the Restoration of Poland's Independence – the project was designed to be a part of the centenary celebrations in the Kingdom of Denmark;
- Tenth anniversary of Poland's membership in the International Energy Agency; the Hundredth Anniversary of the Restoration of Poland's Independence;
- Special reception to celebrate the hundredth anniversary of the restoration of Poland's independence in Washington, DC – over 800 guests took part in the reception hosted on November 13th by the United States Institute of Peace;
- Concert: The 18th century classics masters performed by Capella Cracoviensis – on December 18th 2018 PGNiG, jointly with the Polish Institute in Moscow, helped organise a concert at the Catholic Cathedral in Moscow, to mark the closing of celebrations of the hundredth anniversary of Poland's independence and the thirtieth anniversary of the Polish Institute in Moscow;
- New Year Concert of Christmas Carols – PGNiG joined in the celebrations of the centenary of Poland's independence by participating in the promotion of the 'Peace to the world, joy to the people' concert of Christmas carols by the Polish Army Artistic Group.

# Environment

The PGNiG Group strives to minimise its negative environmental footprint and adopts pro-environmental measures in its key business areas.

## Environmental management system at the PGNiG Group

PGNiG's environmental management is carried out as part of the integrated Quality, Environment and OHS Management (QHSE) System, implemented in 2016 along with the QHSE Policy applied consistently across the Group.

In the document, the Company's Management Board declared that all operations would be carried out with due consideration to meeting the quality requirements for our products and services, fostering good customer relations, mitigating our environmental impacts, and preventing injuries and occupational diseases.

The QHSE Management System is based on international ISO standards: 9001:2015, 14001:2015 and OHSAS 18001:2007, taking into account good HSE practices applying to exploration for and production and tankless storage of hydrocarbons, as well as to the processing and transmission of natural gas, which makes the system highly effective.

One of the key requirements set out in ISO 14001 is to identify any emissions to the environment, referred to as environmental aspects.

A special system is applied to monitor greenhouse gas emissions and $CO_2$ emissions from the EU ETS-covered installations. Emissions are monitored based on the adopted monitoring plans, which are subject to approval under $CO_2$ emission allowance decisions.

## Land restoration and surveying of non-productive assets

In 2018, a procedure was carried out to update the assessment of the condition of the surface on the properties classified as non-production assets, and tests were commenced in 24 locations.

On the properties located in Barlinek and Szprotawa, new tests were performed and the possibility of applying the biological method of remediation was evaluated. However, the type of soil and the hydrological conditions found on site made the effective application of that method impossible, and new options for the remediation process were identified.

Furthermore, the Company also monitored the soil and water environment of the reclaimed landfill site in Zabrze-Biskupice.

## Well decommissioning

In 2018, wells were drilled and decommissioned in the following locations in Poland: Kotlin, Sośnina and Chmielnik, all of them being exploration wells.

In addition, one test well in Goszczanów was also decommissioned. The wells were abandoned since no industrial hydrocarbon flow was obtained, or due to the purely exploratory nature of the work. In 2018, a decision was made to abandon 96 wells drilled in previous years in the in the Lubuskie, Wielkopolskie, Pomorskie, Małopolskie and Podkarpackie provinces.

## Underground Gas Storage Facilities

In recent years, environmental monitoring was carried out in and around the Mogilno CGSF and Kosakowo CGSF. The aim was to identify possible impacts related to the discharge of salt brine into the Puck Bay in the case of the Kosakowo CGSF and operation of the onshore part of the facility in the case of the Kosakowo CGSF and Mogilno CGSF.

Results of the environmental monitoring indicate that activities consisting in the construction and operation of underground gas storage facilities have no adverse effects on individual components of the natural environment.

In 2018, Gas Storage Poland Sp. z o.o. adopted the Policy for an integrated quality, environmental, and occupational health and safety management system at GSP, under which the company committed to implement measures based on the principles of sustainable development and corporate social responsibility, and to continuously improve its integrated quality, environmental and OHS management system compliant with the ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2017 standards.

## Raw materials and consumables used

### Consumption of natural gas, hard coal and lignite at the PGNiG Group in 2016–2018

| Total raw materials and consumables used | 2018 | | 2017 | | 2016 | |
|---|---|---|---|---|---|---|
| | [mcm] | [million Mg] | [mcm] | [million Mg] | [mcm] | [million Mg] |
| Natural gas | 323.4 | - | 376.5 | - | 152.8 | - |
| including PGNiG | 292.1 | - | 270.2 | - | 56.4 | - |
| Hard coal | - | 2.9 | - | 2.9 | - | 2.9 |
| Lignite | - | - | - | - | - | - |

Non-renewable resources are the main materials used in the production of electricity and heat at the PGNiG Group. Coal is used to produce electricity and heat mainly in the PGNiG TERMIKA Group's CHP plants, while natural gas is used in the other companies for heating buildings, in heat and electricity production (including for electricity production in cogeneration and trigeneration) as well as in industrial processes as a fuel for oil heaters in desulfurization and desalination, fuel for boilers, gas compression engines, gas turbines, and post-combustion of waste gases.

In 2018, PGNiG's gas consumption rose due to its flaring in the course of extraction activities. Most of the companies try to reduce gas consumption by modernising their heating installations.

### Energy consumption at the PGNiG Group in 2016–2018

| Energy consumption | | 2018 PGNiG Group | 2018 PGNiG | 2017 PGNiG Group | 2017 PGNiG | 2016 PGNiG Group |
|---|---|---|---|---|---|---|
| Generated internally from non-renewable sources | Electricity [GWh] | 837 | 1 | 894 | 74 | 838 |
| | Heat [MJ] | 3,974,234,394 | 3,494,348,115 | 4,890,062,269 | 4,478,730,220 | 3,961,884,022 |
| | Steam [MJ] | 4,652,289 | 285,289 | 43,096,683 | 37,480,683 | 38,745,305 |
| | Cooling [MJ] | 2,180,298 | - | 2,193,088 | - | 2,220,960 |
| Generated internally from renewable sources | Electricity [GWh] | 21.9 | - | 27.0 | - | 19.2 |
| | Heat [MJ] | 10,264,389 | - | 3.5 | - | 2.9 |
| | Steam [MJ] | - | - | - | - | - |
| | Cooling [MJ] | - | - | - | - | - |
| Purchased from the grid | Electricity [GWh] | 16,706 | - | 4.6 | - | 2.7 |

In 2018, the majority of the PGNiG Group companies consumed mainly energy generated internally on the basis of non-renewable resources. The other Group members have signed contracts with energy companies. The volume of energy used is correlated with the Group's growth. The PGNiG Group implements pro-environmental solutions, such as cogeneration and trigeneration plants owned and operated by some of the companies, and photovoltaic systems. At Norway-based PUN all of the energy consumed is generated by zero-emission hydroelectric power plants.

### Reduction of energy consumption and energy requirements of products and services

As part of its Energy Management System, the PGNiG Group strives to reduce its energy consumption and lower the energy requirements of products and services. Construction of a CCGT unit at the Żerań CHP Plant was a major energy efficiency project in 2018.

Individual energy efficiency projects pursued at PGNiG are aligned with the process of acquiring energy efficiency certificates (the 'white certificates'). Those projects include, inter alia, energy recovery in industrial processes (the Odolanów Nitrogen Rejection Unit), also through installing or upgrading systems converting industrial waste gases into electricity or heat, which should generate energy savings estimated at over 300,000 MWh annually.

Efforts made by PGNiG Group companies also contribute to overall energy efficiency improvement by reducing the amount of energy consumed by individuals, legal entities and unincorporated organisational units. It is an effect of the rising awareness of the importance of sustainable use of energy, driven by educational campaigns and information disseminated through the Internet, for instance at: http://pgnig.pl/dla-domu/poradnik/jak-oszczedzac-energie.

Moreover, the PGNiG Group launched a project to roll out energy management systems across the Group.

### Water consumption at the PGNiG Group in 2016–2018, by source

| Water (mcm) | 2018 PGNiG Group | 2018 PGNiG | 2017 PGNiG Group | 2017 PGNiG | 2016 PGNiG Group |
|---|---|---|---|---|---|
| surface water withdrawn from own intake points | 158.3 | - | 156.2 | - | 159.5 |
| ground water withdrawn from own intake points | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 |
| rainwater | - | - | - | - | - |
| purchased from the mains, surface and ground water intakes | 2.0 | 0.1 | 1.6 | 0.1 | 1.7 |

Water consumption in a given year will depend on the extent of exploration work, capex projects, and the Group companies' in-house energy-related demand. To make sure that neither the quality nor quantity of water bodies are affected by the Group's activity, we evaluate our impact on ground and surface water bodies and take action to monitor and protect water resources. 2018 saw a slight increase in water consumption.

EU ETS - the European Union's Emission Trading System.

## Direct $CO_2$ emissions from the EU ETS-covered installations at the PGNiG Group in 2017–2018

| EU ETS installation | National Allocation Plan (KPRU) No. | 2018 | | | 2017 | | |
|---|---|---|---|---|---|---|---|
| | | Emission allowances ['000 Mg] | Emissions in 2018 ['000 Mg] | Surplus/ (Deficit) ['000 Mg] | Emission allowances ['000 Mg] | Emissions in 2017 ['000 Mg] | Surplus/ (Deficit) ['000 Mg] |
| Mogilno CGSF | PL-0898-08 | 4.3 | 10.4 | (6.1) | 5.1 | 14.0 | (8.9) |
| Odolanów I (boiler house) | 0562-05 | 15.3 | 28.2 | (12.9) | 18.1 | 30.9 | (12.8) |
| Odolanów II (compressor station) | 0950-08 | - | - | 0.0 | - | - | - |
| Lubiatów Oil and Gas Production Facility, Central Facility | PL-1070-13 | 40.8 | 61.8 | (21.0) | 41.6 | 55.4 | (13.85) |
| Wierzchowice UGSF | PL-1072-13 | 0.0 | 54.7 | (54.7) | - | 42.6 | (42.6) |
| Kosakowo CGSF | PL-1076-13 | 3.5 | 4.3 | (0.8) | - | 2.9 | (2.9) |
| Dębno Oil and Gas Production Facility, Central Facility | PL-0563-05 | 25.3 | 32.6 | (7.3) | 25.8 | 29.7 | (3.9) |
| Pruszków CHPP | PL-0026-05 | 32.4 | 127.7 | (95.3) | 37.7 | 133.4 | (95.7) |
| Siekierki CHPP | PL-0027-05 | 959.5 | 3,127.6 | (2,168.1) | 1,059.3 | 3,047.2 | (1,987.9) |
| Żerań CHPP | PL-0028-05 | 703.5 | 2,224.9 | (1,521.4) | 782.8 | 2,339.0 | (1,556.2) |
| Kawęczyn CHPP | PL-0124-05 | 31.4 | 94 | (62.6) | 37.1 | 95.7 | (58.6) |
| Wola HP | PL-0125-05 | 2.4 | 4.4 | (2.0) | 0.7 | 8.6 | (7.9) |
| CM Racibórz | 0297-05 | 13.1 | 47.4 | (34.3) | 17.5 | 50.0 | (32.5) |
| CM Wodzisław Śląski | 0298-05 | 8.5 | 33.95 | (25.4) | 11.7 | 34.7 | (23.0) |
| CM Żory | 0299-05 | 10.5 | 35.16 | (24.6) | 13.6 | 34.6 | (21.0) |
| PTEP SA Moszczenica CHPP | 0083-05 | 41.5 | 66.5 | (25.0) | 49.7 | 77.3 | (27.6) |
| PTEP SA Zofiówka CHPP | 0084-05 | 176.4 | 216.01 | (39.6) | 147.1 | 235.2 | (88.1) |
| PTEP SA Pniówek CHPP | 0085-05 | 26.7 | 80.02 | (53.4) | 30.5 | 77.4 | (46.9) |
| PTEP SA Suszec CHPP | 0086-05 | 11.2 | 35 | (23.8) | 12.4 | 34.7 | (22.3) |
| **Total** | | **2,106.2** | **6,284.7** | **(4,180.8)** | **2,290.7** | **6,343.3** | **(4,052.5)** |

Currently, 18 installations of the PGNiG Group are covered by the EU ETS. In 2018, the volume of carbon dioxide emissions amounted to 6,284,707 Mg and was slightly lower than in previous years (down 1%). As free allowances of $CO_2$ emission rights decrease year by year, there is a need to purchase additional emission rights.

### Reduction of greenhouse gas (GHG) emissions

The PGNiG Group has been steadily reducing the amount of pollutants generated by transportation, combustion processes in heat sources, fuel reloading and industrial processes (gas combustion at flares, gas venting, emissions from compressor stations and compressors). The methods of reducing emissions of pollutants into the air include using gas as a low-emission fuel, monitoring fuel consumption, reducing the energy intensity of industrial processes and modernising or replacing heat sources used for the Group's own needs.

### NOx, SOx, and other significant air emissions

Oil and gas exploration and production activities, gas distribution, and modernisation, maintenance and repair works of the PGNiG Group generate air pollutants such as gases ($SO_2$, $NO_x$, CO, $CO_2$, $CH_4$), particulate matter, hydrocarbons, aldehydes, alcohols, acids, heavy metals, metallic and non-metallic elements. Methane emissions were down year on year in 2018 thanks to on-going efforts taken to identify and eliminate potential gas leakages.In 2018, air emissions of pollutants other than CO and $CO_2$ were mostly on decline as a result of using more advanced coal combustion technologies.

## Implementation of the Geo-Metan project

It assumes a reduction of $CH_4$ emissions to the atmosphere. The idea of the project is the extraction of methane before the exploitation of hard coal, which in the end is supposed to result in lower methane emission during hard coal mining. In addition, methane can be effectively used by PGNiG as an unconventional source of natural gas.

### PGNiG Group's air polluting emissions in 2016-2018

| Emissions of gases, particulates and substances (Mg) | 2018 | | 2017 | | 2016 |
|---|---|---|---|---|---|
| | PGNiG Group | PGNiG | PGNiG Group | PGNiG | PGNiG Group |
| $CO_2$ | 6,557,509 | 377,573 | 6,577,924 | 338,122 | 6,411,274 |
| $CO_2$ biomass combustion | 227,901 | - | 293,710 | - | 240,323 |
| $CH_4$ | 12,693 | 10,437 | 14,424 | 9,586 | 18,911 |
| $SO_2$ | 10,757 | 1,733 | 12,452 | 1,725 | 14,152 |
| $NO_x$/$NO_2$ | 6,339 | 445 | 6,377 | 355 | 6,782 |
| CO | 2,094 | 316 | 2,216 | 361 | 2,100 |
| Total particulates | 672 | 4 | 786 | 2 | 1,099 |
| Total hydrocarbons | 261 | 193 | 260 | 198 | 264 |
| $H_2S$ | 0.2 | 0.2 | - | - | - |
| **Total** | **6,818,226** | **390,701** | **6,908,149** | **350,349** | **6,694,905** |

### Total wastewater discharge by quality and destination in 2016–2018

| Wastewater | 2018 | | 2017 | | 2016 |
|---|---|---|---|---|---|
| | PGNiG Group | PGNiG | PGNiG Group | PGNiG | PGNiG Group |
| Domestic [bcm] | 361,021 | 268 | 348,342 | 262 | 276,655 |
| Municipal [bcm] | 116,844 | 89,200 | 108,113 | 90,955 | 104,183 |
| Industrial [bcm] | 6,448,565 | 10,879 | 6,652,290 | 15,248 | 6,311,583 |
| Rainwater and snowmelt [bcm] | 1,381,540 | 320,007 | 1,497,638 | 288,197 | 1,209,936 |
| Other [bcm] | 151,742,533 | - | 149,839,142 | - | 154,527,215 |

## Applied standards, methodologies and assumptions

Wastewater generated by the PGNiG Group companies is discharged into the sewage system, surface water or soil based on the water permits obtained. Domestic and industrial wastewater is discharged into the sewage system. Rainwater from plant premises and access roads is discharged into the municipal sewage system, as well as into surface water and soil. The PGNiG TERMIKA Group companies account for a large share in the volume of generated wastewater as they use water for cooling purposes.

## Water recycled and reused

At PGNiG TERMIKA, the largest stream of water is used to cool production units. The Siekierki and Żerań CHP Plants have an open cooling system, where water is discharged back to the river after absorption of heat. The cooling water recirculated back to the river is classified as wastewater in accordance with the Water Law, although it should be noted that the only 'pollutant' in cooling water is the added heat load.

At the Siekierki CHP Plant, water used for cooling is drawn from and returned to the Vistula, while the Żerań CHP Plant draws water either from the Vistula or the Żerań Canal and discharges cooling water to the Żerań Canal.

## Quantity of water used for cooling and discharged back to water bodies in 2018 (cubic meters)

| Water used for cooling | 2018 |
|---|---|
| Siekierki CHP Plant | 132,467,701 |
| Żerań CHP Plant | 19,238,912 |

In addition to cooling, CHP plants use water to fill up the heating network and steam circulation system without returning it to water bodies; however, it is no longer raw water as in the case of cooling. The water used to fill up both the heating and steam circulation systems must reach specified parameters and is therefore prepared in water pre-treatment stations. Effluents produced in the process are subsequently treated at in-house industrial wastewater treatment plants.

On the other hand, Exalo Drilling SA uses recycled water to drill wells. Such water is used to produce the company's key products and services.

## Drilling mud,

which is a liquid used to drill boreholes. During drilling, mud is used to clean the well bottom and to flush drill cuttings to the surface. It is also used to cool the drill bit and remove any drill cutting deposited on it. After drilling, mud is transported to special treatment stations and is either recycled or disposed of (if recycling is no longer an option).

## The potential for water recovery and reuse in the production of key products and services of Exalo Drilling

| Water used and recovered | 2018 |
|---|---|
| Estimated amount of water used in the projects | 12,903 cm |
| Amount of water recovered through flocculation or reuse of drilling mud | 2,415 cm |
| Annual water recovery (%) | 18.71 % |
| Average annual water recovery per project (%) | 7.1 % |
| Average water recovery for projects (%) | from 5.3 % to 45.2 % |

## Spills

In 2018, eighteen spills to the environment were reported, including one leakage of diesel oil from a tanker and two spills of hydraulic oil (330 litres in total). Fifteen spills were caused by network leakage.

## Waste by type and disposal method

The production of hazardous and non-hazardous waste is unavoidable in activities related to production and processing of crude oil and natural gas. However, deployment of latest technologies and use of environmentally-friendly materials and products help minimise the volume of generated waste.

Effective waste management strives to reuse waste. To that end, waste is first selectively collected and then recovered to produce recycled materials ready for reuse. Hazardous waste which must be disposed of is handed over to licensed waste collection companies for subsequent disposal, as PGNiG is not authorised to transport such waste. The amount of waste generated in a given period depends on the volume of exploration and production work and the type of investments and upgrade projects carried out by Group companies.

Waste collection companies are verified for compliance with applicable laws in terms of holding relevant waste management authorisations, with priority given to rational use of natural resources and sustainable management of waste.

As regards municipal waste, in accordance with the current regulations it is collected by municipalities or by designated entities entered in the register of regulated business activities or performing the function of municipal organisational units, subject to relevant agreements.

In 2018, all the PGNiG Group companies reported decreases in the volumes of generated waste, an effect mainly of the introduction of new technologies and use of environment-friendly materials and products. The PGNiG Group companies also run programmes raising the awareness of the need to sort waste. The other waste is recycled by specialised external operators.

## Waste management methods used at the PGNiG Group in 2016–2018

| Other waste excluding municipal waste | | Recovered | | Disposed of [Mg] | Landfilled [Mg] |
|---|---|---|---|---|---|
| | | Recycling [Mg] | Other recovery processes [Mg] | | |
| **2018** | | | | | |
| Hazardous waste | PGNiG Group | 417.8 | 809.3 | 757.5 | 8.8 |
| | PGNiG | 70.2 | 65.7 | 604.8 | 8.8 |
| Non-hazardous waste | PGNiG Group | 516,823.3 | 2 951.9 | 3,194.2 | 177.3 |
| | PGNiG | 1,042.4 | 18.1 | 2,856.5 | 171.4 |
| **2017** | | | | | |
| Hazardous waste | PGNiG Group | 282.0 | 468.7 | 4,510.6 | - |
| | PGNiG | 39.6 | 402.5 | 3,020.8 | - |
| Non-hazardous waste | PGNiG Group | 572,134.6 | 3,286.9 | 1,235.7 | 22.6 |
| | PGNiG | 1,139.7 | 2,961.0 | 937.4 | - |
| **2016** | | | | | |
| Hazardous waste | PGNiG Group | 1,646.2 | 690.9 | 584.1 | 49.0 |
| | PGNiG | 1,061.9 | 15.2 | 521.4 | 49.0 |
| Non-hazardous waste | PGNiG Group | 565,664.6 | 5,615.1 | 1,905.4 | 389.7 |
| | PGNiG | 4,998.3 | 7.8 | 1,763.6 | 353.4 |

## Method of drilling waste management in 2016–2018

| Drilling waste | | Stored in waste disposal facilities [Mg] | Recovered [Mg] | Disposed of [Mg] | Reused [Mg] | Stored [Mg] | Stored in rock mass [Mg] |
|---|---|---|---|---|---|---|---|
| **2018** | | | | | | | |
| Hazardous waste | PGNiG Group | - | 1,189.19 | 1,134.23 | - | - | - |
| | PGNiG | - | 1,189.19 | 499.32 | - | - | - |
| Non-hazardous waste | PGNiG Group | 1,884.58 | 66,786.92 | 7,827.23 | - | 120.91 | 6,092.36 |
| | PGNiG | - | 54,575.68 | 7,796.03 | - | 120.91 | 6,092.36 |
| **2017** | | | | | | | |
| Hazardous waste | PGNiG Group | - | 1,314.1 | 77.2 | - | - | - |
| | PGNiG | - | 1,314.1 | 77.2 | - | - | - |
| Non-hazardous waste | PGNiG Group | - | 92,131.3 | 9,527.6 | - | 53.6 | 3,256.9 |
| | PGNiG | - | 47,361.4 | 9,511.6 | - | 53.6 | 3,256.9 |
| **2016** | | | | | | | |
| Hazardous waste | PGNiG Group | - | 1,459.6 | 98.0 | - | - | - |
| | PGNiG | - | 1,459.6 | - | - | - | - |
| Non-hazardous waste | PGNiG Group | - | 67,750.1 | 189.7 | - | - | 28,371.8 |
| | PGNiG | - | 58,710.9 | - | - | - | 28,371.8 |

## Environmental protection expenditure at the PGNiG Group in 2016–2018

| | 2018 | 2017 | 2016 |
|---|---|---|---|
| Environmental protection investments including modernizations and repairs (PLN million) | 1,328.8 | 1,003.5 | 139.5 |
| of which PGNiG | 1.5 | 3.9 | 3.5 |

In 2018, the PGNiG Group reported a year-on-year rise in environmental protection expenditure. Projects carried out during the year included modernisation of boiler houses and thermo-modernisation of buildings, which directly contributes to air protection. Expenditure was also incurred on water protection and waste management.

The PGNiG TERMIKA Group companies planned their environmental expenditure to reach PLN 1,445.6 in 2019–2021, in view of the entry into force of stricter environmental requirements resulting from the BAT Conclusions. A major part of that amount is earmarked for the construction of new generation units (CCGT unit, two gas-fired peak-load boiler houses at the Żerań CHPP, and construction of new sources at the Pruszków CHPP) to replace the obsolete ones which do not comply with BAT requirements. The planned investments in existing sources will be made mainly to construct equipment reducing pollutant emissions ($NO_x$ reduction, desulfurisation and particle collection solutions) to the levels compliant with BAT.

# Strategy

# Mission and vision

See also:
www.en.pgnig.pl/pgnig/mission-and-strategy

The key objective of the 'PGNiG Group Strategy for 2017–2022 with an Outlook Until 2026' is to increase the Group's value and ensure its financial stability. To achieve that goal, the Group will need to build a strong competitive position while promoting the advancement of the Polish gas market and expanding its gas networks to unserved areas across the country.

## Mission statement

We are a trustworthy supplier of energy for households and businesses

Trustworthy: the customers can depend on premium quality and reliability of our services

Energy supplier: our customers are offered a full range of energy products (gas + electricity + heat + other/services)

Households and businesses: we care for and value all our customers: households, businesses, and institutions

## Vision

We are a responsible and effective provider of innovative energy solutions

Responsibly: we act transparently, in line with the principles of corporate social responsibility

Effectively: we have implemented process and cost optimisation measures

Innovative solutions: we are an innovation leader in the energy sector

## Primary objective

Increase the PGNiG Group's value and ensure its financial stability

Value growth: our primary ambition is to create added value for our shareholders and customers

Financial stability: we seek to secure long-term financial stability and creditworthiness

# Challenges

The operations of the PGNiG Group largely depend on external factors which also pose challenges for the Group. Those factors include:

**1. Developments in the global fuel and energy markets, including depressed oil prices, gas price volatility and rapid expansion of the LNG market**

In 2018, changes taking place in the Polish gas market were accompanied by price rises elsewhere in Europe, with gas prices on European markets becoming increasingly detached from prices of oil products in recent years. Oil prices fell towards the end of 2018, with serious implications for the PGNiG Group, as this is bound to reduce the cost of gas under long-term contracts and make imports more attractive on the one hand, but on the other hand this will adversely affect the economics of foreign upstream projects with reserves dominated by oil, leading to a lower value of the Exploration and Production segment's foreign operations.

LNG infrastructure – both export capacities (liquefaction plants, mainly in North America and Australia) and import capacities – has been expanding rapidly around the world in recent years. Earlier predictions of an LNG glut proved wrong as LNG demand saw strong growth in Asia, notably in China. However, the abundant supply helped to level out differences in LNG prices between the North Atlantic region and Far East markets. Prices in Asia remain relatively higher, reflecting additional freight costs that would need to be incurred to bring LNG cargoes to Asia. As a global LNG market player, PGNiG will be able to optimise its long-term gas portfolio and secure additional gas supplies to Poland in the short term to address spikes in demand or exploit price opportunities (optimisation of gas supplies from other directions).

**2. Need to change the mix of imported gas sources**

The PGNiG Group's portfolio of gas supply sources is designed to fully cover demand from the Group's customers and is mainly comprised of long-term import contracts (the Yamal and Qatar contracts). In 2018, the Group pursued its strategy to diversify import sources, raising the share of gas sourced from suppliers west and south of Poland (based on market prices of gas at relevant gas hubs) and LNG (spot deliveries and new long-term contracts for LNG from the United States), while reducing the share of gas supplies from countries east of Poland.

As the Yamal contract expires after 2022, the PGNiG Group is actively looking for alternative sources of natural gas supplies to Poland, including in countries north of

Poland (via the planned Baltic Pipe). Seeking to optimally utilise the LNG Terminal, in 2018 PGNiG also added to its portfolio new contracts with American partners for the gas supply to Poland from 2022 onwards.

**3. Policy and regulatory changes**

Significant changes are taking place in the PGNiG Group's regulatory environment, particularly with respect to taxation of hydrocarbon production, the exchange sale requirement, and uncertainty surrounding the support model for gas-fired cogeneration, all of which may adversely affect the each Group's segment revenues.



# PGNiG Group Strategy for 2017-2022

In response to the changing internal and external environment, the Group developed the new PGNiG Group Strategy for 2017–2022 with an Outlook until 2026, which was approved by the PGNiG Supervisory Board on March 13th 2017.

The key external developments reflected in the Strategy were of macroeconomic nature (e.g. falling prices of crude oil and natural gas), but they also included other factors, such as the rapidly accelerating competition growth on the Polish gas market, the need to diversify gas imports from 2022 onwards, and changes in the regulatory environment (gradual withdrawal of the tariff regime, unpredictable future of the support mechanism for power generation beyond 2018). Following analyses, the key macroeconomic assumptions underlying further strategic forecasts were updated, including those related to gas, oil and electricity prices. New strategic objectives and ambitions for the Group until 2022 were formulated.

A major internal change associated with the adoption of the new Strategy was the implementation of the Balanced Scorecard (BSC) methodology, which enables the balancing of the Group's financial, operating and development objectives based on four key BSC 'perspectives' (finances, customers, processes, and resources and growth). The result is a new way of defining main strategic objectives, where targets and ambitions are set at the Group level and then cascaded down to the Group's key business areas.

The pursuit of sustainable development as the Group's priority will be driven by parallel investments in riskier business areas yielding relatively high rates of return (upstream) and in regulated areas offering considerable safety of the investments (gas distribution, power and heat generation).

The PGNiG Group has embarked on an ambitious capital investment programme that is to lay the foundations for long-term and stable value growth.

## Targets and ambitions for 2017-2022

### Ambitions in the key business areas

The PGNiG Group Strategy identifies seven key business areas, with the following strategic objectives and ambitions for 2017–2022 defined for them:

| | |
|---|---|
| **Exploration and Production**<br>Increase hydrocarbon reserves and production | increase the current base of documented hydrocarbon reserves by ca. 35%, increase hydrocarbon production by ca. 41%, significantly reduce unit costs of exploration for and appraisal of deposits, and maintain unit cost of field development and hydrocarbon production; |
| **Wholesale**<br>Diversified and competitive gas supply portfolio | build a diversified and competitive gas supply portfolio beyond 2022; |
| **Retail**<br>Maintaining current market position and maximising margins | maximise retail margins, while maintaining the total volume of retail gas sales at ca. 67–69 TWh/year; |
| **Storage**<br>Secure access to storage capacities | ensure the availability of storage capacities adjusted to actual demand and improve storage efficiency; |
| **Distribution**<br>Faster gas network roll-out | build more than 300,000 new service lines and increase gas distribution volume by ca. 16%; |
| **Power and Heat Generation**<br>Increase power and heat production volumes | increase power and heat sales volumes by ca. 20%; |
| **Corporate Centre**<br>Effective business model, development of R&D&I and CSR | increase involvement in and effective execution of R&D&I projects (target outlay of ca. PLN 680m), improve operational efficiency across the PGNiG Group and enhance the Group's image. |

### PGNiG Group's targets and ambitions for 2017–2022 according to strategic perspectives

| Strategic perspective | PGNiG Group's strategic objectives | Strategic ambitions for 2017-2022 |
|---|---|---|
| Financial | Increasing the PGNiG Group's value and ensuring its financial stability | Cumulative EBITDA of PLN 33.7bn |
| Customers | Development of gas and electricity sales | Cumulative natural gas sales volume on wholesale markets in Poland and abroad 1,000 TWh<br>Cumulative natural gas and electricity retail sales volume 410 TWh |
| Processes | Improve efficiency in connecting new customers | Over 300 thousand new customers connected to the PSG distribution network |
| Resources and growth | Increase hydrocarbon reserves<br>Increase potential for hydrocarbon production<br>Diversified gas supply portfolio | Increase the base of documented hydrocarbon reserves by 35%<br>Increasing total output of hydrocarbons by 41%<br>Diversification of gas supply sources |

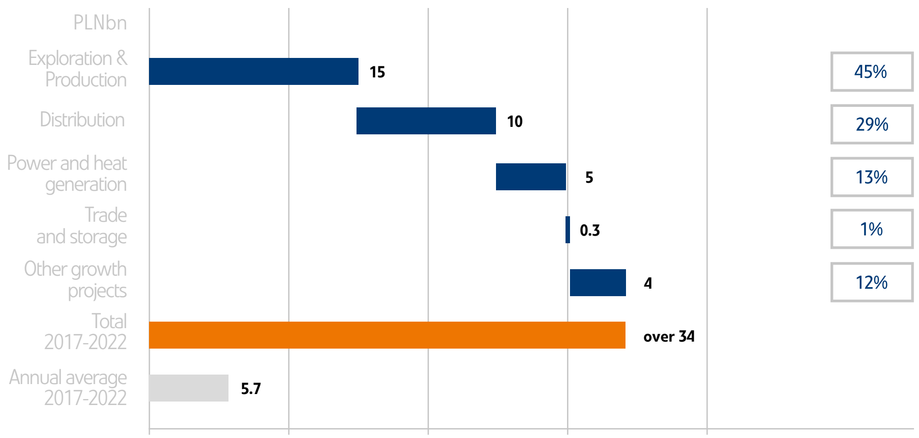
For more on EBITDA, see p. 193.

### Investment projects in 2017-2022

The total CAPEX has been assumed to exceed PLN 34bn in 2017–2022. Average annual capital expenditure in 2017–2022 will amount to ca. PLN 5.7bn:

- of which almost a half (45%) will be spent on hydrocarbon exploration and production;
- almost 30% of capital expenditure will be spent on developing the distribution business;
- ca. 13% – on power and heat generation projects;
- additionally, ca. 12% of CAPEX will be allocated to other, selected growth projects offering attractive returns, including in distribution, trading, power and heat generation.

**Planned capital expenditure in 2017-2022 by PGNiG Group operating segments**




The investment programme should deliver cumulative 2017–2022 EBITDA of ca. PLN 33.7bn, driving long-term growth of the Group's EBITDA in 2023–2026 to the annual average of ca. PLN 9.2bn. At the same time, the net debt to EBITDA ratio should stay below 2.0 over the Strategy term, with the current dividend policy providing for distribution of up to 50% of the Group's consolidated net profit upheld.

# PGNiG Group Sustainable Development Strategy for 2017–2022

Corporate social responsibility and sustainable development initiatives are taken on the basis of the PGNiG Group Sustainable Development Strategy for 2017–2022 (the CSR Strategy), which supports and supplements the business objectives defined in the PGNiG Group Strategy for 2017–2022.

The awareness of our environmental impact and responsibility for energy security, rooted in the Group's value system, are the cornerstone of the CSR Strategy. The priorities of the CSR Strategy are presented below.

## National energy security

The PGNiG Group's business directly affects Poland's energy security, which – in the context of sustainable development – is reflected in our objective of providing customers with access to natural gas, electricity and heat, based on diversified sources and directions of natural gas supplies. This objective is understood as continuous pursuit by the PGNiG Group of development in the area of natural gas and crude oil production and gas storage, as well as ensuring diversified sources of supply for customers. In this context, the importance of the key business projects involving gas exploration and production or procurement, diversification of sources and directions of natural gas supplies or the day-to-day business of electricity and heat generation pursued by the PGNiG TERMIKA Group companies, can be seen.

## Environmental protection

The business activities carried out by the PGNiG Group companies have an effect on the environment. Taking into account the contemporary challenges of environmental protection, related to the depletion of natural resources and possible contamination of individual elements of the environment, PGNiG makes an effort to minimize the negative impact. Support in achieving these goals is the development of technical standards for the implementation of works based on applicable legal requirements, as well as industry good practices, prevention of environmental damage in the exploration and extraction of deposits, analysis of environmental risks, monitoring the impact of activities on the environment. PGNiG also uses technologies that reduce the negative impact on the environment and maintains management systems, within which it pursues environmental goals and objectives, striving to increase environmental efficiency.

The challenge in this area is also the close cooperation and control of compliance with the environmental requirements set for contractors, cooperation with state administration bodies, local governments and the local community. In addition, efforts are underway to improve energy efficiency, such as the implementation and maintenance of an energy management system.

### Local society

The nature and scale of the PGNiG Group's operations and the presence of its exploration, production, storage and distribution infrastructure in the lives of local communities make the Group deeply committed to building partnering relations with its social environment, local governments, suppliers and contractors, with the ultimate goal of pursing joint objectives. The PGNiG Group creates opportunities for cooperation and builds understanding for mutual relations and interdependencies with individual stakeholder groups.

### Development of the offer and customer satisfaction

Care for the customers and their satisfaction is one of the key areas of focus for the PGNiG Group companies. Retaining the existing customers and ensuring their satisfaction, as well as acquiring new ones, is possible thanks to the implementation of projects designed to ensure professional and friendly customer service and tailoring the offering to diverse needs. The planned initiatives under this strategic direction are also related to building a transparent and credible brand.

### Care for employee safety and development

Building mutual relations and conducting open dialogue with trading partners in order to continuously enhance the safety of employees, persons staying on the PGNiG Group's premises and the local communities as well as successful efforts to constantly and permanently improve occupational health and safety are among PGNIG's principal commitments set out in the QHSE Policy, implemented through the Group's health and safety management system.

### Innovation for development

The PGNiG Group is looking for new technology solutions and supports the work and development of innovators. Investment in innovation and modern solutions increase the efficiency of operations, contribute to the growth of the PGNiG Group's business potential and help minimise the adverse impact of the Group's operations on the environment. Innovation based on the foundation of knowledge, education and R&D activities can trigger the growth of an organisation. One of the PGNiG Group's priorities is to further develop cooperation with the world of science, as well as to support and initiate the development of start-ups and of small and medium-sized enterprises.

### The value system as a basis for action

As a responsible organisation, PGNiG aims to maintain ethical standards and to consciously follow them in its business activities. In 2018, the ethics programme management was reorganised and is currently governed by the PGNiG Group's Compliance Policy.

The persons responsible for ethics and compliance at the PGNiG Group are the first points of contact for employees in the event of a breach of ethical standards, applicable laws, customary market norms, industry standards or good market practice. In the event of any doubts, employees may contact such ethics and compliance officers and receive relevant explanations.

At the PGNiG level, ethical conduct is within the remit of the Ethics and Compliance Coordinator, who is responsible for reviewing the breaches of ethical standards reported by staff and decides whether to investigate such breaches or refer them to the PGNiG Group Ethics Committee. At the Group level, PGNiG has appointed the Ethics Committee and Ethics Officer.

The Company has in place a Code of Ethics, complemented by other internal regulations such as the PGNiG Group Compliance Policy and the recently adopted Transparency Policy for Managers, setting out the core values and benchmarks for conduct of both employees and managers.

The PGNiG Code of Ethics consists of the Statement of Values and the Ethical Standards Code. The Statement of Values sets out the moral principles and ethical ideals to foster development of an ethical environment and mutual trust at PGNiG. The Ethical Standards Code spells out specific rules of conduct for PGNiG employees, which are in line with declared corporate values and best industry practices from around the world.

As stipulated in the ethics programme, the presented values and ethical principles must be fully upheld by every PGNiG employee in the course of their professional duties. The Code allows the Group companies to further improve their best practices and ethical standards based on their own judgement, in accordance with the specific nature of relevant market sectors, conditions in which they operate in various countries, and prior experience.

The PGNiG Group has appointed 11 persons to act as ethics and compliance coordinators, supported by the Ethics Committee and Ethics Officer at the PGNiG Group level.

The PGNiG Group Ethics Officer, together with the Ethics and Compliance Coordinator at PGNiG and the Compliance Department at PGNiG, promoted knowledge of internal ethics-related regulations in newsletters and official releases, as well as in an internal magazine for employees.

The PGNiG Group provided training in ethics-related regulations for ethics and compliance coordinators at individual Group companies. Additionally, such coordinators organised ethics training for employees, managers and directors. At the PGNiG Group, more than 1,000 employees, mostly managers and new employees, participated in training related to ethical conduct.

No breaches of ethics were reported at PGNiG; the same applies to most Group companies which have appointed their own ethics coordinators. At PSG, a PGNiG Group company with the highest headcount, 18 incidents were reported in 2018. In accordance with the applicable policies and the Code of Ethics, the reported incidents were examined directly by ethics managers or by the appointed Ethics Committees, depending on the nature and scope of reported issues.

### Human rights and ethics

Human rights aspects are taken into account in the Codes of Ethics and the Group's procedures for preventing workplace harassment and discrimination, which are founded, in particular, on the principles of the Constitution of the Republic of Poland:

- the principle of legal equality and prohibition of discrimination (Art. 32 of the Constitution of the Republic of Poland);
- the principle of gender equality (Art. 33);
- freedom of religion and belief (Art. 53–54);
- the right to privacy (Art. 47); and
- the right to protection of personal data (Art. 51).


## Strategic objectives

| Area | Subject | Strategic objective |
|---|---|---|
| Market | National energy security | Providing customers with access to natural gas, electricity and heat, based on diversified sources and directions of natural gas supplies. |
| Environ-ment | Environmental protection | Effective care for environmental issues in all business areas. Improving energy efficiency throughout the PGNiG Group's value chain. |
| | Social capital | Commitment to the development of social and intellectual capital in Poland by opening up to new initiatives and supporting pro bono projects. |
| | Social communica-tion and dialogue when carrying out investment projects | Dialogue with local communities in accordance with the best standards develo-ped at the PGNiG Group. |
| Customers | Customer satisfaction | Increasing customer satisfaction by improving service quality and investing in advanced digital communications solutions and tools that meet the needs of va-rious customer groups. |
| | Development of the offer | Striving to increase the availability of products and services, including through the development of infrastructure in areas not connected to the gas distribution network and tailoring the offering to the highest standards and customer needs. |
| Employees | Reliable employer | Promoting and implementing good hiring standards by pursuing a professional HR policy and building a friendly workplace. |
| | Employee development | Development of mentoring and proactive initiatives to ensure the availability of qualified staff. |
| | Occupational health and safety | Implementation of uniform OHS management standards in order to constantly increase the safety of PGNiG employees, any other persons on PGNiG premises, and the local community. |
| Innovations | Innovation for development | Active support of the development of cooperation with scientific and research institutions and start-ups or SMEs in order to constantly improve the efficiency of company's operations. |
| Ethics | System of values | Broadening the employees' knowledge of the ethical values and principles appli-cable in the work environment.<br>Responsible management of the entire value chain based on transparent coope-ration principles taking into account social and environmental criteria as well as human rights. |

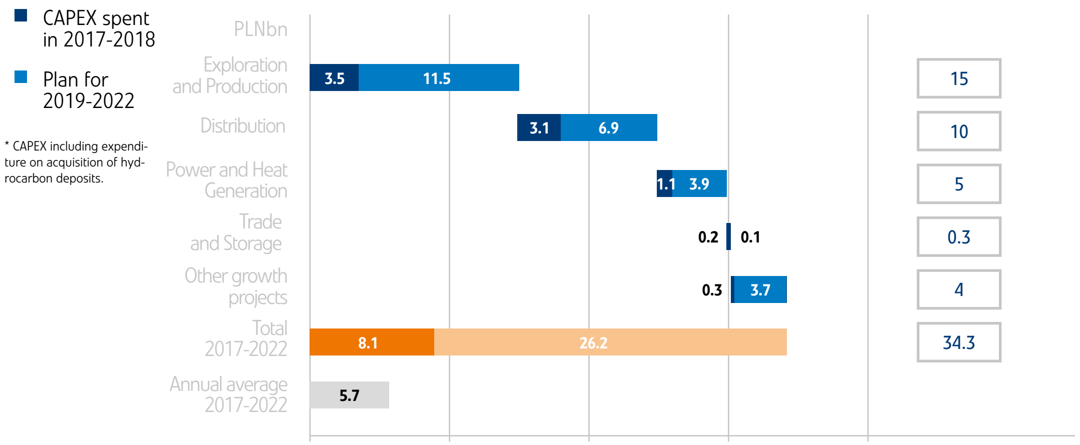
## Risks identified in key strategic areas

| Area | Risks | Risk management measures taken by the PGNiG Group |
|---|---|---|
| National energy security | Delay in exploration and production operations | • Ongoing monitoring of project progress<br>• Taking necessary corrective action by the licence operator |
| | Disruptions to gas supplies | • Constant monitoring of gas supplies<br>• Efforts aimed at ensuring real diversification of gas supplies in terms of suppliers and countries |
| Environment | Negative impact of operations on the natural environment | • Implementation of the QHSE Policy and environmental management systems<br>• Environmental education of employees<br>• Implementation of energy management system<br>• Submitting reports to competent authorities and institutions responsible for environmental management |
| Society | Risks related to relations with local communities | • Ongoing communication of and education on executed projects<br>• Cooperation with non-governmental organisations<br>• Addressing real problems of local communities (programmes, projects, support for local initiatives)<br>• Cooperation with local authorities |
| Customers | Risks related to relations with customers | • Review of agreements in terms of legal compliance<br>• Provision of customer service training to employees<br>• Compliance with the Code of Ethics<br>• Rules and regulations applicable to customer relations<br>• Development of modern channels of communication with customers |
| Employees | Departures of highly qualified staff | • Clear rules of employee remuneration<br>• Regular employee training to improve qualifications<br>• Periodic employee assessment by superiors<br>• Employee surveys / opinion polls<br>• System of social and other benefits for employees |
| | Occupational health and safety risk | • OHS and first aid training for employees<br>• Compliance with the requirement of pre-employment and periodic medical examinations of employees<br>• Compliance with internal OHS procedures reflecting external regulations<br>• Compliance with the QHSE Policy<br>• Ongoing proactive and reactive monitoring |
| | Risk related to social dialogue – relations with trade unions | • Periodic meetings of management staff with representatives of trade unions<br>• Ethics programme management system<br>• Rules of meeting employee benefit obligations<br>• Social agreements, Company Collective Bargaining Agreements |
| Ethics | Risk of misconduct (bullying, harassment) | • Training for employees and management staff<br>• Compliance policy<br>• Code of Ethics with examples of ethical behaviour<br>• Ethics managers at the PGNiG Group, including the Group Ethics Officer |
| | Risk of corruption | • Compliance with the Code of Ethics<br>• Implementation of the Anti-Corruption and Gift Policy<br>• Relevant staff training<br>• Ongoing monitoring and analysis of external regulations and their incorporation in internal rules |
| | Risk of irregularities in public procurement processes | • Staff training on procurement procedures and liability of employees involved in procurement process<br>• Internal rules, including the Anti-Corruption and Gift Policy<br>• Supervision of procurement documentation by qualified personnel |
| | Risk related to relations with suppliers and counterparties | • Compliance with the Code of Ethics and the QHSE Policy<br>• Employment of qualified staff<br>• Requiring contractors and suppliers to comply with the PGNiG Group's internal regulations |

# Strategy in action

During the first two years of implementation of PGNiG Group Strategy for 2017-2022, the capital expenditures incurred by the PGNiG Group totalled PLN 8.1 billion, which is approx. 24% of the strategic plan for 2017-2022.

### Planned capital expenditure in 2017–2022 and performance against plan in 2017 and 2018*




* CAPEX including expenditure on acquisition of hydrocarbon deposits.

## Exploration and Production

boe - barrel of oil equivalent (1 barrel is uqal to approximately 0.136 tonnes or 159 litres).

### Increasing hydrocarbon reserves

Hydrocarbon exploration in Poland is planned to be intensified in 2017–2022, to maintain the high rate of new discoveries. The 2016 breakthrough in exploration efficiency led to a surge in newly discovered hydrocarbon reserves (increase of approximately 35 mboe in 2016 vs approximately 16 mboe in 2015). In 2017–2022, the gross annual growth in Polish hydrocarbon reserves (including production) is expected to continue at a rate close to the 2016 levels, ranging from approximately 27 mboe to 34 mboe annually. PGNiG Group's ambition is to reverse the negative trend observed in 2010–2015, when the Group's total hydrocarbon base decreased by around 2% on average per year.

Given the limited capacity for growth in discoveries of new hydrocarbon reserves and little prospects of finding unconventional reserves in Poland, the Group is also looking for ways to increase its hydrocarbon reserves and step up production abroad. The Group remains committed to carrying out production projects which will yield equity gas on the Norwegian Continental Shelf, in order to transport the gas to Poland directly.

### Increase annual hydrocarbon production volumes

Another of the segment's strategic objectives is to increase the volume of annual hydrocarbon production from approximately 39 mboe in 2017 to close to 55 mboe in 2022 (+15.9 mboe, CAGR 6%) by keeping up the annual output in Poland at 30–33 mboe and considerably stepping up production abroad, i.e. in Pakistan and Norway, to 22 mboe annually.

To achieve that, the following measures have been taken:

- in Poland: increasing output from producing fields;
- abroad:
  - participation in licence award procedures in priority regions/countries;
  - execution of M&A projects in priority regions/countries;
  - implementation of an accelerated field development programme in the licence areas.

### Increasing profitability of exploration and production operations

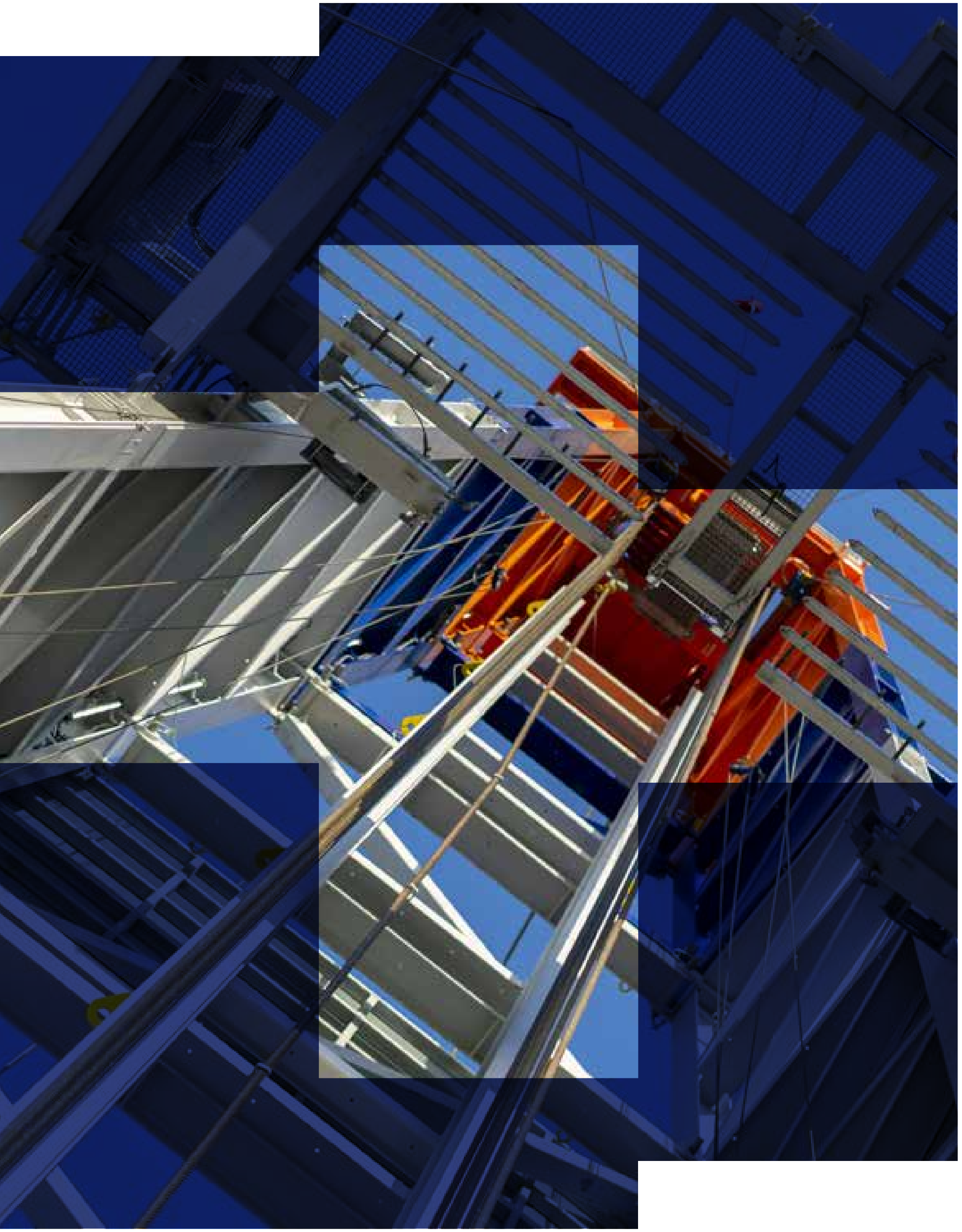
It is the segment's strategically-motivated ambition to considerably reduce unit exploration costs in Poland. Exploration efforts are to be focused on projects offering the highest potential for commercial success. In addition, the average time for appraisal and development of deposits is assumed to be shortened.

## Trade and Storage

### Wholesale: Diversification of gas supply sources

The PGNiG Group's position has been adversely affected by the long-term contract for gas supplies to Poland, concluded in the past (the Yamal contract). As the contract is nearing expiry in 2022, the Group seeks to ensure real diversification of gas supplies. In this respect, the Group's key activities include:

- Supporting the construction of the Norwegian Corridor – the Group's strategic objective is to build a mix of gas supply sources that would be available via the Norwegian Corridor, to enable gas imports from new directions and at market prices, thus ensuring flexibility of the gas supply portfolio beyond 2022;
- Enhancement of LNG trading and logistic capabilities on the global market – improvement of these capabilities will help the PGNiG Group create a more flexible gas supply portfolio beyond 2022 as it will be able to swiftly balance its gas imports. To this end, PGNiG has signed long-term contracts for supply of liquefied natural gas to Poland, which are to be performed after 2022. Looking further ahead, efforts will continue to develop the Group's capabilities and strengthen its presence on the global LNG market;
- Expanding the resource base in Poland and abroad – by developing and maintaining high gas production in Poland and investigating potential for acquiring gas from new directions with a view to strengthening the Company's competitive position beyond 2022.



### Wholesale: Wholesale of natural gas

In 2018, PGNiG's sales of natural gas totalled almost 190 TWh. The Group is aspiring to further increase its natural gas trading volumes in Poland and on international markets. As a matter of strategy and supported by PST's experience and capabilities, the Group will continue working towards expanding its foothold in other gas and electricity trading markets in Central and Eastern Europe. The Group intends to continue its efforts aimed at strengthening its presence in Ukraine, one of the most promising markets in the region.

### Retail: Maintaining the market position and improving operational efficiency in retail trade

During the term of the PGNiG Group Strategy, the overriding strategic objective of PGNiG OD will be to improve the efficiency of retail sales of gas while maintaining the total volume of retail sales at around 67–70 TWh/year.

In 2018, PGNiG OD continued to pursue the objectives of maintaining its market position and improving operational efficiency. Thus, maintaining an attractive portfolio of products and services, whether dedicated to large business customers (B2B) or the mass consumer market (B2C), as well as effective sales and customer service, remained crucial.

### Storage: Increasing available storage capacities

In its storage business, the PGNiG Group focuses on securing the availability of storage capacities in keeping with actual demand, and further improving the efficiency of its storage operations. Given the growing pace of gas market deregulation in Poland, the legal framework concerning the maintenance of emergency (mandatory) gas stocks is expected to be amended as of 2021. At the same time, relevant analyses have shown that the strong growth in demand for gas is set to continue, which will translate into increased demand for storage services related to commercial needs and emergency stock keeping obligations. The key objective remains to successfully complete the investment projects currently in progress (Kosakowo UGSF). Once the projects are completed, Poland's total capacity to store high-methane gas will be approximately 3.1 bcm.

## Distribution

### Accelerate the rate of connecting new customers

The strategy provides for significant acceleration of development of the distribution system and for increasing the rate of connecting new customers to the grid. One of the key strategic objectives of the distribution business is to increase the pace of connecting new customers to the distribution network from about 47,000 new connections in 2017 to about 55,000 new connections a year in 2022 (up 8,000 or ca. 17%).

This, however, will not be possible without optimisation of the related processes (shortening the time to approve and construct new connections), improvements in customer service, and deployment of remote channels.

### Increase gas distribution volumes

The higher rate of connecting new premises to the gas network will enable PSG to increase the volume of natural gas distributed, from the 2017 target of approximately 10.6 bcm to approximately 12.3 bcm in 2022 (an increase of about +1.7 bcm, or 16%).

The increase in the volume of distributed gas will be achieved by connecting new customers to the existing distribution network, expanding the distribution network into unserved areas, and delivering gas to customers lacking access to the gas transmission and distribution network through roll-out of local gas delivery solutions.

Given the growing supply of LNG on the Polish market, PSG plans to build local distribution networks which would not be connected to the national gas system, but instead will be fed with LNG (off-grid distribution networks). Another driver of increase in the volume of distributed natural gas will be the growing problem of smog blanketing many Polish cities and towns, and local governments' initiatives for air quality improvement through, inter alia, promoting conversion to low carbon fuels, including gas.

## Generation

### Increase power and heat sales volumes

The PGNiG Group's strategy for the generation business is to expand its share in the heat generation and distribution market.

On April 28th, 2016, PGNiG TERMIKA purchased shares in the companies that subsequently merged to from PGNiG TERMIKA EP. These acquisitions helped the PGNiG Group to expand into the prospective heat markets of Upper Silesia. Around PGNiG TERMIKA, the Group is building a strong group of companies offering significant growth potential that will create value for the entire Group.

In terms of electricity and heat generation, the Group's strategic ambition is to increase the volume of electricity and heat sales from approximately 15 TWh in 2017 to around 18 TWh in 2022.

The achievement of strategic objectives of the Generation segment will be possible thanks mainly to the completion of strategic upgrade and development projects at the existing PGNiG TERMIKA generation facilities, including the new CCGT unit at the Żerań CHPP. Furthermore, PGNiG TERMIKA intends to intensify its efforts in search of acquisition targets in the heat distribution and heat and electricity generation business, and to improve its operational efficiency through process optimisation.

In the period covered by the strategy, PGNiG TERMIKA will also complete the construction of a CCGT unit at the Stalowa Wola CHPP, a project executed jointly with TAURON Wytwarzanie SA.

Additionally, the PGNiG Group is seeking to increase its electricity and heat output at PGNiG TERMIKA EP, for instance by starting up a new unit at the Zofiówka CHPP in November 2018. The PGNiG Group wants to continue developing PGNiG TERMIKA EP through further acquisitions of local heating systems, primarily in Upper Silesia.

The current market and regulatory environment as well as tariffs provide favourable conditions for the growth of Poland's heating market. The regulated nature of the business guarantees stable rates of return. The entry into force in 2018–2019 of new capacity market regulations and regulations promoting high-efficiency cogeneration will also support the development of new electric capacities, in particular high-efficiency gas-fired cogeneration units.

## Other segments

### Effective business model, development of R&D&I and CSR

This area will strive to build an efficient organisational and management model across the highly complex structure of the PGNiG Group. Its three main aspirations are to increase the PGNiG Group's growth potential in research, development and innovation, improve the Group's operational efficiency, and enhance the Group's image.

# PGNiG's role in ensuring energy security

## Introduction

Inherent in the PGNiG Group's responsible growth are measures geared towards ensuring Poland's energy security.

From PGNiG's perspective, the factors of key importance to ensuring energy security, out of those highlighted by the Ministry of Energy, include:

- The degree of diversification of natural gas sources and directions of supply to Poland;
- The volume of domestic natural gas production;
- The level and availability of natural gas storage capacities in Poland.

It is estimated that by 2030 the demand for natural gas in Poland will grow by over 30% relative to 2015. It will be driven, in particular, by the expanding market for CNG and LNG fuels used by vehicles, and the associated development of distribution and supply infrastructure, which will follow that growth trend. Another major indicator of the upcoming increase in demand for natural gas is the construction of new gas-fired power generating units.

## Diversification of natural gas supply sources and directions

The PGNiG Group is the principal importer of natural gas to Poland. A considerable portion of gas supplies still comes from countries east of Poland, but this share is gradually shrinking, mainly due to growing volumes of LNG imported from other countries, including the USA, Qatar and Norway. The President Lech Kaczyński LNG Terminal in Świnoujście, being a key element of Poland's gas infrastructure which will further support diversification of gas supply sources, is of crucial importance both for Poland and the entire CEE region. Its current regasification capacities are fully utilised by the PGNiG Group, which clearly demonstrates the Group's leading role in diversifying the supply sources of energy commodities.

In addition to the Świnoujście LNG terminal, both existing and planned cross-border gas pipelines operated by GAZ-SYSTEM, as well as the Baltic Pipe project implemented by Polish and Danish TSOs, are important infrastructural elements which will contribute to further diversification of Poland's gas supply sources.

## Domestic natural gas production

PGNiG holds several dozen licences for exploration for and appraisal of hydrocarbon deposits in Poland, as well as over 200 hydrocarbon production licences, which positions the PGNiG Group as the leader of the country's crude oil and natural gas production.

## Exploration and production activities abroad

The Group's long-standing efforts in this area contribute to diversification of supply sources of energy commodities to its home country. The access to resources located outside of Poland is considered an important driver of further diversification of supplies, especially in the context of the Baltic Pipe project which is aimed at building a new gas supply corridor on the European market from North Sea fields.

## Volume and availability of natural gas storage capacities

The PGNiG Group currently operates seven underground high-methane gas storage facilities linked to the gas transmission system, as well as two nitrogen-rich gas storage facilities. As part of the 'UGSF working capacity development programme', the Group also takes steps to increase its gas storage capacities. The UGSF's target capacity, as set out by the Ministry of Energy, is expected to reach approximately 4 bcm in 2030.

## Gas supplier of last resort

Pursuant to Minister of Energy's Regulation (Journal of Laws of 2018, item 1814), in 2018 PGNiG Obrót Detaliczny was designated to act as the supplier of last resort for end users of gas, in particular those connected to the PSG's or OGP Gaz-System's network, in the event that their current supplier discontinues gas supplies through its own fault. In such a case, the DSO or TSO, acting for and on behalf of the customer, will enter into a relevant agreement with the supplier of last resort in order to guarantee uninterrupted gas supplies to end users. The customer is be notified of such agreement by PGNiG within 30 days.

# PGNiG in 2018

## Summary

### THE PGNIG GROUP

- **41.2** bn — Revenue
- **7.1** bn — EBITDA
- **4.4** bn — EBIT
- **3.2** bn — Net profit
- **74** — Innovative projects
- **24.8** thous. — Number of employees
- **96.6** % — Union membership rate
- **1.3** bn — Environmental investments

### PGNIG ON THE WSE

- **3** th — Largest company listed on the WSE*
- **39.9** bn — Market capitalisation
- **24.2** bn — Average daily trading value
- **8.8** % — ROE
- **6.0** % — ROA
- **5.6** — EV/EBITDA
- **12.4** — P/E
- **1.1** — P/BV

* In terms of market capitalisation as at December 28th 2018.

### EXPLORATION AND PRODUCTION

- **1.3** m tonnes — Production of crude oil, condensate, and NGL
- **4,5** bn $m^3$ — Production of natural gas
- **54** — Number of oil and gas production facilities in Poland
- **209** — Number of production licences
- **>2** thous. — Number of producing wells
- **47** — Number of hydrocarbon exploration and appraisal licences*
- **858** m boe — Oil and gas reserves
- **71** % — Segment's share in the Group's EBITDA for 2018

* Licenses in Poland

### TRADE AND STORAGE

- **29** bn $m^3$ — Volume of gas sold
- **8.8** bn $m^3$ — Volume of gas sold on PPX
- **13.5** bn $m^3$ — Volume of imported gas
- **3.0** bn $m^3$ — Gas storage capacities

### DISTRIBUTION

- **7** m — Number of customers
- **1,510** — Number of municipalities/communes connected to the gas grid
- **11.7** bn $m^3$ — Volume of distributed gas
- **186** thous. km — Length of distribution network with service line

### GENERATION

- **40.7** PJ — Heat output
- **1.2** GW — Electric power
- **5.3** GW — Thermal power
- **4.0** TWh — Electricity output

# Capital expenditure in 2018

In 2018, the PGNiG Group's capital expenditure on property, plant and equipment and intangible assets was PLN 4.9bn, having gone up by ca. 53% year on year. The table below present the Group's expenditure in each segment.

### Capital expenditure* on property, plant and equipment made by the PGNiG Group in 2018

| | | 2018 | 2017 | Performance vs CAPEX plan 2018** |
|---|---|---|---|---|
| I. | **Exploration and Production, including:** | **2,232** | **1,214** | **60%** |
| 1 | Norway | 1,149 | 275 | 78% |
| 2 | Pakistan | 94 | 100 | 49% |
| 3 | Libya | 9 | 4 | 144% |
| II. | **Trade and Storage** | **108** | **60** | **67%** |
| III. | **Distribution** | **1,807** | **1,265** | **84%** |
| IV. | **Generation** | **605** | **526** | **57%** |
| V. | **Other Segments** | **143** | **145** | **78%** |
| VI. | **Total capital expenditure (I-V)** | **4,895** | **3,210** | **69%** |

* Including capitalised borrowing costs.

* Based on actual and planned expenditure in 2017 and 2018, net of expenditure on acquisitions of hydrocarbon reserves in Norway.

# Research, development and innovation in 2018

One of the goals set in the PGNiG Group's Strategy for the Corporate Centre is to step up innovation by effective implementation of R&D and innovation projects. Within the PGNiG organisational structure, these tasks fall within the remit of the Innovation and Business Development Department, which oversees activities in the area of innovation (solution identification, development, implementation/commercialisation) and energy efficiency, as well as the Research and Development Department, which is responsible for managing R&D projects and intellectual property rights and for collaboration with scientific and research centres.

## Research and development

As a result of the efforts undertaken by the Research and Development Department, PGNiG received 99 proposals of research and development projects highly suitable for the needs of the PGNiG Group. Most of the proposals were from universities and research institutes (50 R&D proposals from 20 different entities, totalling PLN 99.6m) and the National Centre for Research and Development's INGA programme (34 proposals from 35 different entities/consortia for about PLN 226m in total). In 2018, PGNiG concluded 19 new contracts for R&D work worth PLN 9.7m, most of which pertained to Exploration and Production. Under the INGA programme, seven projects were selected for funding worth a total of PLN 65.4m (with about PLN 32.5m provided by the NCRD). In 2018, other PGNiG Group companies carried out 20 research and development projects for a total amount of PLN 4.1m.

As part of the efforts to identify R&D areas with the largest business potential for the PGNiG Group, an updated set of areas for development was prepared under the Foresight R&D 2018 project, to help formulate the PGNiG Group's long-term strategy and to meet the Group's current R&D needs. The R&D Intellectual Property Protection Model was also developed to improve security in intellectual property transfers and to strengthen sources of revenue relying on such transfers.

A series of research and development activities related to hydrogen technology as a potential new business line were also launched. A programme of R&D work that would enable the Group to enter this segment is being developed. The work will focus on fuel cells (distributed generation), hydrogen storage using underground gas storage facilities and distribution network, hydrogen-based electromobility, and large-scale power generation (hydrogen gas turbines).

The most important R&D projects implemented or completed in 2018 are listed below:

- Launch of the first competition and establishment of a ranking list of projects under the INGA programme implemented as a joint venture with the NCRD and GAZ-SYSTEM;

NCBR - National Center for Research and Development - a Polish executive agency whose task is to support Polish scientific units and enterprises in developing their ability to create and use solutions based on the results of scientific research.

- Launch of the ELIZA project researching hydrogen issues and technologies. The project focuses on the possibility of obtaining hydrogen from a RES installation (wind turbine) through electrolysis in a process unit located at an underground gas storage facility, and then injecting the hydrogen into an underground storage cavern, from which it could be fed into the gas network;
- Launch of the Helium-3 project researching a technology for obtaining helium-3 isotope from liquid helium, an important material used in safety systems, medical diagnostics and nuclear power engineering;
- Completion of the research and development phase of the 'Low-power turbo-expander' and 'MiniDrill – Technology for small-diameter waterjet drilling' R&D&I projects and commencement of work to launch further stages of implementation of these projects in order to reach the commercialisation phase;
- Obtaining a certificate of approval for use of a green wellhead (Ecohead) with an innovative structure based on cast steel bodies, instead of commonly used forged materials, and using new metal-to-metal sealing technology;
- Launch of the 'Early start-up' project enabling cooperation with start-ups or teams offering projects with a low technology readiness level, with Polish science and research institutions included in cooperation and incubation;
- Launch of a project to build a pilot hydrogen filling station as one in a series of projects to be implemented under the planned hydrogen technology advancement programme called HYDRA.

In 2018, the PGNiG Group also launched the Implementation Doctorates programme for its employees. Based on science-industry collaboration, the programme is to promote business growth by building upon past scientific achievements and by developing the expertise of PGNiG staff. The fourth edition of the 'Young Innovators for PGNiG' competition was held. The competition is designed for students, doctoral students and young scientists.

As part of collaboration with trade organisations, the Group joined the Hydrogen and Clean Coal Technology Cluster, whose mission is to initiate activities aimed at promoting hydrogen and clean coal technologies. The Group also joined the European Gas Research Group (Groupe Européen de Recherches Gazières, GERG), which promotes joint implementation of R&D projects related to innovative technologies in the gas industry.

### Innovation and business growth

In 2018, the PGNiG Group was implementing 132 innovation projects worth a total of approximately PLN 349m, of which 58 were completed or suspended, while 74 remain in the implementation phase: 63 projects implemented and funded by the PGNiG Group companies and 11 projects implemented and/or funded by the Innovation and Business Development Department, namely InnVento Startup Centre, SORGE, Norwegian Funds, VPP Power, KELVIN, Flara, Digital Field, Microcoiled Tubing ¼'', Trigonostoma, Automatic Foaming Stick Injector, Concept for the Development and Construction of a Mobile LNG Sampling Facility. The most important Innovation projects implemented in 2018 were InnVento and Geo-Metan II.

## Selected innovative projects implemented in 2018

| No. | Project | Executor | Brief project description | Target group |
|---|---|---|---|---|
| 1 | InnVento | PGNiG | The initiative, addressed to young entrepreneurs and scientists, is dedicated to innovative solutions for the energy sector. InnVento is an office space equipped with the latest equipment and offering access to the PGNiG Group's mentors and experts. For more information, see: innvento.pl/. In recognition of the project and cooperation with start-ups, PGNiG was distinguished in the 'Polish Radio Business Awards', receiving the main prize in the 'Breakthrough Solution' category. | Start-ups at an early stage of development |
| 2 | GEO METAN II | PGNiG - Geology and Hydrocar-bon Production Branch | The project is designed to enable pre-mining extraction of coal bed methane and examine the impact of hydraulic fracturing on future mining production. Its implementation will contribute to safer coal production, strengthening the Polish hard coal mining industry, and to lower methane emissions into the atmosphere. In 2018, based on the established criteria, potential drilling locations were identified for the project. The next stage will involve vertical and horizontal drilling, hydraulic fracturing, and launching of methane inflow tests. The project is described in the government document entitled 'Programme for the Hard Coal Mining Sector in Poland'. | Ministry of Energy, National Fund for Environmental Protection and Water Management, National Centre for Research and Development, Polish Geological Institute – National Research Institute, Jastrzębska Spółka Węglowa SA, Polska Grupa Górnicza Sp. z o.o., Tauron Polska Energia SA, Tauron Wydobycie SA, State Mining Authority |
| 3 | Mobile refuelling service for L-CNG units | PGNiG OD | The purpose of the project is to provide short-term vehicle refuelling services in the event of a technical failure or maintenance work from a mobile CNG filling station, or as a transition service until a new CNG station is built. The project is of key importance for the performance of a contract to supply CNG for MZA Warszawa buses, under a tender won for the construction of a CNG station, including delivery of 54.1m Nm³ of CNG. | CNG customers, municipal transport operators and municipal services providers |
| 4 | LNG bunkering services | PGNiG OD | The purpose of the project is to include into the portfolio of PGNiG OD the bunkering of liquefied natural gas (LNG) based on the truck-to-ship (TTS) technology, which is a novelty on the Polish market. Its final product will be an offering providing ship owners with access to an alternative bunker fuel (LNG). Initially, the offering will only involve the truck-to-ship method, but other project deliverables will allow the company to further develop the service. | Ship owners |
| 5 | Off-grid CNG supply system | PGNiG OD | Provision of the virtual pipeline service based on the CNG technology; the service could be provided in areas close to PGNiG OD's CNG stations located on transmission pipelines. The project is currently put on hold, awaiting a decision to be resumed. | PGNiG OD's customers (business and CNG customers) |
| 6 | Mobile LNG regasification station | PGNiG OD | Provision of a new service to customers involving temporary (short-term) gas supply to a customer's existing gas infrastructure. The project demonstrated that the station was fully functional, and gas was regasified automatically in accordance with pre-determined parameters. | All existing or prospective business customers of PGNiG OD and PSG |
| 7 | Solutions 4 Tomorrow: autonomous drones | PGNiG OD | The purpose of the project is to develop a tool for effective measurement of air pollution concentrations in cities/towns with up to 100,000 inhabitants. The new system will collect pollution data from the air and then create an air pollution map based on analytical tools. | Local government units |
| 8 | Launch of alternative vehicle supply sources at service stations | PSG | The project assumes deployment of an alternative fuel infrastructure development model outlined in the Act on Electromobility and Alternative Fuels of January 11th 2018 (Journal of Laws of 2018, item 317) (the EPA Act), and will contribute to achievement of the Polish government's objectives to develop alternative fuel infrastructure, set down in the Electromobility Development Plan for Poland and the National Framework Policy for Development of Alternative Fuel Infrastructure until 2025. | PSG/Customers for natural gas |
| 9 | DSI/ACI (Dry Sorbent Injection/Activated Carbon Injection) - a pilot study of dry flue gas desulfurisation and Hg, HF, and HCl compounds removal systems | PGNiG TERMIKA | Tests of dry sodium injection systems for desulfurisation, capture of hydrogen fluorides and chlorides, and activated carbon injection for the purpose of mercury capture. The project was carried out as part of preparation of the Kawęczyn HP for the BAT Conclusions. Its purpose was to investigate the viability and effectiveness of the proposed innovation in practice. In 2018, a decision was made to implement the DSI/ACI technology on fluidised bed boilers at the Żerań CHPP. Further analyses are under way. | PGNIG TERMIKA / PGNIG TERMIKA ENERGETYKA PRZEMYSŁOWA |
| 10 | MIT Enterprise Forum Poland Acceleration Programme | PGNiG Head Office | Implementation of acceleration paths: Energy, Health, Commodities and Fin-Tech sectors. The accelerator programme is based on a proven acceleration pattern, supported with the individual approach of those behind the Polish version of the programme. The programme is co-financed by the Polish Agency for Enterprise Development (PART) under the ScaleUP programme, which is part of the Start in Poland programme. | Technology start-ups |
| 11 | Młodzi Innowacyjni dla PGNiG (Young I nnovators for PGNiG) | PGNiG | The fourth edition of the competition for young scientists preparing research and development projects for the PGNiG Group. Launched in 2015, the project delivers highly innovative solutions. Its purpose is to look for innovative R&D projects within the scope of the PGNiG Group's operations, especially in hydrocarbon exploration and production, gas fuel distribution, power generation, new applications of natural gas, environmental protection, services for customers and natural gas users (including security of gas supplies), and promotion of the PGNiG brand. | PGNiG Group, young scientists, university students and PhD students |
| 12 | Annual assessment of PGNIG TERMIKA's impact on air quality in the Warsaw agglomeration | PGNiG TERMIKA | The aim of the project is to show PGNiG TERMIKA's impact of on air quality in Warsaw. | PGNiG TERMIKA |
| 13 | Bank Inicjatyw (Bank of Initiatives) | PGNiG TERMIKA | The main goal of the Bank of Initiatives is to search for and implement innovative ideas of employees. In 2018, 75 innovative ideas were proposed, of which 28 were recommended for deployment. | PGNiG TERMIKA |
| 14 | Pomysł na Innowacje (Innovative Idea) | PSG | PSG employees submit innovative ideas, which are then evaluated by experts, and the best ones are implemented at the company. The key business goal of the project is to develop and implement a solution which would support the creation of corporate culture and a climate favourable for the development of innovation within PSG. This is expected to enhance the innovativeness of technological solutions as well as process-related and organisational solutions applicable at the company. | PSG employees |

# Market and regulatory environment

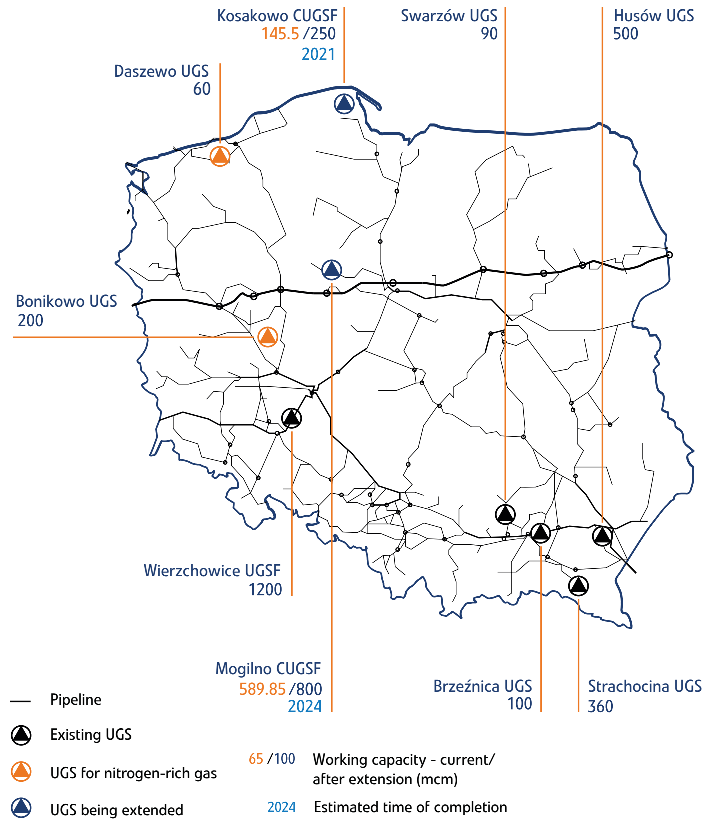
## Gas market

### Polish gas market

The PGNiG Group plays a key role on the Polish gas market, being responsible for preserving Poland's energy security. To this end, it takes measures necessary to satisfy the steadily growing demand for gas fuel. The PGNiG Group ensures gas supply diversification by developing domestic deposits and sourcing gas from abroad as the largest importer and supplier of natural gas in Poland. Gas is transported to Poland via an extensive transmission network, with LNG-derived gas additionally fed into the network since 2016. The Company delivers gas to end users through the distribution networks. The national gas system is complete with gas fuel storage facilities, used to cover seasonal and daily shortages of gas fuel. In gas trading, the key role is played by the Polish Power Exchange where PGNiG has been the Gas Market Maker since November 2013.


### Transmission system

#### Transmission system and reach of the distribution grid in Poland

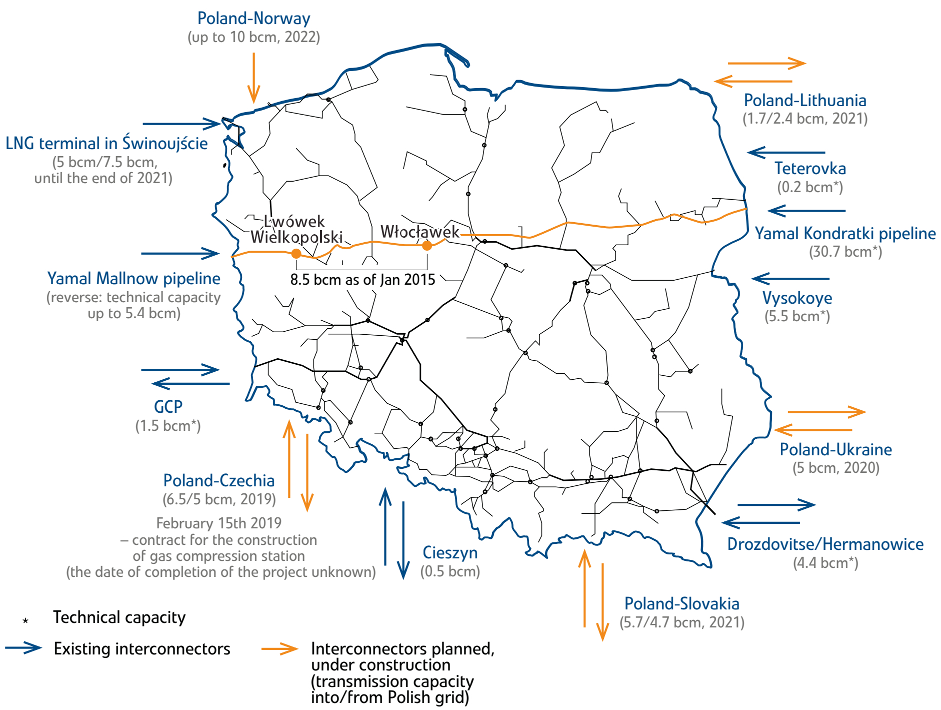



Management of the transmission network and transport of natural gas via the national transmission network to deliver it to distribution grids and end users connected directly to the transmission system is the responsibility of GAZ-SYSTEM, a state-owned company. The existing transmission network comprises two operationally interlinked systems, the Transit Gas Pipeline System and the National Transmission System (high-methane gas [E group] and nitrogen-rich gas [Lw subgroup]). As at the end of 2018, the length of Poland's gas transmission network totalled over 10.7 thousand km. The volume of gas fuel transmitted through the network amounted to 17.2 bcm in 2018 (measured as high-methane gas equivalent).

In December 2017, the General Meeting of GAZ-SYSTEM approved the National Ten-Year Growth Plan for 2018-2027. The planned infrastructure projects are primarily designed to meet the current and future demand for natural gas from domestic customers while ensuring uninterrupted gas supplies.

See also:
en.gaz-system.pl/customer-zone/download/development-plan/

## Existing and planned strategically important cross-border entry points into the transmission system




Source: GAZ-SYSTEM and European Network of Transmission System Operators for Gas (ENTSOG)

### Gas flow

2018 saw decreasing volumes of gas fuel imported to Poland which reached 162.80 TWh (down by 4.2 TWh, or approximately 2.5%), with a 7% decline in gas imported from east of Poland and an 18% decrease in gas imports from the EU year on year. The majority of imported gas (approximately 61% of total flows) originated from countries east of Poland. According to ENTSOG's data, the largest flows were recorded at Drozdovitse. As regards imports from the west, the largest flows were recorded at the Mallnow point.

In 2018, gas deliveries by sea to the LNG Terminal were continued, which resulted in a 58% increase in the volume of gas regasified at the LNG Terminal compared to 2017. The volumes of gas previously supplied over onshore pipelines were partly replaced by the volumes supplied under the new long-term LNG contract with Qatargas and increased volumes of LNG spot purchases.

## Gas flows at Poland's gas grid entry/exit points

| Entry/exit point (in TWh) | 2018 | 2017 | Change y/y |
|---|---|---|---|
| Supplies from EU | 34.82 | 42.53 | -18% |
| including Lasów, Gubin (GCP) | 4.33 | 6.08 | -29% |
| including Cieszyn | 3.89 | 1.26 | +209% |
| including Mallnow | 26.60 | 35.20 | -24% |
| Supplies from across Poland's eastern border | 98.83 | 105.96 | -7% |
| including Drozdovitse | 42.51 | 49.72 | -15% |
| including Teterovka | 0.87 | 0.88 | -1% |
| including Kondratki | 22.06 | 20.98 | +5% |
| including Vysokoye | 33.39 | 34.37 | -3% |
| LNG regasification | 29.17 | 18.47 | +58% |
| Exports to Ukraine (mainly Hermanowice) | 7.26 | 13.78 | -47% |
| **Total flow** | **170.08** | **180.74** | **-6%** |

Source: ENTSOG

### LNG in Poland

At present, the LNG Terminal can handle annual gas imports of 5 bcm (after regasification). In 2017, PGNiG increased its reservation from 65% to 100% of the terminal's regasification capacity. The relevant contract is valid until January 1st 2035. Since 2018, Polskie LNG SA has been engaged in a project to expand the LNG Terminal. The project includes four tasks: construction of additional regasification units, a third LNG storage tank, LNG handling facilities for loading gas onto railway tank cars, and an additional wharf. After its planned expansion, the terminal's annual capacity should be increased to 7.5 bcm in the coming years.

The terminal is able to receive LNG tankers not larger than Q-Flex, whose maximum capacity (depending on the vessel) ranges from 210 to 218 thousand cubic metres of LNG (approximately 130 mcm of high-methane gas after regasification).

The end product of gas regasification is fed into the national transmission grid via the Goleniów gas compression station. LNG is also transported by tankers to regasification plants and stations located throughout Poland. Also, the volume of fuel delivered to end users in the form of liquefied natural gas (small-scale LNG) is growing steadily.

PGNiG considers LNG deliveries as a means to ensure gas supply security and diversification. In 2018, PGNiG received a total of 18 LNG shipments under the long-term contracts with Qatargas. The volume of LNG imports from Qatar amounted to 1.65m tonnes, i.e. approximately 25.1 TWh or 2.29 bcm of natural gas after regasification. In 2018, PGNiG purchased gas under four spot contracts and its volume totalled 0.25m tonnes, i.e. approximately 3.7 TWh or 0.34 bcm of natural gas after regasification. The spot deliveries were sourced from Norway and the US, and were arranged in cooperation with the LNG trading office in London. In June 2018, PGNiG also received an LNG shipment under a medium-term contract with Centrica.

Over 2018, PGNiG imported 23 shipments of LNG via the LNG Terminal, with a total volume of 1.96m tonnes, i.e. approximately 29.8 TWh or 2.71 bcm of natural gas after regasification.

## Distribution system

Distribution services are provided by one major distribution system operator (Polska Spółka Gazownictwa) and several dozen smaller local operators whose networks are connected to the system operated by PSG or GAZ-SYSTEM.

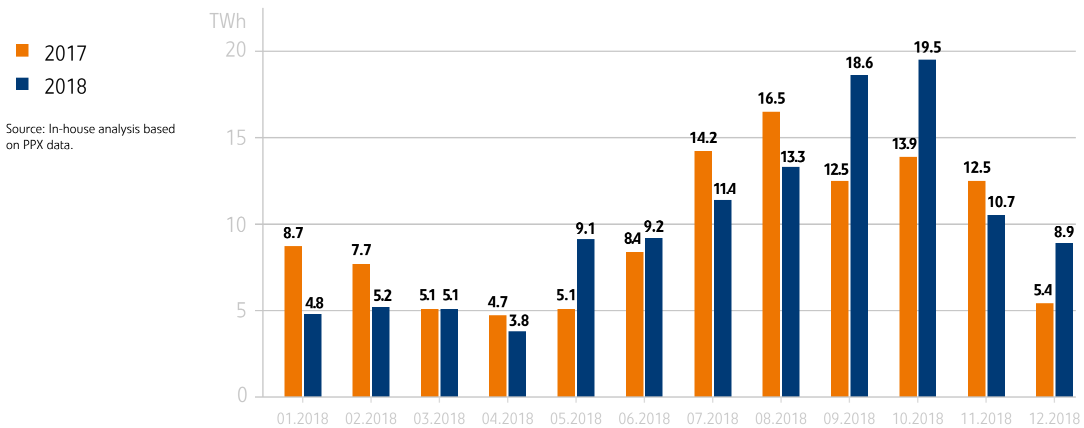
## Gas storage

PGNiG owns 9 underground gas storage facilities in Poland. The average daily withdrawal of gas from Polish UGSFs over the withdrawal period amounted to 134 GWh in 2018, up 14% on the previous year. In the summer of 2018, gas was injected into storage at an average rate of 119 GWh/day, down 12 GWh/day on 2017.

## Polish Power Exchange

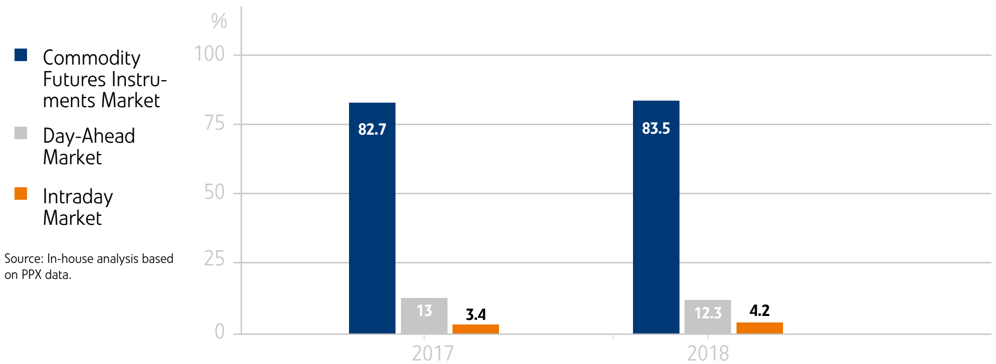
PGNiG is the leader of gas trading on the PPX. According to PPX data, in 2018 the total gas trading volume was 143.3 TWh, of which 119.6 TWh was traded on the commodity futures market (RTT). This means that almost 83% of gas trades in 2018 were executed under contracts with maturities of a year, season (summer, winter), quarter, month, and week.

### Commodity futures (RTT) trading volume on the PPX in 2017 and 2018




Source: In-house analysis based on PPX data.

### Contracts traded on the PPX in 2017 and 2018



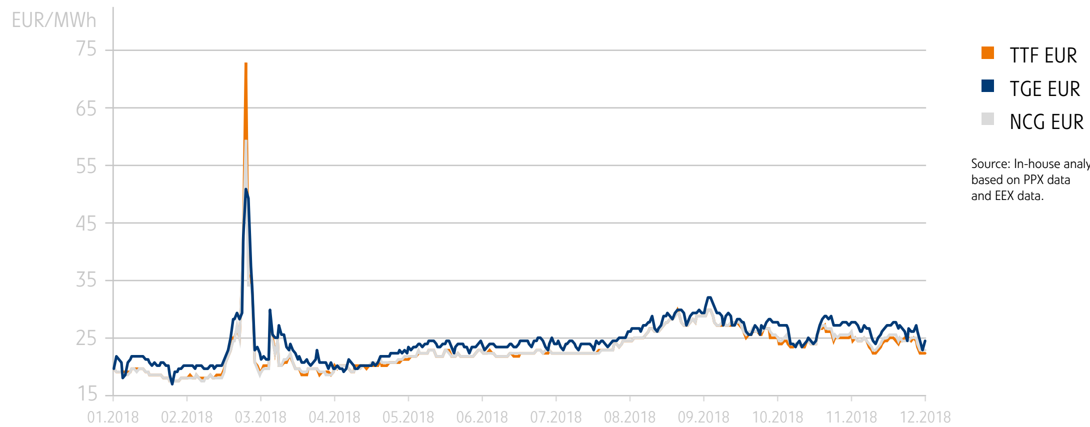

Source: In-house analysis based on PPX data.

In 2018, the total volume of gas traded on the PPX grew by 3.4%. The largest number of trades (83% of the total, as in 2017) were executed on the futures market. The futures trading volume (RTT) increased by 4.3%, to a record number of around 120m contracts. It is worth noting that the trading volume on the Day-Ahead Market decreased by 8.6%, while trading on the Intraday Market increased by 28.5%.

In 2018, the average spot price of gas in Poland was PLN 103.17/MWh, up 29.2% year on year. Gas prices in Poland were strongly correlated with gas price levels in Germany and other European markets. The average spread between spot prices on the PPX and the GASPOOL hub decreased from EUR 1.49/MWh in 2017 to EUR 1.40/MWh in 2018, that is by 5.9%.

Gaspool (GPL) - German gas hub, a virtual natural gas trading in northern Germany.

### Spot price of gas at PPX, TTF and NCG in 2018

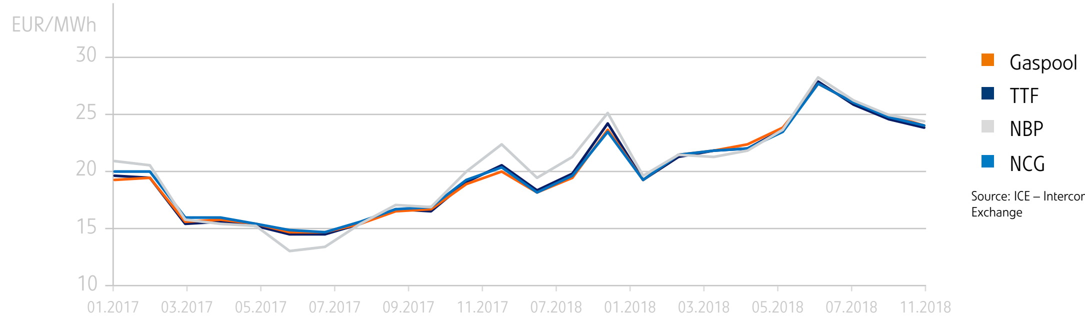



Source: In-house analysis based on PPX data and EEX data.

## Natural gas prices in 2018

In 2018, natural gas prices in Europe increased on average by 31% year on year, to EUR 23.16/MWh from EUR 17.67/MWh in 2017. The highest price increases were recorded in Germany (GASPOOL) and in the UK (NBP), of 32% on average, while the lowest were seen in Poland (29%).

### Average monthly spot prices of natural gas at selected European hubs in 2017–2018.




Source: ICE – Intercontinental Exchange

In Europe, the air temperature in winter was often lower than the seasonal standard, which boosted the demand for gas used for heating purposes. The temperature in the second half of February was as much as 12°C below the average. The higher demand caused a surge in gas prices in late February and early March, the elevated price levels continuing into April.

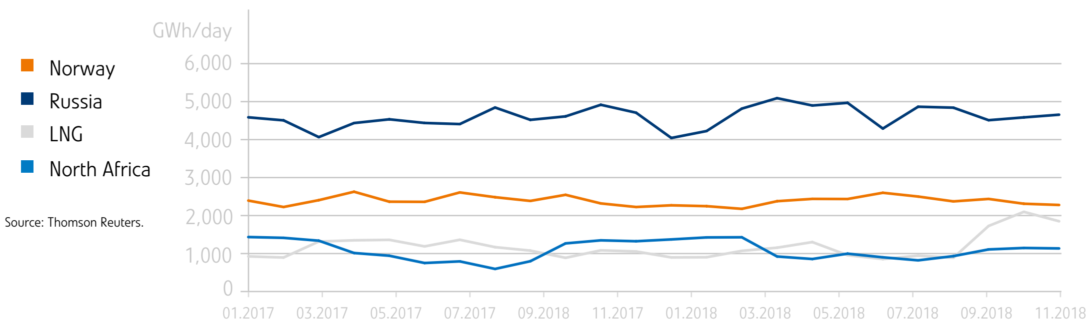
In Q2 2018, gas prices were growing steadily. At the beginning of June, the Dutch Minister of Economy announced that production from Groningen, Europe's largest gas field, was to be reduced to 12 bcm on average per year starting from 2020, although – as declared earlier – that target was originally expected to be achieved in 2022. At present, gas volumes produced from the field amount to 19.4 bcm per year.

In Q3 2018, low supply of LNG was among the strongest factors affecting gas prices in Europe. Asia's growing demand and rising prices of gas in the region prompted LNG exporters to redirect some of their supplies from Europe to Asia. In addition, at the end of winter the volumes of gas held in storage in most Western European countries were very low. As a result, the gas injection rates in summer were much higher than the year before, which reduced the supply of gas on the continent. The growing prices of coal and carbon dioxide emission allowances led to higher gas consumption in the power generation sector. In September, the average price of gas on TTF was EUR 27.65/MWh. In the same month, there were also unexpected disruptions in gas supplies from the Gullfaks and Asgard fields in Norway.

The fourth quarter saw a decline in gas prices on the European market, as they followed the falling prices of other energy carriers, namely crude oil and coal. The trade dispute between the United States and China had an added adverse impact on commodity markets. High gas inventory levels in Asia significantly reduced the region's demand for LNG supplies. In consequence, large volumes of LNG were sold in Europe.

In 2018, the total volume of gas imported to Europe via pipelines was 3,463 TWh, of which 49% (1,697 TWh) originated from Russia. The share of Russian imports was close to the 2017 level. Norway emerged as the second largest supplier of gas to Europe, providing 876 TWh (80 bcm), or 25% of total imports. The share of gas imports from Norwegian deposits fell 1pp. Volumes of gas imported from North Africa totalled 412 TWh (37.5 bcm). LNG deliveries to Europe amounted to 462 TWh.

### Sources of fuel imports to Europe,




Source: Thomson Reuters.

### Gas inventory levels

At the end of 2018, Polish gas storage facilities were filled to approximately 70% of capacity, down 8pp on the end of the previous year. In other European countries, the levels of gas storage increased, most notably in the UK, up 23% year on year.

### Progress in implementing infrastructural projects on the European gas market

**The Baltic Pipe**

The Baltic Pipe project is a strategic infrastructure project aimed at creating a new gas supply corridor on the European market. It is to enable the transmission of gas directly from deposits located in Norway to markets in Denmark and Poland, as well as to consumers in the neighbouring countries. The annual transmission capacity of the Baltic Pipe will reach up to 10 bcm to Poland and up to 3 bcm to Denmark and Sweden.

In January 2018, PGNiG signed transmission agreements with GAZ-SYSTEM and Energinet, and on November 30th 2018 GAZ-SYSTEM and Energinet made final investment decisions, implementation of which is a precondition for launching the provision of gas transmission services via the Baltic Pipe. The positive investment decisions having been made by both GAZ-SYSTEM and Energinet means that the companies committed to building the gas pipeline as part of the Baltic Pipe project.

### Outlook for gas market

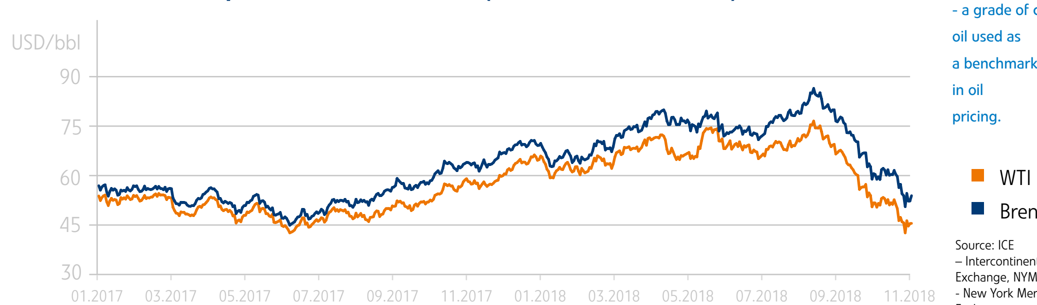
According to analysts, the price of natural gas in Europe will be gradually falling in the coming years due to the oversupply of LNG on the global market. This situation will be caused by increased production of shale gas in North America and Australia and launch of new units for liquefying natural gas, which will enhance competitiveness on the LNG market. The strongest growth in demand for LNG will be seen in Asia, although its rate will be slower than in 2017–2018. Europe, with its growing demand, will continue to be a balancing market for global LNG supplies.

## Crude oil market

In early 2018, the prices of crude oil continued to grow at rates similar to those recorded in H2 2017. Key factors contributing to the steady price increase included the honouring of the output reduction deal by OPEC members and countries cooperating with the organisation, including Russia. Some of the oil producers even reduced their output below the agreed levels.

### Crude oil prices in 2018

### Brent and WTI oil prices in 2017 and 2018 (month ahead contract)




WTI - (ang. West Texas Intermediate) - a grade of crude oil used as a benchmark in oil pricing.

Source: ICE – Intercontinental Exchange, NYMEX - New York Mercantile Exchange

In the first quarter of 2018, there was a short-lasting slump in oil prices attributable to sharply rising numbers of producing wells in the United States. In March, however, the oil price rebounded to continue the upward trajectory in response to, among others distressing news from Libya where local militia broke into the production facilities zone in Sharara, one of the largest oil fields in the country.

In the second quarter, the price of crude oil continued to rise, pushed by lower crude production in Venezuela. Globally lower oil supply encouraged producers in North America to increase their output. In May, production in the United States (10.73m bbl/d) came close to the output volumes recorded by the global leader – Russia (11m bbl/day), causing a drop in oil prices at the end of May and beginning of June, in particular of the benchmark WTI grade.

The third quarter in the oil market was marked by growing risk of insufficient global supply. On the other hand, the Chinese-American trade war raised investor concerns over the economic slowdown and faltering global oil demand.

At the beginning of Q4 2018, crude oil prices reached their all-year high. In early October, a month-ahead Brent crude contract was worth USD 86.29/bbl. Then, in response to the exemption of eight countries from US sanctions banning the import of crude from Iran, the prices started to fall sharply. The threat of insufficient oil supply on the global market waned, which was soon reflected in the price of the commodity dropping 24% in November. At their meeting in December, OPEC members and countries cooperating with OPEC agreed to cut oil output in 2019 by 1.2m bbl/day.

1 barrel of crude oil is equal to approximately 42 US gallons or 35 UK gallons.

## Global oil demand and supply

| million bbl/d | Demand | | Supply | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| OECD | 95.29 | 94.47 | 59.38 | 54.78 |
| including the US | 40.92 | 39.91 | 35.66 | 31.31 |
| Non-OECD | 104.85 | 102.65 | 140.80 | 140.63 |
| including China | 27.75 | 26.73 | 9.58 | 9.57 |
| including FSU countries | - | - | 29.13 | 28.64 |
| including OPEC | - | - | 78.21 | 78.57 |
| World total | 200.14 | 197.10 | 200.17 | 195.43 |

Source: EIA - U.S. Energy Information Administration

In 2018, the average demand for crude oil rose by 1.54% compared with the previous year, to an average of 100.07m bbl/d. The global oil supply rose in 2018 by 2.43% year on year. The strongest oil output increase was recorded in the United States – by 13.9%, or 2.18m bbl/d. The strongest decline in production (by 4.52%, or 0.14m bbl/d) was recorded in the North Sea region. The OPEC countries also slightly cut their output, by 0.45%, to an average of 39.11m bbl/d.

### Outlook for crude oil market

At the beginning of January 2019, the United States Energy Information Administration (EIA) revised downwards its 2019 Brent crude price forecast by about 0.8%, to USD 60.52/bbl and maintained its projections with respect to WTI of USD 54.19/bbl. EIA explained that the downward revision of the Brent crude price forecast was attributable to the planned record-high output in the US, expected to reach an average of 12.07m bbl/d in 2019.

In a longer term, the oil prices may grow. 2020 is the year of entry into force of the most recent regulations by the International Maritime Organization, imposing restrictions on fuels used in marine vessels, including those carrying crude oil.

Moreover, according to International Energy Agency (IEA) analysts, the oil prices may rise in the coming years driven by growing demand. The main sectors in which demand is expected to grow include production of plastics and petrochemicals in developing countries.

EIA - U.S. Energy Information Administration.

International Energy Agency (IEA) - an international organization based in Paris, affiliated to the OECD. Its purpose is to prevent interruptions in crude oil supplies

## Regulatory environment

### Regulatory environment in Poland

**Energy Law**

The Energy Law is the main legal act governing the operation of the energy sector. In particular, it specifies the rules of development of the national energy policy, matters concerning the supply and use of fuels, energy and heat, and lays downs rules of operation applicable to energy companies. The Energy Law also defines the bodies competent for matters of fuel and energy management.

As at December 31st 2018, the PGNiG Group held the following licences granted by the President of the Energy Regulatory Office (URE) under the Energy Law:

- four licences to trade in gas fuels (PGNiG, PGNiG OD, PST, PST Europe Sales);
- two licences to trade in natural gas with foreign partners (PGNiG, PST);
- four licences to produce electricity (PGNiG, PGNiG TERMIKA, PGNiG TERMIKA EP, PSG Inwestycje Sp. z o.o.);
- four licences to trade in electricity (PGNiG, PGNiG OD, PGNiG TERMIKA, PGNiG TERMIKA EP);
- two licences to produce heat (PGNiG TERMIKA, PGNiG TERMIKA EP);
- one licence to trade in heat (PGNiG TERMIKA EP);
- two licences to transmit heat (PGNiG TERMIKA, PGNiG TERMIKA EP);
- two licences to liquefy natural gas and regasify LNG at LNG regasification plants (PGNiG, PSG);
- one licence to store gas fuel in storage facilities (GSP);
- one licence to distribute gas fuels (PSG);
- one licence to distribute electricity (PGNiG TERMIKA EP).

**In 2018, a number of amendments were introduced to the Energy Law, all of them of high relevance to the functioning of Poland's natural gas and electricity markets.**

The Energy Law of April 10th 1997 (consolidated text: Journal of Laws of 2018, item 755 as amended).

### Act on Mandatory Stocks

Act on Mandatory Stocks lays down the rules of creating and maintaining emergency stocks of natural gas, and procedures for monitoring and proper enforcement of the act. The act also sets out the rules to be followed in the event of threat to Poland's energy security.

### Energy Efficiency Act

The Energy Efficiency Act establishes an energy efficiency obligation scheme which implements into the Polish legal system the provisions of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC. According to these laws, entities covered by the statutory obligation are required to reach final energy savings of 1.5% per year. The Energy Efficiency Act indicates two principal ways to fulfil this obligation:

- to implement a project or projects designed to improve end users' energy efficiency;
- to obtain an energy efficiency certificate and to submit the certificate to the President of URE for redemption.

The act provides for the option to fulfil the obligation by paying a substitution fee. In principle, though, it may not be higher than 30% of the 2016 obligation, 20% of the 2017 obligation and 10% of the 2018 obligation. The act significantly increases the substitution fee and provides for its annual indexation. It also imposes an obligation to conduct an energy efficiency audit every four years.

### Capacity Market Act

The Capacity Market Act defines the organisation of the capacity market and sets out the rules of provision of the service consisting in remaining on standby to supply electricity to the power system. The act aims to ensure the security of electricity supplies to end users by establishing a dedicated support system. Following the entry into force of the Capacity Market Act, both PGNiG and PGNiG TERMIKA will generate additional revenue.

In 2018, the Capacity Market Act was amended following the adoption of the Act on the Promotion of Electricity from High-Efficiency Cogeneration. The amendments clarified mutual relations between the support systems.

### Act on the Promotion of Electricity from High-Efficiency Cogeneration

The Act on the Promotion of Electricity from High-Efficiency Cogeneration sets out a framework for the provision of support for electricity from high-efficiency cogeneration units and provision of guarantees of origin for such electricity. The mechanism of support for electricity from high-efficiency cogeneration (based on certificates of origin) expired at the end of 2018. As of the beginning of 2019, a new mechanism is in place to encourage the construction of new cogeneration units and to maintain electricity generation from existing high-efficiency cogeneration sources, which would not be able to operate without such support due to a financial gap in operating expenses. The support will only be available for units for which carbon dioxide emissions intensity does not exceed 450 kg/MWh of generated energy (electricity and heat jointly).

The Act on Stocks of Crude Oil, Petroleum Products and Natural Gas, and on Rules to be Followed in the Event of Threat to National Fuel Security or Disruptions on the Petroleum Market of February 16th 2007 (consolidated text: Journal of Laws of 2017, item 1210, as amended)

The Energy Efficiency Act of May 20th 2016 (Journal of Laws of 2016, item 831).

Capacity Market Act of 8 December 2017 (consolidated text: Journal of Laws of 2018, Item 9).

Act on Special Hydrocarbon Tax of July 25th 2014 (consolidated text: Journal of Laws of 2016, item 979).

**Act on Special Hydrocarbon Tax**

The Act on Special Hydrocarbon Tax (SHT) stipulates a special tax regime, where the tax base is the surplus of revenue generated from hydrocarbon extraction activities in a given year over the eligible expense incurred in the tax year.

The obligation to pay the tax arises on revenue generated from January 1st 2020 onwards, with the proviso that the record-keeping obligations related to SHT and obligations to submit SHT filings to the relevant tax authorities are to be fulfilled as of January 1st 2016.

In December 2018, a draft Act Repealing the SHT Act and Amending Certain Other Acts was published on the Government Legislation Centre's website, aimed at repealing the SHT and accelerating the levy of taxes on the production of certain minerals. The proposed repeal of a special hydrocarbon tax is a positive news for PGNiG Group, whereas acceleration of the application of a mineral extraction tax would mean an additional tax burden for the Group since 2019.

**Geological and Mining Law**

The Geological and Mining Law specifies, among other things, the rules of licensing the exploration for and extraction of minerals as well as the terms and conditions for performing geological work, extraction of minerals from deposits, storage of waste matter in rock mass (including in worked-out caverns), protection of mineral deposits, underground waters and other components of the environment in connection with geological works and extraction of minerals.

Since 2016, in accordance with the amended Geological and Mining Law, a single licence is granted for exploration, appraisal, and extraction of hydrocarbons. The grant of such combined licence is only possible in tender proceedings carried out ex officio. It should be pointed out that in 2017 the Minister of Environment announced the tender procedure for combined licence grant with respect to eight out of the ten areas. In 2018, 16 areas were put out to tender in two rounds.

In June 2018, the Geological and Mining Law was amended to introduce material changes to the hydrocarbon licensing system. Under the amended law, a business entity may apply for an open door licence for the exploration for and appraisal of hydrocarbon deposits while under the previous regime, licences were granted exclusively for areas designated by the government. It is now also possible to apply for another conversion of a hydrocarbon exploration and appraisal licence into a combined exploration, appraisal, and production licence by the end of 2018; and the obligation to provide security in case of non-performance or improper performance of the conditions specified in the licence has been waived.

**National Commodity Policy**

In 2018, the Minister of Environment announced draft assumptions for the National Commodity Policy. The document will be the basis for further work on the National Commodity Policy that may be undertaken and continued by representatives of all ministries, businesses operating in the sectors concerned, scientific institutions and social groups. The adoption of the National Commodity Policy will lead to a number of legislative changes that will affect the terms on which licensed activities are conducted in Poland.

The Council of Ministers' Regulation of April 24th 2017 on the minimum level of diversification of foreign sources of gas supplies (Journal of Laws of 2017, item 902).

**Diversification Regulation**

Regulation 'Diversification Regulation ' prescribes the maximum share of gas that may be imported from a single country of origin in the total volume of gas imported in a given year. For 2017-2022, the maximum share is 70%, and for 2023-2026 – 33%.

Regulation of the Minister of Economy of March 15th 2018 on specific conditions for the operation of the gas system (Journal of Laws of 2018, item 640).

**System Regulation**

The Regulation on specific conditions for the operation of the gas system specifies the rules of operation of the gas system set forth in the Energy Law. In particular, it lays down the rules and conditions for applying for grid connection, procedure for trading in gas fuel and ability to provide services in the gas system, including the manner of handling complaints, balancing and transmission constraints management; it also outlines the terms of cooperation between market participants.

According to the Minister of Energy's Regulation of January 10th 2017 equipment and installations used for gas fuel transmission may be only connected to gas transmission networks with a diameter of DN 1,300 or higher. The regulation has also raised the capacity threshold for customers authorised to be connected to the transmission network from 5,000 to 45,000 cm/h, thus expanding the operating reach of distribution companies and stabilising the gas fuel transmission and distribution market.

The Regulation of the Minister of Energy of September 21st 2018 amending the Regulation on specific conditions for the operation of the gas system introduced the institution of an emergency supplier which would be responsible for the supply of gas to an end user if their contractual supplier ceases to supply gas for reasons attributable to such contractual supplier.

The Regulation of the Minister of Economy of July 2nd 2010 on specific conditions for the operation of the gas system (consolidated text: Journal of Laws of 2018, item 1058, as amended)

**Tariff Regulation**

Tariff Regulation sets out the principles for determining tariffs for gas fuels, in particular the calculation of prices and rates, as well as the rules of settlements between market participants. Currently, the prices of natural gas sold to households are regulated.

In 2018, PGNiG Obrót Detaliczny held gas fuel trading tariff, Gas Storage Poland applied gas storage services tariffs, whereas PSG applied gas distribution services tariffs and liquefied natural gas services tariffs.

In Generation segment, their own tariffs held: PGNiG TERMIKA (for heat generated) and PGNiG TERMINKA EP (for heat generated and electricity distribution services).

## European regulatory environment

ACER - Agency for Cooperation of Energy Regulators, an organization that aims to coordinate and support the cooperation of national regulators.

**Third Energy Package**

In 2018, the Third Energy Package continued to be the all-inclusive framework governing the European energy (gas and electricity) market. The Package included five acts of law drawn up by EU institutions in 2009.

The objective of the Package is to boost competition on the European energy market and create the internal energy market based on mechanisms such as ownership unbundling, organisation of cooperation between regulators and energy companies (ACER, ENTSO-E and ENTSO-G), or introduction of network codes.

ENTSO-G - European Network of Transmission System Operators for Gas, organization of European transmission system operators.

**Directive on the Promotion of Clean and Energy Efficient Road Transport Vehicles**

Directive on the promotion of clean and energy-efficient road transport vehicles, referred to as the Clean Vehicles Directive, complements the EU's horizontal legislation on public contracts award. The directive requires that – when awarding public contracts – lifetime energy and environmental impacts, including energy consumption, be taken into account when purchasing road transport vehicles, which is to promote and stimulate the market for clean and energy-efficient vehicles, reduce emissions of $CO_2$ and of other pollutants as well as improve energy efficiency.

Regulation (EU) No. 994/2010 of the European Parliament and of the Council of October 20th 2010 concerning measures to safeguard security of gas supply.

### SoS Regulation

SoS Regulation entered into force on November 1st 2017. Its purpose is to prevent disruptions in the supply of natural gas to the Member States, or to mitigate their impact if they occur.

In 2018, work was under way to harmonise the Polish legislation and procedures in place within the PGNiG Group with the requirements of the SoS Regulation.

Commission Regulation (EU) 2017/460 of 16 March 2017 establishing a network code on harmonised transmission tariff structures for gas

### TAR NC Regulation

The purpose of Commission Regulation (EU) is to reduce discrepancies between tariff models applied in individual Member States. Legislative work carried out by the European Commission, aiming to unify the tariff structures in the EU, is designed to facilitate cross-border trade conducted by participants of the European gas market.

Commission Regulation (EU) 2017/459 of 16 March 2017 establishing a network code on capacity allocation mechanisms in gas transmission systems and repealing Regulation (EU) No 984/2013

### NC CAM Regulation

NC CAM Regulation is to promote the building of correctly operating interconnected transmission network systems, which would provide the foundation for further development of the EU internal energy market through harmonisation of mechanisms that ensure transparent and non-discriminatory terms of transmission capacity allocation.

The provisions of the NC CAM Regulation apply to interconnections between Member States. In order to ensure that all parties can gain access to interconnector transmission capacities on equal and non-discriminatory terms, the allocation of capacity is made through auctions organised by transmission system operators, at which intraday, daily, monthly, quarterly and annual products are offered.

### EU ETS

The EU Emission Trading Scheme imposes the obligation to account for $CO_2$ emissions and regulates the allocation of free emission allowances for heat and electricity. Under the ETS Directive, emitters of greenhouse gases (including $CO_2$) are obliged to account for their emissions by surrendering their $CO_2$ emission allowances by April 30th each year for the preceding year. If the number of emission allowances is too small, the excess emissions penalty of EUR 100 per tonne of $CO_2$ is imposed, and the operator must acquire and surrender the necessary number of emission allowances.

In 2018, work was continued on the Innovation Fund ("IF"), aimed to support the RES technologies, energy storage and capture of carbon dioxide from the atmosphere. The IF, in accordance with the adopted revision of the EU ETS Directive, would be supported by EU ETS emission allowances. At the end of the fourth quarter of 2018, the European Commission submitted a draft delegated act establishing the IF.

At the same time, work was under way on a draft list of sectors exposed to carbon leakage. Inclusion of the natural gas production sector in the list would mean additional emission allowances. Public consultation is being conducted by the European Commission, expected to last until the end of January 2019.

## Regulatory risk

### Elimination of administrative price control

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In connection with the ruling by the Court of Justice of the EU of September 10th 2015 on the system of regulated gas fuel prices, changes to the regulations on administrative price control were required. PGNiG expressed its opinion that liberalised gas prices were the key element of the overall gas market liberalisation. At the same time, the Company emphasised that the process must be conducted in such a manner as to guarantee billing continuity in contracts with customers, as the inability to guarantee continuity of billing is a risk to the Company's business.

### Obligation to diversify gas imports

●○○ ●○○ ↘

The Council of Ministers' Regulation of April 24th 2017 on the minimum level of diversification of foreign sources of gas supplies prescribes the maximum share of gas imported from a single country in total gas imports in a given year. In 2017–2022, the share may not exceed 70%.

### Upholding of the decision to exempt the OPAL pipeline from the Third Energy Package regime

●●● ●●● →

Pursuant to two decisions issued under Article 36 of Directive 2009/73 of July 13th 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/54 /EC, Opal Gastransport GmbH, the operator of the OPAL pipeline, benefits from the exemption from the need to grant third-party access to transmission capacity. The infrastructure is used by Gazprom, which has access to 50% (under the decision of 2009) and in fact 100% (under the decision of 2016) of the OPAL pipeline's capacity. As a result of the recent exemption from the third-party access (TPA) rule, Gazprom is able to transmit approximately 55 bcm of natural gas annually to the European Union, bypassing the traditional supply routes (the Yamal and Bratstvo gas pipelines).

The exemption decisions adopted by the European Commission and the German regulator Bundesnetzagentur in 2016 allow the Russian gas major to implement its long-term strategy of preventing the development of supply diversification projects in Central and Eastern Europe and thus make the region dependent on Russian gas. In view of these facts, PGNiG, PST, the Polish government and Naftohaz (a Ukrainian gas trading company) filed complaints against the decision of the European Commission to the General Court of the European Union.

On December 14th 2017, one of the complaints filed by PST was found inadmissible due to formal reasons. A decision to the same effect was served on March 21st 2018 with respect to the complaint filed by PGNIG. Two appeals were submitted to the Court of Justice of the European Union against the decision of December 14th 2017 concerning PST's complaint.. As regards PGNiG, an appeal was lodged on May 24th 2018. It should be noted that the General Court has not yet issued any ruling concerning the subject matter of any of the proceedings.

### Lower amount of EU funding allocated to gas projects

●●○ ●●○ ↗

Work is currently under way on a new text of the ERDF Regulation. The draft proposed by the European Commission provided for, among other things, the exclusion of projects related to transport of gas, processing and burning of fossil fuels. The exclusion of the natural gas industry, particularly in the area of distribution, would pose a significant risk to the PGNiG Group and its ambitious plans for gas network rollout in Poland.

### Winter package (electricity) – Clean energy for all Europeans

Some provisions of the legislative proposals included in the 'Clean energy for all Europeans' package pose a significant threat to the PGNiG Group's operations. First of all, the introduction of an emission limit (at the currently proposed level of 550g of $CO_2$ per 1 kWh generated) as a criterion for participation of an installation in the capacity mar-

Risk materiality level:
●○○ low
●●○ medium
●●● high

Probability that the risk will materialise:
●○○ low
●●○ medium
●●● high

Yoy change in the risk level:
↗ increase
→ no change
↘ decrease

Regulation (EU) No 1301/2013 of the European Parliament and of the Council of 17 December 2013 on the European Regional Development Fund and on specific provisions concerning the Investment for growth and jobs goal and repealing Regulation (EC) No 1080/2006 ket may constitute a legislative barrier for the PGNiG Group's CHP plants to enter this market.

Another source of risk is the proposed introduction of binding targets for Member States regarding the share of energy from renewable sources, energy efficiency and individual trajectories to achieve these targets.

**New EU legislative package for the natural gas market**

●●● ●●○

The new European Commission (to be appointed by the newly elected European Parliament in 2019) is likely to commence legislative work on a new European regulatory framework for the natural gas market (the Fourth Package). Several reports by external consultants are expected to be delivered in the first half of 2019, which are to help identify the potential direction for the new gas sector regulatory framework.

The key risk in this area lies in potential failure to recognise the regional specificities and adoption of EU law that would adversely impact the development of the gas sector in Poland.

**Draft amendment to Directive 2009/73**

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The proposed amendment to Directive 2009/73 announced in the third quarter of 2017 is aimed at confirming the applicability of the directive to the infrastructure associated with imports to the European Union, extending as far as the limits of the EU's jurisdiction, understood as the limit of territorial seas and exclusive economic zones of Member States. The directive addresses the demands made by some entities operating on the internal market in natural gas, including PGNiG, according to which it is necessary to define the limits of applicability of EU laws. Under the existing legal regulations this is unclear, which disrupts the operation of the internal market in natural gas and adversely affects the integration of Member States.

## Non-compliance risk

●●● ●○○ →

PGNiG has an organisationally and functionally separated Compliance unit. In line with the compliance risk management model, each area at risk of non-compliance was assigned a dedicated compliance risk area manager (leader), who is in charge of ensuring that compliance standards are met.

Compliance risks (risks of breaching compliance standards) may arise in various areas and may materialise:

- immediately as fines, damages, compensation or other liabilities the Company may be required to pay;
- as damage to the Company's image, which could also have its financial implications;
- in the Company's operations and as a factor affecting the value for stakeholders, including shareholders.

# Exploration and Production


PGNiG Upstream Norway AS - formerly PGNiG Upstream International AS.

See also: www.norway.pgnig.pl

See also: www.exalodrilling.com

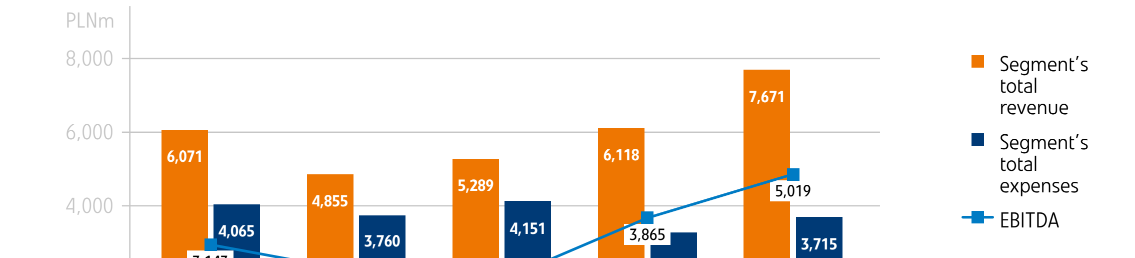
See also: www.geofizyka.pl

## Segment description

The segment's business focuses on extracting hydrocarbons from deposits and preparing them for sale. This involves exploring for and extracting natural gas and crude oil from deposits, and includes geological surveys, analysis of geophysical data, drilling, and development of and production of hydrocarbons from gas and oil fields. The work is conducted by the segment on its own or jointly with partners, under joint operations agreements. The segment relies on storage capacities available at the Bonikowo and Daszewo UGSFs.

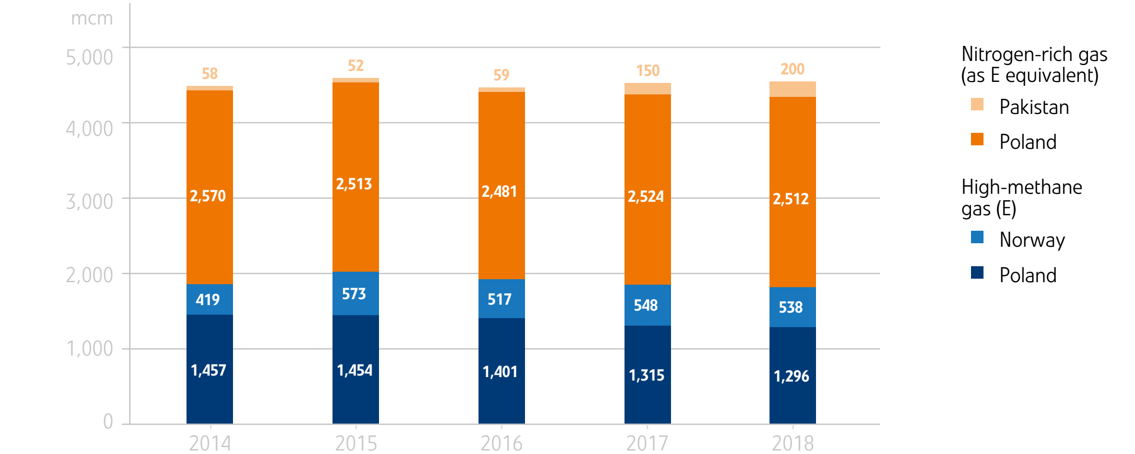
Companies in the segment: PGNiG SA, PGNiG Upstream Norway AS, PGNiG Upstream North Africa B.V., Exalo Drilling SA, GEOFIZYKA Toruń Sp. z o.o., GEOFIZYKA Kraków Sp. z o.o. in liquidation.

### Segment's figures

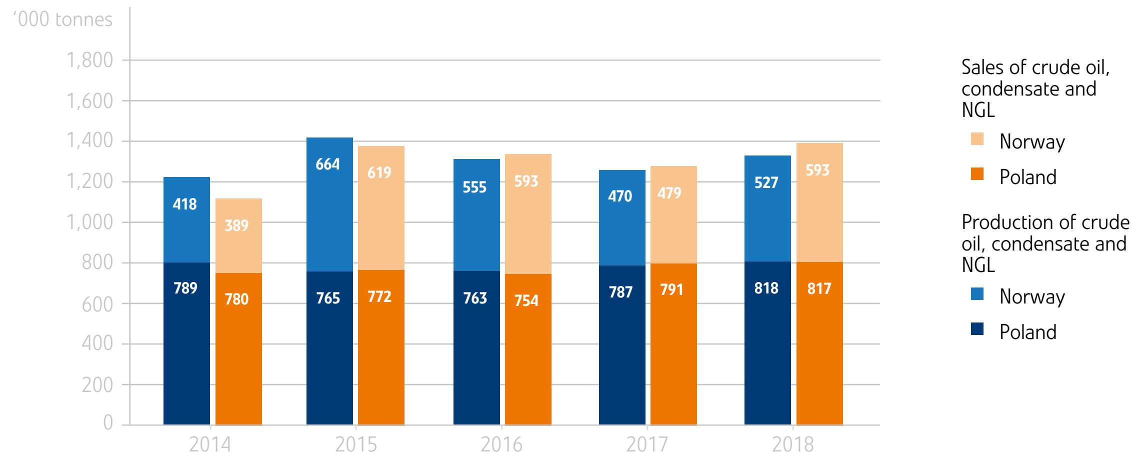



* Data not restated, as reported.
** Data restated according to the new segmentation of the PGNiG Group's operations.

### Natural gas production by the PGNiG Group




### Crude oil, condensate and NGL, PGNiG Group



The segment's revenue rose by PLN 1,553m, to PLN 7,671m, which represents a 25% increase on 2017. At the end of 2018, the Exploration and Production segment's operating profit was PLN 3,956m, up PLN 1,154m year on year. EBITDA came in at PLN 5,019m, up PLN 1,154m year on year.

Compared with 2017, the segment's gas production increased by 9 mcm of high-methane gas equivalent. Lower output in Poland (down by 31 mcm) and Norway (down by 10 mcm) was offset by higher production of nitrogen-rich gas in Pakistan (by 50 mcm, measured as high-methane gas equivalent). In 2018, crude oil sales rose by 140 thousand tonnes year on year, including by 26 thousand tonnes in Poland, and by 114 thousand tonnes in Norway, mainly on increased production from Skarv and Gina Krog fields.

The segment's operating expenses increased by PLN 401m (12%) year on year, mainly due to higher costs of dry wells and seismic surveys written off (up by PLN 287m year on year), employee benefits (up by PLN 72m year on year) and transmission services (up by PLN 64m year on year).

## Domestic operations

### Licences in Poland

As at January 1st 2018, PGNiG held 48 licences: 22 licences for exploration for and appraisal of crude oil and natural gas deposits, 1 suspended licence (as the conversion procedure was not completed and the licence expired after the relevant application was filed with the licensing authority) and 25 combined (exploration, appraisal and production) licences. As at December 31st 2018, PGNiG held 47 licences: 20 licences for exploration for and appraisal of oil and gas deposits and 27 combined licences (one licence was relinquished).

As at December 31st 2018, PGNiG held a total of 203 production licences in Poland. In 2018, PGNiG was awarded two new production licences (Zbąszyń and Dzików Stary), 34 licences were amended, and 12 were discontinued.

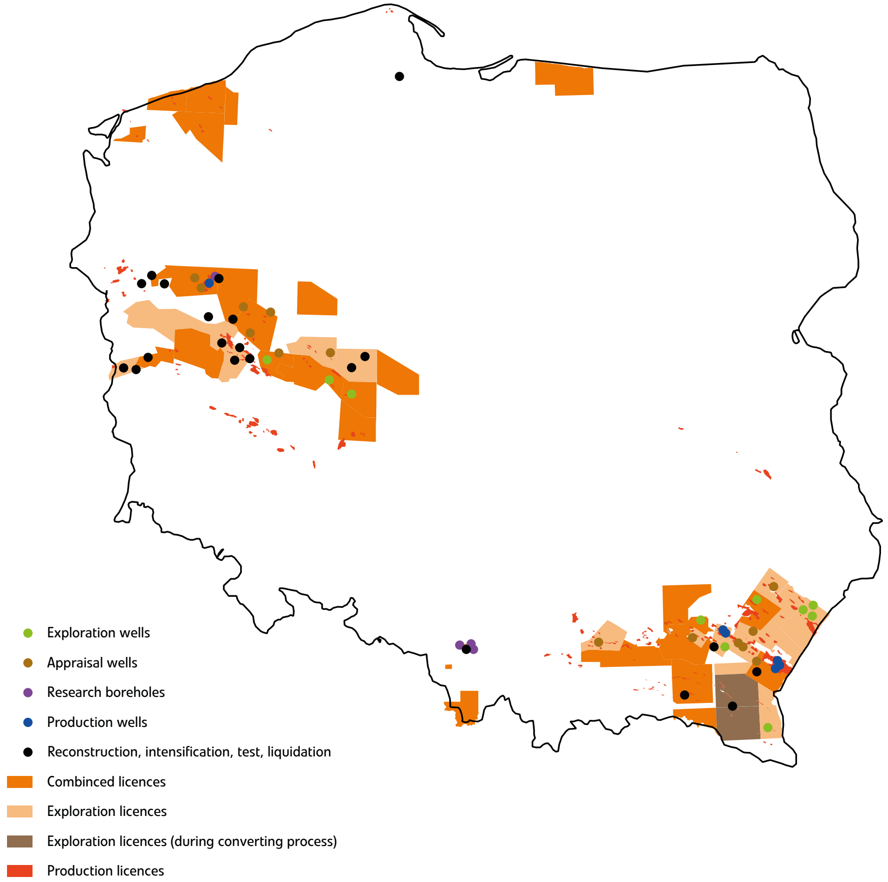
### Work performed

Throughout 2018, PGNiG was involved in crude oil and natural gas exploration and appraisal projects in the Carpathian Mountains, Carpathian Foothills, Sudetian Monocline, and Polish Lowlands, both on its own and jointly with partners. Out of the 36 boreholes drilled in 2018, the target depth was reached by 32, including: four research, nine exploration, 13 appraisal and six production wells.

As at the end of 2018, formation test results were obtained from 21 boreholes (one research, nine exploration, five appraisal and six production wells). The 21 wells with known formation test results included: 17 positive and three dry wells (all of which were exploration wells without a commercial flow of hydrocarbons that were abandoned) and one research well (abandoned – due to its research nature, the well is not subject to reservoir classification).

**In 2018 the E&P segment recorded operating profit in the amount of as much as PLN 3,956 million.**

## PGNiG's licences and wells in 2018




In 2018, workovers, enhanced recovery treatments, formation tests and abandonment operations were also performed on wells drilled in previous years.

With its oil production volume in Poland of over 800,000 tonnes in 2018, PGNiG is one of Poland's leading producers of crude oil. As regards total domestic gas production, PGNiG's share is approximately 90%.

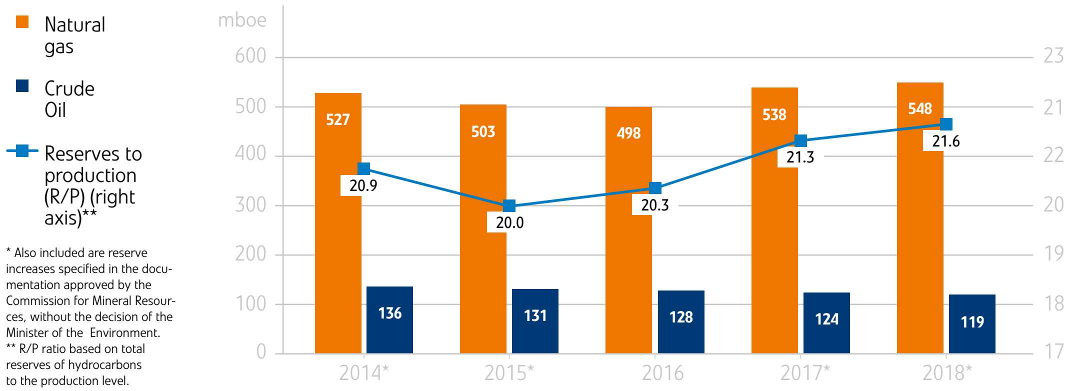
## No. of production facilities

| No. of production facilities | Sanok | Zielona Góra |
|---|---|---|
| Gas production facilities | 18 | 10 |
| Oil production facilities | 5 | 1 |
| Oil and gas production facilities | 13 | 7 |
| Total | 36 | 18 |

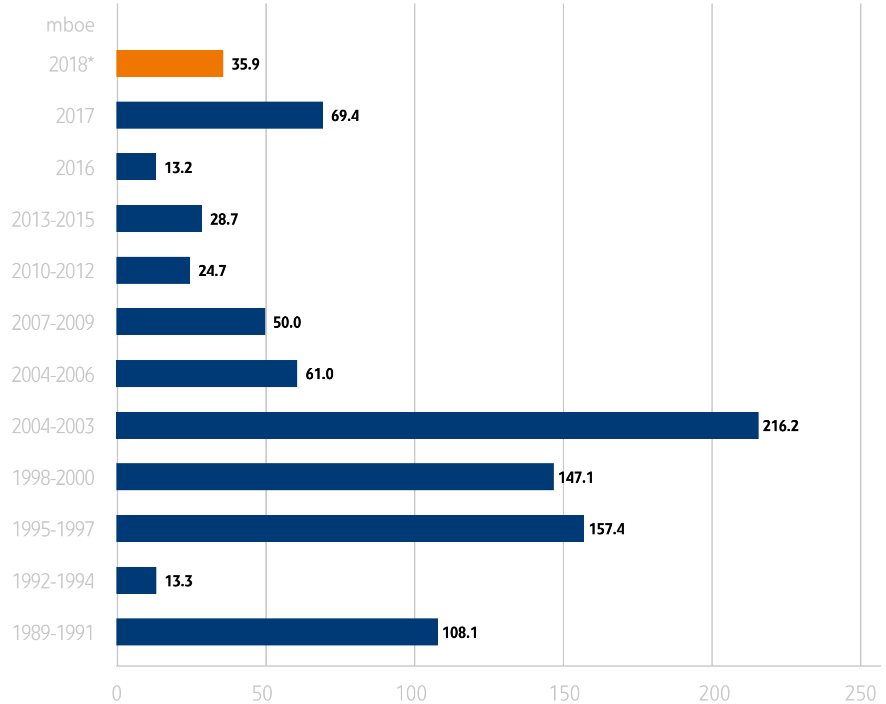
**Collaboration with other entities**

In 2018, in the PGNiG licence areas the Company conducted joint operations with other entities, including LOTOS Petrobaltic SA and ORLEN Upstream Sp. z o.o. Furthermore, PGNiG was engaged in exploration work with other entities in Pakistan and Norway.

**Recoverable reserves documented by PGNiG in Poland in 2014–2018**




* Also included are reserve increases specified in the documentation approved by the Commission for Mineral Resources, without the decision of the Minister of the Environment.
** R/P ratio based on total reserves of hydrocarbons to the production level.




* including production from fields: Młodasko, Połęcko, Czarna Wieś, Czarna Wieś E

Recoverable reserves - oil and gas reserves that are economically and technically feasible to extract at the existing price of oil.

**Sales of key products**

The main products sold by the segment are crude oil, high-methane gas and nitrogen--rich gas. Other products, obtained in the process of crude refining, include crude condensate, sulfur, and propane-butane. Some of the produced nitrogen-rich gas is further treated into high-methane gas at the Odolanów and Grodzisk Wielkopolski nitrogen rejection units. Apart from high--methane gas, the cryogenic processing of nitrogen-rich gas yields such products as LNG, gaseous and liquid helium, and liquid nitrogen. Part of the natural gas extracted in Poland is sold directly from gas fields to non-PGNiG Group customers, and also within the PGNiG Group. Natural gas extracted and not sold in the upstream segment is transferred for sale to the Trade and Storage segment.

Rail deliveries of crude oil (65% of sales) were made to the refinery of the LOTOS Group in Gdańsk and to Orlen Południe's Trzebinia Production Plant (the ORLEN Group). In 2018, crude oil was also delivered by road to Orlen Południe's Jedlicze Production Plant (5% of sales), and via the PERN pipeline – to TOTSA TOTAL Oil Trading SA (30% of sales). Crude oil is sold at market prices.

**Seismic surveys, drilling and well services**

In 2018, the Geology and Hydrocarbon Production Branch of PGNiG acquired 470.78 km of 2D seismic data and 1,049.60 km2 of 3D seismic data. PGNiG Group companies provide seismic survey, well and drilling services both for other Group members and to external customers.

**Underground gas storage facilities**

PGNiG's Exploration and Production segment's gas system includes two storage facilities for L group gas (Daszewo UGSF and Bonikowo UGSF), whose main role is to regulate the operation of the nitrogen-rich gas system and store gas from nitrogen-rich gas production facilities.

**Exploration, appraisal and extraction of coal bed methane**

In 2018, as part of the second phase (research and demonstration) of the Geo-Metan project involving exploration for, appraisal and extraction of coal bed methane, detailed criteria were determined for selecting drilling sites for pre-mining coal bed methane extraction, addressed to three mining companies: Jastrzębska Spółka Węglowa SA (JSW), PGG, and Tauron Wydobycie SA. The partners provided PGNiG with a list of mines meeting those criteria. Geological and mining information as well as formal and legal data were gathered and analysed during working meetings to select the mines for further work under the project. As a result, three locations were selected: the Budryk Hard Coal Mine (JSW), the Ruda Ruch Bielszowice Hard Coal Mine (PGG) and the Brzeszcze Mining Plant (Tauron Wydobycie). In 2018, contract negotiations were commenced.

Regardless of the status of the above projects, it wasdecided to start a preparing a plan of geological operations within the licence area which – in line with current assumptions – is to cover Śmiłowice, an undeveloped hard coal deposit with associated gas. The area covered by the requested licence is now being delineated.

As part of the work performed on the Gilowice-1 and Gilowice 2H wells and in the Międzyrzecze licence area, in 2018 a set of downhole pumps were installed at the Gilowice-1 well, and a pumping operation began. After PGNiG obtained a licence for exploration for and appraisal of coal bed deposits and for extraction of methane in the Międzyrzecze area, in 2018 the Gilowice-3K and Gilowice-4H wells were dril-

Seismic 2D - reflection seismology surveys consisting in registration of seismic waves generated from a point and recorded along a designated line.

Seismic 3D - reflection seismology surveys consisting in registration of seismic waves generated from a poont and recorded over a designated area.

led (connected by intersection). Hydraulic fracturing operations were performed in the Gilowice-4H well and work to prepare the well for the pumping set commenced. In early 2019, pumping operations are planned to commence in both wells (Gilowice-3K and Gilowice-4H). In 2018, in the Międzyrzecze licence area the drilling of the Międzyrzecze-4 well was also completed. The well has been temporarily secured and is awaiting further work.

## Foreign operations

**Norway**

PGNiG UN holds interests in exploration and production licences on the Norwegian Continental Shelf in the Norwegian Sea, in the North Sea, and in the Barents Sea. Jointly with partners, the company has been extracting hydrocarbons from the Skarv, Morvin, Vilje, Vale and Gina Krog fields and working on the development of the Ærfugl (formerly Snadd) and Skogul (formerly Storklakken) fields. Additionally, PGNiG UN is preparing to develop the Tommeliten Alpha deposit, acquired in 2018, and is considering the development of the Fogelberg discovery. In the other licence areas, the company is engaged in exploration projects.

Floating Production, Storage nad Offloading Unit - a floating vessel used for offshore production of hydrocarbons, and for storage and offloading of the produced oil.

The company's main asset is the Skarv field, which has been developed using a floating production, storage and offloading (FPSO) vessel. Since 2017, PGNiG UN has been extracting hydrocarbons from the Gina Krog field, which was developed using a new production platform in the North Sea. The other fields (Morvin, Vilje and Vale) comprise a group of wells connected to the existing production infrastructure.

In 2018, the company produced a total of 527 thousand tonnes of crude oil with other fractions (measured as tonnes of crude oil equivalent) and 538 mcm of natural gas from the Skarv, Morvin, Vilje, Vale, and Gina Krog fields. The output was higher than planned, chiefly on the back of better-than-expected production from the Skarv, Morvin, Vilje and Gina Krog fields. A factor negatively affecting production volumes was a maintenance shutdown on the Vale field. In 2018, PGNiG and its partners continued to develop the Gina Krog field, which mainly included the drilling of successive production wells.

In 2018, PGNiG UN recorded an increase in its Norwegian reserves, from 83 mboe at the beginning of the year to 142 mboe at the end of 2018. The increase is mainly attributable to the acquisition of an interest in the PL044 licence, covering the Tommeliten Alpha discovery (the agreement, signed in October 2018, provides for the purchase of a 30% interest in the PL044 licence from Equinor Energy AS, resulting in a 42.38% interest in the Tommeliten Alpha field). The purchase price of the interest was approximately USD 220m, with January 1st 2018 marking the contractual transaction date.

In 2018, PGNiG UN and its partners continued to develop the Ærfugl and Skogul fields, with production launch scheduled for 2020. Development of the Ærfugl gas field means the fulfilment of strategic objectives by significantly increasing the production of natural gas to be supplied to Poland via Denmark through a new gas link called the Norwegian corridor. Both investment projects will be financed with funds generated in the course of PGNiG's operations in Norway.

In 2018, an APA 2017 round (Awards in Pre-defined Areas) was concluded, with PGNiG UN awarded interests in two exploration licences.

See also: https://www.npd.no/en/facts/production-licences/licensing-rounds/

In early 2019, an APA 2018 round was concluded, with PGNiG UN awarded interests in three new exploration licences:

- a 40% interest (as the operator) in the PL838B licence area in the Norwegian Sea; the other interest holders are: Aker BP (a 30% interest) and DEA (a 30% interest);
- a 50% interest (as the operator) in the PL1017 licence area in the Norwegian Sea; the remaining 50% interest was acquired by Equinor;
- a 35% interest (as a partner) in the PL1009 licence area in the Norwegian Sea; the remaining 65% interest was acquired by ConocoPhilips.

Under the PL1009 licence, an exploration well will be drilled within two years. In addition, as the PL838B and PL1009 licence areas are located close to the Skarv field, PGNiG UN will be able to draw on its own oil and gas exploration experience in the region. The licences awarded to PGNiG UN during the last two APA licensing rounds have significant gas potential, which fits in with plans envisaging gas imports from Norway to Poland. The licence areas are located close to existing production and pipeline infrastructure, which will make project work much simpler and faster.

Jointly with its partners, PGNiG UN also continued work in other exploration licence areas. Among other work, the potential of the PL839, PL850, and PL887 licence areas was evaluated. The exploration licence partners carry out necessary geological and geophysical surveys to precisely estimate the potential of the licence areas. After that period, drill-or-drop decisions are made.

Based on the results of geological surveys and economic analyses, PGNiG UN and its partners decided to relinquish the PL856 licence in 2018.

PGNiG UN holds a diversified portfolio of production and exploration licences. As at December 31st 2018, PGNiG UN held interests in 21 exploration and production licences, including as the operator of two licences.

| Licence | Operator | Interest | Type | Planned activities |
|---|---|---|---|---|
| PL029C (Gina Krog) | Equinor | 29.63 % (8% interest in the project) | Exploration/ development | Development (production to begin in 2017)/exploration |
| PL036D (Vilje) | Aker BP | 24.243% | Production | Production |
| PL036 (Vale) | Spirit | 24.243% | Exploration/Production | Production |
| PL249 (Vale) | | | | |
| PL044 | ConocoPhi-lips | 30% interest in the licence (42.38% interest in Tommeliten Alpha) | Exploration/ development | Exploration/Development |
| PL134B (Morvin) | Equinor | 6% | Production | Production |
| PL134C (Morvin) | | | | |
| PL212 (Skarv) | AkerBP | 15% (11.9175% interest in the project) | Exploration/ Development/ Production | Production, development of the Ærfugl deposit, exploration, planned drilling in 2018 |
| PL212B (Skarv) | | | | |
| PL262 (Skarv) | | | | |
| PL212E (Snadd Outer) | AkerBP | 15 % | Exploration | Possible tie-back to Snadd |
| PL433 | Spirit | 20 % | Exploration/appraisal | Exploration/appraisal |
| PL460 (Skogul) | Aker BP | 35 % | Exploration/ development | Exploration/development |
| PL813 (Elli) | Equinor | 8 % | Exploration | Expected DoD decision* February 2019 |
| Op.PL838 (Shrek) | PGNiG | 40 % | Exploration | Drilling to commence in 2019 |
| PL839 (Nise/Storkobbe) | AkerBP | 11.9175 % | Exploration | Seismic data interpretation |
| PL850 (Ulv) | Edison | 20 % | Exploration | DoD decision* February 2019, planned licence extension application |
| PL887 (Novus East) | PGNiG | 40 % | Exploration | DoD decision* February 2019, planned licence extension application |
| PL891 (Slagugle) | ConocoPhi-lips | 30 % | Exploration | DoD decision* February 2019 |
| PL939 (Egyptian Vulter) | Equinor | 30 % | Exploration | DoD decision* March 2020 |
| PL941 (Gronlifielet) | AkerBP | 20 % | Exploration | DoD decision* March 2020 |

* Drill-or-drop decision – a decision to either commit to drilling exploration wells or relinquish the licence

**Producing fields**

The Skarv field was brought on stream in December 2012. Currently it is developed with 16 wells connected to five subsea templates, which can support a further seven wells, adding much flexibility to the Skarv operations going forward. The Skarv FPSO has a long useful life and can be an attractive production and transport hub for future discoveries in the region.

**Reserves:** 20.9 mboe, including 12.4 mboe of natural gas and 8.5 mboe of crude oil and NGL.

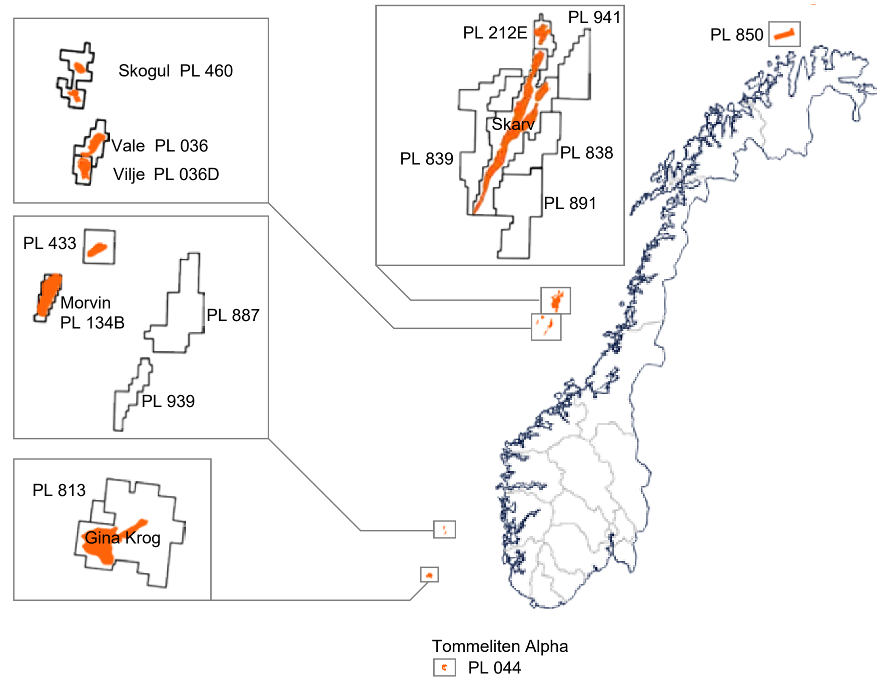
The Gina Krog field is an oil and gas field brought on stream in June 2017 with five wells. Subsequent wells will continue to be drilled in 2019 in order to increase production capacity. Running simultaneous production and drilling operations helps optimise project financing. The field development plan provides for the construction of a new platform and for the deployment of an FSO unit with a capacity of 850,000 bbl for crude storage. Next, oil is transported by tankers for transshipment, while raw natural gas is transmitted to the Sleipner platform. Processed gas is pumped into the Gassled pipeline, while condensate and NGL are transported to the Kårstø plant in Norway.

**Reserves:** 14.8 mboe, including 6.6 mboe of natural gas and 8.2 mboe of crude oil and NGL.

The Vilje field is located in the central part of the North Sea, close to the Alvheim and Heimdal facilities. The field is developed with three subsea wells linked by pipeline to the Alvheim FPSO vessel.

**Oil reserves:** 3.7 mboe.

## PGNiG UN's production fields




The Vale field is a gas and condensate field discovered in the North Sea in 1991. Despite the downtime seen in 2018, output from the Vale field is expected to rise in the coming years as a result of recent investments made in the Heimdal platform.

**Reserves:** 1.3 mboe, including 0.7 mboe of natural gas and 0.6 mboe of crude oil.

The Morvin field was discovered in the Norwegian Sea in 2001. Oil is produced through two subsea templates. The field is tied back to the Åsgard B platform.

**Reserves:** 1.2 mboe, including 0.4 mboe of natural gas and 0.8 mboe of crude oil and NGL.

**Fields under development**

Tommeliten Alpha is a gas and condensate field located in the North Sea in the immediate vicinity of the Ekofisk field. Its reserves are likely to prove higher than confirmed to date, while the PL044 licence offers considerable potential

for further exploration work. According to the current schedule, first oil is expected in 2024.
**Reserves:** 54.1 mboe, including 36.1 mboe of natural gas and 18 mboe of crude oil and NGL.

Ærfugl is a gas and condensate field discovered in the Skarv licence area. Six more wells are to be tied back to the Skarv FPSO and existing transport infrastructure. Production from the new installations is to start in 2020.
**Reserves:** 30.5 mboe, including 21.4 mboe of natural gas and 9.1 mboe of crude oil and NGL.

Skogul is on oil field situated in the North Sea near the Vilje field. The development plan assumes drilling one well connected to the subsea installation on the Vilje field, and then using the existing infrastructure, including the Alvheim FPSO platform. Drilling and completion of a production well is scheduled for 2019.
**Reserves:** 3.2 mboe, including 0.3 mboe of natural gas and 2.9 mboe of crude oil.

**Prospects being explored/appraised**
Fogelberg is a condensate and gas prospect located in the Norwegian Sea, north-east of the Morvin field. The Island Innovator semi-submersible rig was used to drill an appraisal well in the prospect in order to construct a contingent sidetrack and perform production tests. As at the end of 2018, data from the appraisal well was still being reviewed, and various field development scenarios were being considered. The data obtained from the appraisal well will help identify the recoverable reserves of natural gas and condensate with a greater degree of accuracy.
**Reserves (preliminary data):** 12.2 mboe, including 8.8 mboe of natural gas and 3.4 mboe of crude oil and NGL.

**Sales of hydrocarbons**
Crude oil is sold directly from the fields to Shell International Trading and Shipping Company Ltd (crude from the Skarv, Vilje, Vale and Gina Krog fields) and to TOTSA Total Oil Trading SA (from the Morvin field). All fields except for Vilje also produce associated gas, which is transferred via gas pipelines mainly to Germany, where it is offtaken by PST.

**Pakistan**
PGNiG is engaged in exploration work in Pakistan under an agreement for hydrocarbon exploration and production in the Kirthar licence area executed between PGNiG and the government of Pakistan on May 18th 2005. The work is conducted jointly with Pakistan Petroleum Ltd. (PPL), with production and expenses shared pro rata to the parties' interests in the licence: PGNiG (operator) – 70%, PPL – 30%. Exploration activities within the licence area have resulted in the discovery of two gas deposits – Rehman and Rizq.

Natural (nitrogen-rich) gas reserves attributable to PGNiG: 6.96 bcm (35.7 mboe) in Rehman field and 2.44 bcm (13.7 mboe) in the Rizq field.

Gas from the Rehman and Rizq fields is produced via facilities located in the Rehman field. PGNiG's share in the production from the Rehman and Rizq fields, carried out using seven wells in 2018, amounted to 200 mcm of gas (measured as high-methane gas equivalent). The Rizq-2 and Rehman-4 wells were brought on stream in February and May 2018, respectively. In February and September 2018, PGNiG also completed drilling work on the Rehman-4 and Roshan-1 wells, respectively. Currently, the drilling of the Rehman-5 well is being continued (well spudded in September 2018), and equipment is being moved in and rigged up for the drilling of the Rehman-6 and Rizq-3 wells.

**United Arab Emirates**
In December 2018, PGNiG's bid for the acquisition of hydrocarbon exploration, appraisal and production rights in onshore block 5 in the Emirate of Ras Al Khaimah was selected. Following the selection of its bid, the Company acquired a 90% interest in the block. Agreements between PGNiG and the Ras Al Khaimah Petroleum Authority and RAK GAS LLC were signed in January 2019.

**Libya**
Due to mounting safety issues in Libya in early H2 2014, PGNiG UNA gave notice of a force majeure to the National Oil Corporation (NOC) and started to scale back its field operations in the country.

**Iran**
PGNiG decided to cancel its operations in the Islamic Republic of Iran in 2018.

**Geological services and seismic surveys**
In 2018, Geofizyka Toruń, a PGNiG Group company, carried out the following tasks:

- seismic data acquisition in: Poland, Croatia, Bulgaria, Myanmar, Egypt, Tunisia, Colombia, and Ukraine;
- seismic data processing and interpretation in: Poland, France, India, Pakistan and Colombia.

The foreign markets where EXALO was most active in 2018 were Pakistan, Kazachstan, and Ukraine.

## Capital expenditures in 2018

In 2018, PGNiG's capital expenditure in the Exploration and Production segment amounted to PLN 989m, 14% more than in 2017. The key exploration projects (in terms of allocated CAPEX) in 2018 included: drilling of the Pniewy 5KH appraisal well (PLN 30.5m), the Krobielewko 8 appraisal well (PLN 25.6m) and fracturing and formation tests in the Kramarzówka 2H well (PLN 35m). PGNiG's expenditure on exploration activities in Poland and abroad totalled PLN 764m.

Capital expenditure made in 2018 in Pakistan totalled PLN 94m, and was 6% lower than in 2017. Capital expenditure made in 2018 in Norway reached PLN 302m (net of acquisitions). Work continued to drill additional production wells in the Gina Krog field, with a view to optimising the project financing. In 2018, the Norwegian Ministry of Petroleum and Energy approved development plans for the Ærfugl i Skogul fields. Production from these fields is scheduled to commence in 2020. In line with its strategic objectives, PGNiG UN completed a major transaction consisting in the acquisition of interest in the Tommeliten Alpha field from Equinor. The field is currently under development.

**6.96** bcm
Natural gas resources in the Rehman field

**2.44** bcm
Natural gas resources in the Rizq field

**200** mcm
PGNiG's share in theproduction from the Rehman and Rizq fields

**PGNiG's total expenditure in the E&P segment amounted to PLN 2.2bn**

## Risks

**Resource discoveries and estimates**

●●● ●●○ → Poland

●○○ ●●● → Norway

The main risk inherent in exploration activities is the risk of failure to discover hydrocarbons, i.e. exploration risk. This means that not all identified leads and prospects actually have deposits of hydrocarbons which can qualify as an accumulation. The existence of a hydrocarbon accumulation depends on the occurrence of a number of geological conditions. In addition, the actual quantity and quality of accumulated hydrocarbons may differ from estimates. If the results of successful exploration in the form of new reserves do not balance production from existing fields, the recoverable reserves in the PGNiG Group's fields will gradually decrease as the production continues.

**Exploration for unconventional deposits of gas**

●○○ ●●● → Poland

A risk associated with exploration for unconventional gas in Poland relates to the lack of proved reserves of tight gas and reserves in unconventional Miocene formations. Exploration for shale gas has now been closed, and the experience gained from such projects will allow PGNiG to minimise risks associated with exploration for tight gas. Even if the existence of in-place tight gas resources is confirmed, production may prove uneconomic due to insufficient recovery rates and high investment expenditure necessary to drill wells and construct production facilities.

Tight gas - natural gas trapped in isolated pores of low permeability rocks such as sandstones or carbonates.

**Competition**

●○○ ●○○ ↘ Poland

Both in Poland and abroad there is a risk of competition from other companies seeking licences for exploration and appraisal of hydrocarbon deposits, although it should be noted that this risk has significantly diminished in the Polish market over the past year. Certain competitors of PGNiG, especially those active globally, enjoy strong market positions and have greater financial resources than those available to the Group. Thus, it is probable that such companies would submit their bids in tender procedures and be able to acquire promising licences, offering better terms than PGNiG could offer given its financial and human resources. This competitive advantage of oil majors is particularly important on the international market.

**Delayed work**

●●○ ●●○ ↘ Poland

●●○ ●○○ ↘ Norway

Under the applicable Polish laws and regulations, the process of obtaining a licence for exploration and appraisal of crude oil and natural gas reserves lasts from one to one and a half years. In foreign markets such procedures may even take up to two years from the time the winning bid is awarded until the actual contract is ratified. Prior to the commencement of field work, the Company is also required to make a number of arrangements, for instance to obtain legal permits and approvals for entering the area, and to meet the environmental protection requirements and, in some cases, requirements related to the protection of archaeological sites. It is also required to hold tenders to select a contractor. All this delays the execution of an agreement with a contractor by another few months. Frequently the waiting time for customs clearance of imported equipment is very long. All these factors create the risk of delays in the start of exploration work.

**Safety, environmental protection and health regulations**

●○○ ●○○ ↘ Poland

●●● ●●○ → Norway

The need to ensure compliance with environmental laws in Poland and abroad may significantly increase the PGNiG Group's operating expenses. Currently, the Group incurs significant capital expenditure and costs to ensure compliance of its operations with the ever more complex and stringent regulations concerning safety and health at work, as well as environmental protection. Offshore upstream operations carry a significant risk of environmental pollution resulting from oil spills. The risk is monitored on an ongoing basis, and field operators have implemented a number of barriers and technical solutions to mitigate the risk.

**Cost of exploration**

●○○ ●○○ ↘ Poland

Capital intensity of an exploration project depends on prices of energy and materials. Cost of exploratory work is especially sensitive to steel prices, which are passed onto prices of casing pipes and production tubing used in drilling. An increase in prices of energy and materials translates into higher costs of exploratory work. Profitability of foreign exploration projects also depends to a significant extent on prices of oil derivative products and on exchange rates.

Risk materiality level:
●○○ low
●●○ medium
●●● high

Probability that the risk will materialise:
●○○ low
●●○ medium
●●● high

Yoy change in the risk level:
↗ increase
→ no change
↘ decrease

**Unforeseen events and emergencies**

→ Poland

→ Norway

Hydrocarbon deposits developed by the PGNiG Group are usually located at great depths, which involves extremely high pressures and, in many cases, the presence of hydrogen sulfide. Consequently, the risk of hydrocarbon blowout or leakage is very high, which in turn may pose a threat to people (employees and local population), the natural environment and production equipment.

**Legislative changes**

↘ Poland

→ Norwegia

In some countries, exploration and production activities may be hindered by frequent and unexpected changes in legislation, which may give rise to particularly serious risks in countries with authoritarian regimes. The risk is low in Norway, given the country's stable legal regime governing the oil industry operations.

**Political and economic situation**

↘ Grupa PGNiG

Some countries where the PGNiG Group is conducting exploration are threatened by armed conflicts and terrorist attacks, which may lead to limitation, suspension or even discontinuation of such activities.

The PGNiG Group's operations are also exposed to the risk of social or political unrest in some regions. Changes of governments may result in withholding issuance of petroleum licences. Those countries are also at risk of internal conflicts and civil unrest due to poverty and demographic issues. If these risks materialise, the Company's operations may be limited, suspended or discontinued.

## Development prospects

In 2019, PGNiG plans to produce in Poland 3.9 bcm of natural gas (measured as high-methane gas equivalent), and 0.8m tonnes of crude oil and condensate.

The plans for 2019 in Poland include development and tie-in of 53 wells, development of 7 fields and modernisation and extension of exsisting installations.

Together with the Polish Geological Institute – National Research Institute, PGNiG will continue the research project into the application of the fracturing technology to extract coal bed methane in Gilowice. Thanks to this technology, in the future PGNiG will be able to increase its domestic production capacity. Coal bed methane may be an important element of national energy security based on production of hydrocarbons from domestic resources, while mine demethanization will improve the work safety of miners and contribute to reducing emissions of methane, an aggressive greenhouse gas, into the atmosphere.

On the Norwegian Continental Shelf, PGNiG UN, as a project partner, will continue to produce hydrocarbons from the Skarv, Morvin, Vilje, Vale, and Gina Krog fields and will proceed with the development of the Snadd and Gina Krog fields. The company will also work towards ensuring stable, predictable and long-term gas supplies to Poland. These efforts will include analysis of infrastructure scenarios for transmission of Norwegian gas to Poland, but also potential acquisitions of gas fields in Norway. At the beginning of 2019, the number of licences in which PGNiG UN holds interests will increase to 24 following the awards in the most recent APA 2018 licensing round.

PGNiG UN intends to continue acquiring interests in new licence areas by participating in annual APA and in regular licensing rounds. The company may seek to acquire new licence areas through farm-in (purchase of interests from other companies) or farm-down (exchange of interests with other companies) arrangements. In the future, PGNiG UN may participate, as a partner, in drilling projects within the Arctic Zone, in connection, among other things, with its holding of an interest in the PL 850 licence area in the Barents Sea.

As regards Pakistan, plans for 2019 include completion of drilling and then testing and bringing on stream of the Rehman-5 production well, in parallel with the spudding of the Rehman-6 and Rizq-3 production wells, which will require mobilising a second drilling rig. In 2019, PGNiG is also planning to start drilling the Rehman-7 and Rizq-4 wells. In parallel with the drilling campaign, work will be carried out to expand the capacity of the production infrastructure and consecutively tie in new wells for commercial production. In 2019, the Rizq-3, Rehman-5 and Rehman-6 wells are scheduled to come on stream. With respect to continuing exploration work, the Pakistan Branch is also planning to complete some seismic data acquisitions commenced in 2018, namely the 3D seismic survey over the W1 prospect and the 2D seismic survey over the W2 prospect.

As regards seismic services, work planned for 2019 includes 2D and 3D seismic data acquisitions in Poland (mainly for PGNiG) and abroad, including in Germany, the Netherlands, Bulgaria, Egypt, Mozambique, Hungary and Ukraine.

# Trade and Storage

# Trade and Storage

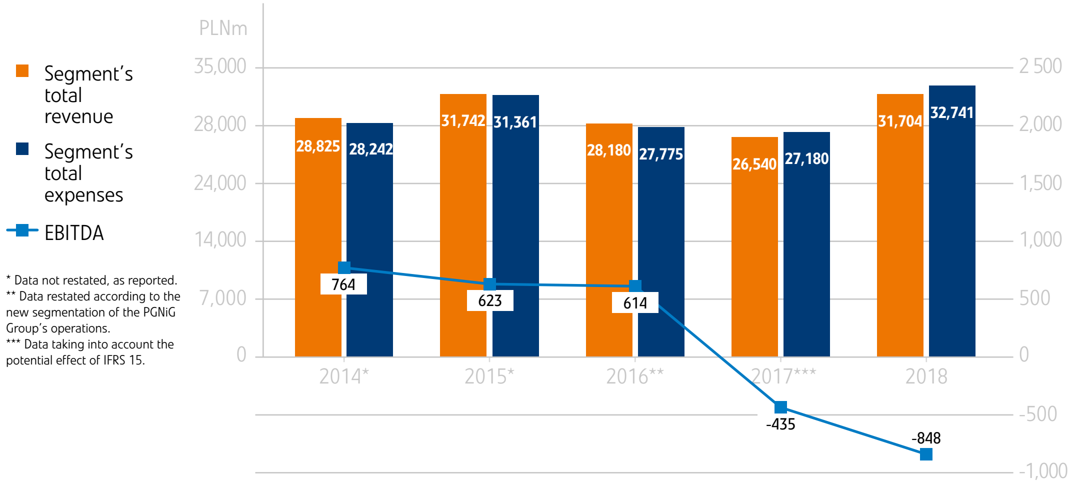
## Segment description

Underground gas storage facilities -storage facilities located in two different types of geological structures - salt caverns (underground gas storage cavern facilities) or partly depleted oil or gas reservoirs.

The principal activity of the segment is trade in natural gas. In Poland, where the PGNiG Group is the largest natural gas supplier, the segment sells natural gas produced from domestic fields as well as imported gas. Wholesale of gas on the domestic market is carried out through PGNiG SA, while retail sales through PGNiG Obrót Detaliczny Sp. z o.o. Through PGNiG Supply and Trading GmbH (wholesale) and PST Europe Sales GmbH (retail sale), the PGNiG Group is also developing its natural gas business in Germany, the Netherlands and Austria. The segment also trades in electricity, certificates of origin for electricity, $CO_2$ emission allowances, and crude oil (since 2018, through PST). The segment operates seven underground gas storage facilities and provides a ticketing service for gas storage to external customers. The operator of the gas storage system is Gas Storage Poland Sp. z o.o.

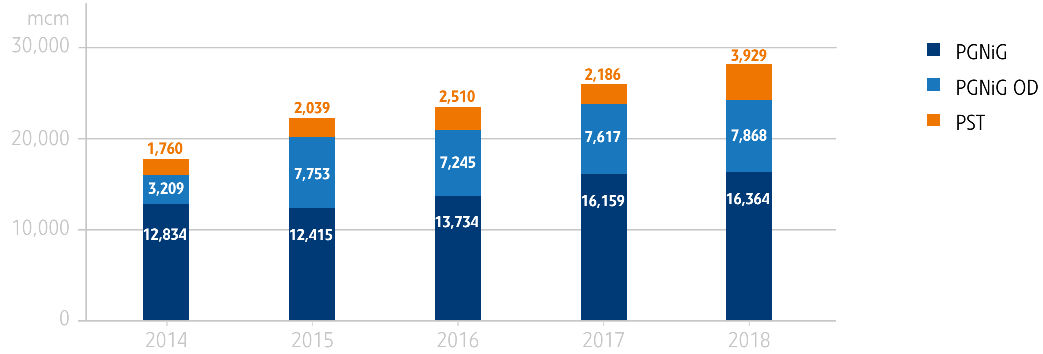
Companies comprising the segment: PGNiG, PGNiG OD, PGNiG Supply and Trading GmbH, Gas Storage Poland Sp. z o.o.

## Segment's figures




* Data not restated, as reported.
** Data restated according to the new segmentation of the PGNiG Group's operations.
*** Data taking into account the potential effect of IFRS 15.

## Natural gas sales outside the PGNiG Group




In 2018, the Trade and Storage segment reported an operating loss of PLN -1,037m, a further deterioration (by PLN 397m) on 2017. At the EBITDA level, the segment recorded a loss of PLN -848m, PLN 413m further into the negative territory compared with 2017, when the Group generated an EBITDA of PLN -435m. The segment's revenue reached PLN 31,704m, up by PLN 5,165m (after the presentation changes made to ensure compliance with IFRS 15) year on year.

In 2018, there was a significant increase in the segment's operating expenses, which went up by PLN 5,561m (or 20%) to PLN 32,741m. The segment's poorer performance was attributable to the effect of a 30% year-on-year increase in market prices of hydrocarbons on gas procurement cost. At the end of 2018, the stocks of PGNiG's gas held in underground high-methane gas storage facilities stood at approximately 2.3 bcm, close to the level recorded at the end of 2017.

## Operations in 2018

### Trade in Poland

In Poland, where the PGNiG Group is the largest natural gas supplier, the Trade and Storage segment sells natural gas produced from domestic fields as well as imported gas. On August 1st 2014, the structure of the PGNiG Group changed: retail operations were separated from the wholesale gas business, the latter remaining with PGNiG. Retail sales and customer service was transferred to PGNiG OD, a new company.

### Wholesale market - PGNiG

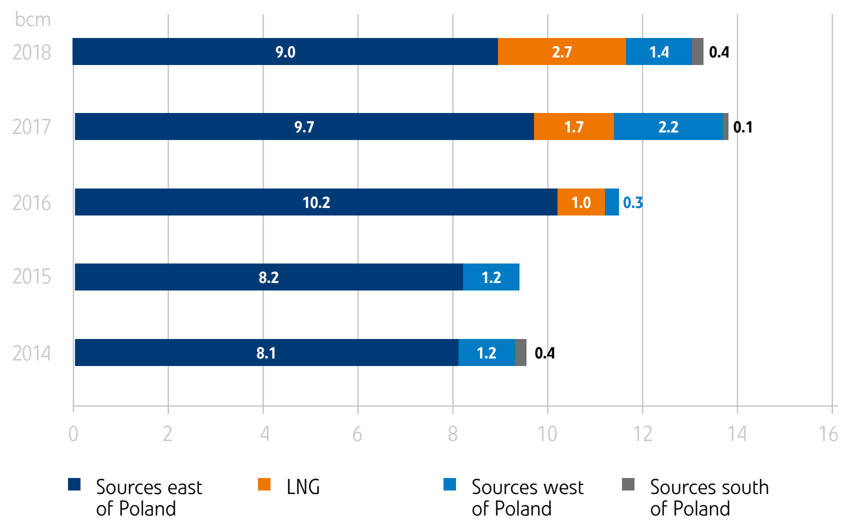
**Gas imports**

In 2018, PGNiG purchased natural gas mainly under the long-term agreements and contracts specified below:

- Contract with OOO Gazprom Export for sale of natural gas to the Republic of Poland, dated September 25th 1996, effective until 2022 (the Yamal contract);
- Contract with Qatar Liquefied Gas Company Limited (3) for sale of liquefied natural gas, dated June 29th 2009, effective until 2034 (the Qatar contract), and supplementary agreement to the long-term agreement of March 2017 (effective from beginning of 2018 to June 2034).

PGNiG also received gas under medium- and short-term contracts for grid deliveries and LNG supply (e.g. the five-year contract which entered into force in 2018 for nine liquefied natural gas shipments from Centrica LNG Company Limited).

## Imports of natural gas to Poland in 2014–2018




**In 2018, the imported gas volume was 13.5 bcm. Gas purchases from sources east of Poland fell by 0.7 bcm compared with 2017. LNG deliveries increased significantly, from 1.7bcm in 2017 to 2.7 bcm 2018.**

In 2018, PGNiG took further steps to diversify its gas supply sources and build a gas acquisition portfolio:

- on September 28th 2018, two firm long-term contracts for supply of liquefied natural gas were signed with Venture Global Calcasieu Pass, LLC, and Venture Global Plaquemines LNG, LLC. Each contract provides for the purchase by PGNiG of approximately 1 million tonnes of LNG (i.e. approximately 1.35 bcm of natural gas after regasification) annually for 20 years. The deliveries may be further traded by the Company on international markets and will be made on a free-on-board basis;
- on November 8th 2018, a firm long-term contract was concluded for supply of liquefied natural gas from Cheniere Marketing International, LLP. The contract provides for the purchase of LNG by the Company and its deliveries to the LNG Terminal in Świnoujście, and was made for a period of 24 years. The supplies will be made on a Delivered Ex-Ship basis. Under the contract, PGNiG will purchase ca. 0.73 bcm of gas after regasification in the entire period between 2019 and 2022, and approximately 39 bcm of gas after regasification in the entire period between 2023 and 2042;
- on December 19th 2018, a firm long-term contract was concluded for supply of liquefied natural gas from Port Arthur LNG, LLC, a subsidiary of Sempra LNG & Midstream, LLC. The contract provides for the purchase by PGNiG of approximately 2m tonnes of LNG (i.e. approximately 2.7 bcm of natural gas after regasification) annually for 20 years. LNG supplied under the contract may be sold by PGNiG on international markets and will be delivered on a free-on-board basis from the Port Arthur production facility in Jefferson County, Texas, which is currently under construction and is planned to be completed in 2023 at the earliest.

**Renegotiation of price terms under the contract with OOO Gazprom Export**

PGNiG continued its efforts to change the price terms under the Yamal contract as part of a procedure formally launched on November 1st 2014. On June 29th 2018, the Arbitration Institute issued a partial award in the arbitration proceedings instigated by PGNiG against PAO Gazprom and OOO Gazprom Export. In the partial award, issued on an ad hoc basis, the Arbitration Institute:

- Found that in November 2014 PGNiG had filed a valid and effective request to renegotiate the contract price;
- Confirmed the satisfaction of the condition set forth in the Yamal contract which entitled PGNiG to demand a reduction of the contract price for the gas supplied by Gazprom under the Yamal contract, thus confirming that, in principle, PGNiG's request to determine a new, lower contract price was justified; and
- Found, contrary to Gazprom's claims, that PGNiG had the right to change the contract price within the limits of the claim, also declaring that PGNiG's initial demand regarding the new price formula was too far-reaching; the Court also decided ad hoc that the new contract price would be determined later on in the proceedings.

Under the Yamal contract, the new contract price determined ad hoc by the Arbitration Institute should apply with retroactive effect as of November 1st 2014.

On October 1st 2018, Gazprom filed a complaint with the Stockholm Court of Appeals seeking reversal of the partial award issued by the Arbitration Institute. Notwithstanding the continuing arbitration proceedings, on November 1st 2017, PGNiG submitted another notice to PAO Gazprom/OOO Gazprom Export requesting renegotiation of the price terms of gas supplies.

**LNG supplies**

In 2018, PGNiG received 23 LNG shipments totalling approximately 2m tonnes of LNG, which corresponds to approximately 29.8 TWh or 2.7 bcm of natural gas after regasification.

As a result of execution of the supplementary agreement with Qatar Liquefied Gas Company Limited, the total volume of LNG that PGNiG may receive under the long-term contracts with Qatargas rose to 2m tonnes (equivalent to about 2.7 bcm of gas after regasification) in 2018, and to 2.17m tonnes per year (equivalent to about 2.9 bcm of grid gas) in 2019–2020. In 2018, PGNiG received 18 LNG shipments under the long-term contracts with Qatargas. The volume of LNG imported from Qatar was 1.65m tonnes, or 25.1 TWh of natural gas after regasification.

In June 2018, the Arctic Voyager tanker arrived at the Świnoujście terminal, delivering nearly 140 kcm of LNG purchased by PGNiG under the contract with Centrica LNG Company Limited. In the following years of the contract term (2019–2022), eight more LNG shipments will be delivered to Poland.

The PGNiG Group continues to purchase LNG under spot contracts through its trading office opened in London in February 2017. In 2018, four shipments of LNG purchased on the basis of spot contracts arrived in Poland: each tanker delivered approximately 140 kcm of LNG, equivalent to more than 80 mcm of gas after regasification.

**Sale of gas by PGNiG**

Customers buy gas from PGNiG at market prices, in line with the formulas and mechanisms set out in the agreements concluded with them. In 2018, the largest amounts of gas in Poland were sold to industrial customers. The largest Polish customers in this category include Grupa Azoty SA, PKN Orlen SA, Grupa Lotos SA, Polska Grupa Energetyczna SA, Arcelor Mittal Poland SA, and KGHM Polska Miedź SA.

In 2018, sales on the Polish Power Exchange (PPX) accounted for the largest portion of the PGNiG Group's total gas sales. The volume of gas sold by PGNiG on the PPX in 2018 increased by approximately 0.8 TWh year on year. To meet the obligation to sell 55% of the gas fed into the national transmission system through the exchange market, PGNiG has adopted a pricing policy covering all natural gas-linked instruments on the PPX, allowing it to offer natural gas to other market participants at prices corresponding to those on deregulated wholesale, exchange and OTC markets in Western and Northern Europe.

**Competition**

In Poland, PGNiG competes with a number of companies selling natural gas to industrial customers. Despite this strong activity on the part of the competitors, in 2018 PGNiG was successful in its efforts to win and retain customers, securing its market position as a natural gas supplier. In 2018, PGNiG's sales of high-methane grid gas in Poland amounted to 172.5 TWh, having grown by 3% on 2017, from 167.4 TWh.

**Gas exports - PGNiG**

In 2018, PGNiG continued to sell natural gas to the Ukrainian market. In October 2018, PGNiG and ERU Trading signed a contract to supply gas to Ukrtransgaz, the Ukrainian transmission network and gas storage facility operator. The contract provides for the supply of more than 200 mcm of natural gas in the period from October 2018 to May 1st 2019. In September 2018, PGNiG signed also another contract with Ukrtransgaz to use its underground gas storage facilities in Ukraine.

**Sale of electricity**

On the electricity market, PGNiG is engaged primarily in wholesale trading. Total sales of electricity to trading companies and on the Polish Power Exchange accounted for more than 85% of total electricity sales in 2018. Total trading volume in 2018 was over 6.8 TWh.

In 2018, PGNiG was engaged in wholesale trading in electricity and related products in Poland and Germany. In Poland, the Company traded on the OTC market and on the PPX. In Germany, the Company traded in spot contracts on the European Power Exchange as part of cross-border electricity trading. PGNiG also provided services under a commercial balancing agreement to PGNiG OD, PGNiG TERMIKA, and companies in the PGNiG TERMIKA Group. PST traded in electricity on the German market as part of exchange (EEX) and OTC transactions.

**Capacity market**

Following auctions organised by Polskie Sieci Energetyczne in 2018 (related to the implementation of the capacity market and the capacity obligation), PGNiG entered into the following contracts:

- the power plant at the Wierzchowice UGSF, annual contracts for supplies in 2021-2023 (net capacity of 17 MW);
- Radoszyn-Lubiatów-Połęcko generating units, annual contracts for supplies in 2021-2023 (net capacity of 4.5 MW).

## Retail market – PGNiG OD

The focus of PGNiG OD's business is sale of natural gas (high-methane and nitrogen-rich gas), electricity, compressed natural gas (CNG), and liquefied natural gas (LNG).

**Gas purchase**

High-methane gas is procured from three main sources: (1) the PPX, (2) under a contract with PGNiG for delivery of gas to a virtual trading point in the transmission network operated by GAZ-SYSTEM, and (3) under a contract with PGNiG for delivery of gas to a physical trading point in Słubice. LNG is purchased under a bilateral agreement with PGNiG.

The largest share in the global volume of high-methane gas purchases was attributable to transactions on the PPX.

Given changes on the retail gas fuel market and the MIFID II requirements, the Contracts Policy was adapted to the current market conditions and contracts with customers exempt from the tariff approval requirement were separated. The remaining gas volumes covered by special price offers are hedged according to the level of utilisation of the price offers, to mitigate the risk that gas procurement costs would not correspond with current wholesale prices.

### TGE - Polish Power Exchange

The largest share in the global volume of high-methane gas purchases by PGNiG OD was attributable to transactions on the PPX.

**Sales of gas**

PGNiG OD's customer base includes consumers and non-consumers. Group 1-4 retail customers purchase gas used mainly for cooking and for water and home heating, as well as in shop-floor processes. Business customers buy gas both for the purposes of their industrial processes and for heating.

**Sale of LNG and CNG**

The pricing policy for both LNG supplies and regasified LNG supplies uses prices obtained at the LNG Terminal in Świnoujście, based on the natural gas prices quoted on the Polish Power Exchange. In total, PGNiG OD made 361 LNG deliveries with a volume in excess of 6,000 tonnes in 2018 (to off-grid regasification stations).

PGNiG continued with the process of defining a market price for CNG charged to its strategic customers by pegging it to wholesale prices of diesel oil or gas prices quoted on the Polish Power Exchange, taking into account the volume of gas taken. The volume of CNG sold in 2018 by PGNiG OD totalled about 16 mcm.

**Competition**

According to the Energy Regulatory Office (URE), approximately 54,000 customers switched suppliers in 2018, compared with approximately 58,000 in 2017. Rivals in the B2B and B2C segments compete chiefly by offering competitive gas prices and dual-fuel bundles, as well as by cross selling products and services.

Listed below are PGNiG's most active competitors operating directly on the Polish market.

- B2B: PGE Polska Grupa Energetyczna SA, Fortum Holdings, Hermes Energy Group SA, HANDEN Sp. z o.o. and CEZ Trade Polska Sp. z o.o.;
- B2C: Fortum Marketing and Sales Polska SA, ENERGA-OBRÓT SA, Hermes Energy Group SA, Tauron Group;
- LNG market: Duon Dystrybucja Sp. z o.o., Novatek Polska Sp. z o.o., Krio-Gaz S.C., Barter Sp. z o.o., BEST Systemy Grzewcze Sp. z o.o., Blue Line Engineering SA, Blue Gaz sp. z o.o., LNG Silesia Sp. z o.o., G.EN. GAZ ENERGIA Sp. z o.o., UNIMOT System Sp. z o.o., Gaspol SA.

EFET - European Federation of Energy Traders.

**Emergency gas supplies**

In accordance with the Minister of Energy's Regulation of September 21st 2018, PGNiG OD was designated as an emergency supplier to end users of gas. Since September 12th 2018, customers acquired by PGNiG OD through the emergency supplies process have been billed according to tariff rates applied by PGNiG OD (consumers) and the Gas for Business price list (non-consumers).

PEGAS - Paneuropean Gas Exchange - european gas trading platform.

**Sale of electricity**

PGNiG OD's customer base includes consumers and non-consumers who have concluded comprehensive service contracts for the supply of electricity or contracts for the sale of electricity. As at the end of 2018, PGNiG OD's base of customers on dual fuel (electricity and gas) plans comprised consumer accounts (91%) and non-consumer accounts (9%).

## Trade abroad

Through PGNiG Supply and Trading GmbH (wholesale) and PST Europe Sales GmbH (retail sale), the PGNiG Group is also developing its natural gas business (both wholesale and sales to end users) in Germany, the Netherlands and Austria.

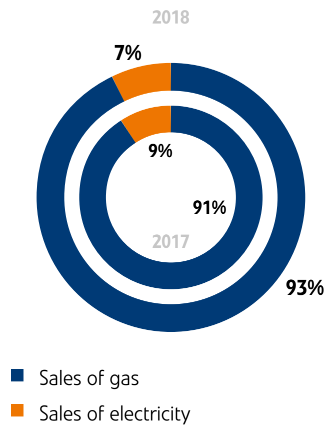
**Exchange and OTC wholesale trading**

PST is an active player on organised markets (exchanges) and in OTC trading. It trades with over 100 counterparties under EFET or similar standardised contracts. PST operates in Germany and its neighbouring countries: Austria, the Czech Republic, the Netherlands, and the UK (NBP). The company also reached operational readiness in France and Poland, where it commenced active trading operations in October 2018. PST is also registered as a forwarding operator in Denmark, Slovakia and, since 2018, in Hungary.

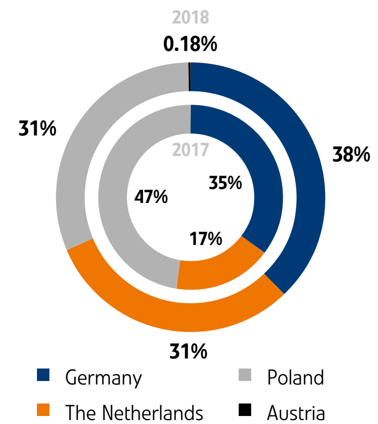
In 2018, PST launched trading operations in new products: it commenced trading in futures contracts for Brent crude on the ICE Futures Europe exchange. Furthermore, PST was registered with ICE Futures U.S. in order to secure LNG supplies, and it is a market maker on the PEGAS exchange for the GASPOOL gas hub market area.

In 2018, PST and PST Sales GmbH sold a total of 64.3 TWh of pipeline-delivered gas, 4.7 TWh of LNG, 5.0 TWh of electricity and 0.5 TWh of crude oil in exchange and OTC transactions.

**Sales of PST with its subsidiaries by product (in volume terms)**




**Sales of PST with its subsidiaries by country (in volume terms)**



**Retail sales**

In 2015, PST separated its sales operations, which have since been carried out through its subsidiary PST ES, which sells gas and electricity to end users in Germany and Austria on a retail basis. Target customers include small and medium-sized enterprises (SMEs) and households with standard consumption profiles.

As at December 31st 2018, PST Group's customer base comprised ca. 44,000 accounts (close to the level recorded as at December 31st 2017). In 2018, PST signed roughly 20,000 new contracts, with deliveries scheduled to begin in 2018 and the following years confirmed under about 43% of them.

**Trading highlights**

PST's key contracts effective in 2018 included a contract for the provision of a ticketing service with respect to the maintenance of mandatory gas stocks of 576 GWh (with PGNiG) and a contract for the management of Austrian gas storage capacities (a working volume of 17 GWh) signed in order to optimise peaks in gas demand from end users in the winter season. Under its current contracts, PST supplies natural gas to PGNiG on the Polish-German and Polish-Czech borders, ensuring diversification of supply sources. PST also has in place a contract with PGNiG UN for the purchase of gas produced from the Norwegian Skarv field as of 2013, Vale and Morvin fields as of 2015, and Gina Krog field as of July 2017.

## Storage

The Trade and Storage segment uses for its own needs the working capacities of the Wierzchowice, Husów, Strachocina, Swarzów and Brzeźnica underground gas storage facilities, as well as the Mogilno and Kosakowo underground cavern facilities. A part of the working capacity of the Mogilno facility which was made available to GAZ-SYSTEM is not a storage facility within the meaning of the Polish Energy Law. The capacities of gas storage facilities are managed by GSP, conducting activities in the following two core areas:

- Regulated activities comprising the provision of gas fuel storage services at storage facilities owned by PGNiG, as well as operation of the Mogilno and Kosakowo underground gas storage caverns;
- Non-regulated activities comprising the provision of services related to design, construction and extension of underground gas storage facilities.

Short-term peak fluctuations in demand for natural gas are balanced by supplies from the Mogilno and Kosakowo facilities, where gas is stored in worked-out salt caverns. The capacities of the Wierzchowice, Husów, Strachocina, Swarzów and Brzeźnica UGSFs are used to balance out changes in demand for natural gas in the summer and winter seasons, to meet the obligations under take-or-pay import contracts, to ensure the continuity and security of natural gas supplies, and to meet the obligations under gas supply contracts with customers.

GSP, in its capacity of the storage system operator, provides gas fuel storage services (USUM) to storage facility users under standardised procedures.

GSP's services are provided using the following Storage Facilities (SF) and Groups of Storage Facilities (GSF):

- Kawerna GSF (comprising the Mogilno CGSF and Kosakowo CGSF, located in worked-out salt caverns);
- Sanok GSF (comprising the Husów UGSF, Strachocina UGSF, Swarzów UGSF and Brzeźnica UGSF, located in partly depleted gas reservoirs);
- Wierzchowice SF (comprising Wierzchowice UGSF);
- As at December 31st 2018, GSP had provided a total of 32,174 long-term storage capacity packages, including 12,677 packages of services provided on a firm basis and 19,497 packages on an interruptible basis.

**Ticketing service – PGNiG**

For the gas year 2018/2019, PGNiG has concluded contracts with 13 energy companies obliged to maintain emergency stocks of natural gas. The total volume of gas stocks maintained by PGNiG for other entities is over 385 GWh (approximately 34 mcm). PGNiG maintains gas stocks for the above entities, on a contract basis, in storage facilities managed by GSP, in which PGNiG previously leased appropriate storage capacities and injected gas.

**Third-party access (TPA) storage capacities**

As at December 31st 2018, the PGNiG Group's underground gas storage working capacities totalled 2,985.35 mcm of high-methane gas, of which 2,942.85 mcm was made available on a TPA basis or to the Gas Transmission System Operator GAZ-SYSTEM under a long-term contract.

## Capital expenditures in 2018

In 2018, at the Kosakowo CGSF, further work to construct five Cluster B chambers together with the necessary technical infrastructure and land development was under way. On January 10th 2019, three Cluster B storage chambers (K-6, K-8 and K-9) were handed over to PGNiG. In December 2018, GSP applied to the President of URE for an amendment of the licence to the effect that the working storage capacity of the Kosakowo CGSF is increased by that additional capacity. K-7 and K-10 chambers are expected to be placed in service in September 2021. Upon completion of the project, the Kosakowo CGSF's working capacity will reach approximately 300 mcm.

As regards the implementation of the contract to construct the Kosakowo CGSF, an application to amend the licence held by the Kosakowo CGSF was prepared and submitted to the Ministry of the Environment in 2017. The amendment to the licence covers the construction of ten storage chambers grouped in two C and D clusters of five chambers each, along with gas pipelines and process pipelines (the procedure was pending in 2018).

## Risks

**Administrative regulation of natural gas prices and deregulation of Polish gas market**
●●● ●●● ↘

Gas trading on the exchange market has been excluded from the tariff regime. Prices of gas paid by end users have also been gradually liberalised as the process of deregulation advances. The first customer groups in respect of which the tariff requirement will be disapplied are wholesale and business customers. As regards gas trading on the Polish Power Exchange or direct sales to customers at prices similar to those quoted on the exchange, there is a risk that revenues from such sales will be lower than gas procurement costs due to the growing disconnect between the market prices of gas and of petroleum products, to which gas prices under the long-term import contracts continue to be linked. As a consequence, revenue is subject to forecasting risk. Inaccurate estimates of costs (particularly the cost of gas purchase) may result in a risk of miscalculation of selling prices and charges, which may adversely affect financial results.

Dependence of PGNiG OD's revenue on tariffs approved by the President of URE is the key factor affecting the company's regulated business. Tariffs are crucial to the company's ability to generate revenue that would cover its reasonable costs and deliver a return on the capital employed. Currently, a significant portion of that revenue depends on the selling prices of gas fuel and is regulated. Inaccurate estimates of demand for gas (affecting the accuracy of projected purchase volumes) and changes in prices of gas purchased on the Polish Power Exchange, which cannot be accurately projected, may have an adverse effect on the financial performance of PGNiG OD.

Risk materiality level:
●○○ low
●●○ medium
●●● high

Probability that the risk will materialise:
●○○ low
●●○ medium
●●● high

Yoy change in the risk level:
↗ increase
→ no change
↘ decrease

**Disruptions in gas supplies from countries east of Poland**

●●● ●●○ ↗

In 2018, there were no disruptions in gas supplies from across Poland's eastern border. However, given the continuing political instability in Ukraine, there is a risk of limitation in gas supply.

**Take-or-pay gas supply contracts**

●●● ●○○ →

PGNiG is a party to long-term take-or-pay contracts for gas supply to Poland, and takes care to duly discharge its obligations under those contracts. Assuming that PGNiG's customer portfolio remains unchanged, the volume of gas imports specified in the take-or-pay contracts will allow the Company to optimise its gas purchases under long-term and spot contracts, including for LNG. If PGNiG loses its market share, there is a risk that the Company would be forced to look for new ways to utilise the surplus volumes of gas in its portfolio.

**Competition**

●●● ●●● →

Competitors seek to increase gas fuel sales by offering competitive prices of the fuel or dual fuel (gas and electricity) deals. A noteworthy development is also the growing activity of large energy companies on the Polish natural gas market.

Given the prevailing trend in supplier switch numbers (according to URE data), the number of people switching energy suppliers should increase in the coming years.

## Development prospects

### Development prospects in Poland

**Import strategy**

In the long term, PGNiG will focus on the performance of its obligations under long-term contracts with respect to the minimum offtake volumes (Yamal contract) and contracted volumes of LNG. If an unforeseen increase in demand occurs, the Company will purchase natural gas under short-term contracts from the neighbouring countries or on the LNG market, wherever more favourable prices are available. The planned extension of the LNG terminal – to 7.5 bcm of natural gas per year at the first stage, and then to 10 bcm annually – will make it possible to bring greater volumes of LNG to Poland.

Following the investment decisions by the Polish and Danish transmission operators, which would mean that the joint Baltic Pipe project is approved, PGNiG will be able to win contracts for the supply of gas from the Norwegian Continental Shelf (from its own deposits and imported).

**Retail sales**

In 2018, PGNiG OD intends to further enhance its product offering and improve customer satisfaction by focusing on continuous improvement and streamlining of customer service, and by building new and developing the existing customer access channels. In addition, to fight off growing competition, PGNiG OD will continue efforts which are aimed at keeping up the natural gas sales volumes by offering customers dedicated discount plans, including tailor-made plans and purchases of natural gas within purchasing groups.

PGNiG OD's key growth objectives in the area of gas sales will focus on maximising margins on a stable volume portfolio, managing the risk of losing high-margin customers, and expanding the offering and improving availability of CNG and LNG services. Launch of products with significant business potential, including insurance and assistance packages for retail customers, will play an important role in enhancing PGNiG OD's product portfolio in 2019. Other services under partnership agreements with third parties are also being considered.

Due to the complex situation on the electricity retail market, the product structure will need to be adjusted to the new legal regulations (in particular the Act Amending the Excise Tax Act and Certain Other Acts). In 2019, a complete restructuring of PGNiG OD's electricity sale offering will be prepared, to be launched in Q1 2020.

**Development of PST's capabilities**

As part of developing PST's capabilities, a portion of the PGNiG customer base will be migrated in 2019. Thus, PST will strengthen its operations in Poland, offering natural gas and electricity to wholesale and retail customers.

**Business development in the CNG and LNG segments**

Key development directions for the PGNiG Group in the CNG and LNG segments:

- Small LNG Regasification Facilities for businesses – construction of LNG stations to serve business customers (based on a one customer – one station model) if the expected consumption volume and profile guarantees economic viability of the project;
- LNG bunkering – activity in the market of LNG supply for use by ships, including submission of an application for EU co-financing under the Connecting Europe Facility;
- CNG stations for municipal transport – selective approach to customers, maintaining the existing stations, and new projects subject to economic viability.

As part of its operations on the LNG and CNG markets, PGNiG OD also plans to expand LNG supplies for the food industry, prepare business proposals and make deliveries for distributed generation and heat plants, as well as provide solutions for agricultural production.

**Storage**

PGNiG will strive to develop the ticketing service. With respect to expansion of the Kosakowo CGSF, GSP will continue the work to construct K-7 and K-10 chambers. In the Mogilno CGSF, a project to upgrade and reconstruct the pressure reduction and metering station for fuel gas is planned to be launched.

GSP's CAPEX plan for 2019–2021 also provides for replacement and development projects (involving IT and safety systems).

## Development prospects abroad

In 2019, PGNiG will continue to sell gas on the Ukrainian market in cooperation with its Ukrainian partner ERU Trading. The Company's business in Ukraine will also be affected by the outcome of negotiations between GAZ-SYSTEM and Ukrtransgaz concerning expansion of the transmission network connections between Poland and Ukraine.

PST intends to further expand its business of selling electricity and gas to end users and wholesale customers in Western Europe in 2019. As part of its trading activity, besides being an active player in OTC and exchange markets, PST intends to develop a business model based on cooperation with municipal entities as well as trading companies, by offering them standard and structured trading and balancing products.

The PGNiG Group will also continue to work on building its capabilities and strengthening its presence in the global LNG market. As a result of its operations on the LNG market, PST started trading in new merchandise (crude oil, diesel oil) and with new markets (Henry Hub) in order to hedge potential LNG transactions and generate margin on its own transactions.

# Distribution

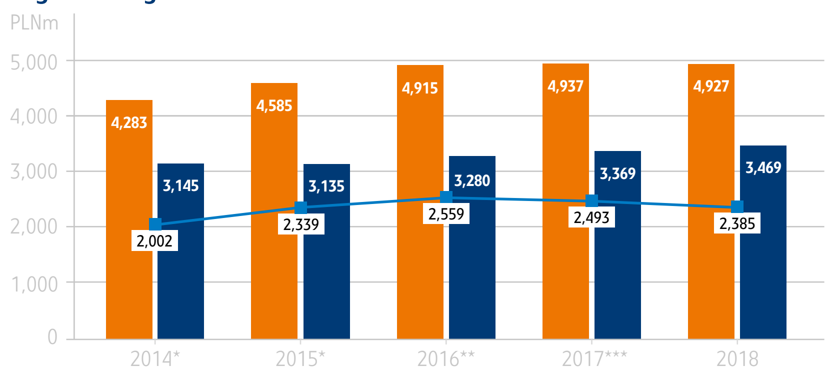
# Distribution

See also:
www.psgaz.pl

## Segment description

The segment's principal business activity consists in the delivery of high-methane and nitrogen-rich gas, as well as of small amounts of coke-oven gas, over the distribution network to retail and corporate customers. The segment is also engaged in extending and upgrading the gas network and connecting new customers. Natural gas distribution is the responsibility of Polska Spółka Gazownictwa Sp. z o.o.. As the Distribution System Operator, the company operates in all regions of Poland. Being the owner of the majority of Poland's gas distribution network and gas service lines, PSG enjoys a dominant market share.

## Segment's figures




Segment's total revenue
Segment's total expenses
EBITDA

* Data not restated, as reported.
** Data restated according to the new segmentation of the PGNiG Group's operations.
*** Data taking into account the potential effect of IFRS 15.

## Volume of distributed gas (high-methane, nitrogen-rich, propane-butane, and coke gas)

| in natural units – mcm | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| Total volume of distributed gas | 11,747 | 11,645 | 10,858 | 9,823 | 9,586 |
| - including high-methane gas | 9,918 | 9,797 | 9,301 | 8,646 | 8,495 |
| - including nitrogen-rich gas | 971 | 989 | 836 | 643 | 568 |
| including outside the PGNiG Group | 3,101 | 3,110 | 3,081 | 1,793 | 804 |

In 2018, the Distribution segment's operating profit fell by 7% year on year to PLN 1,458m, while EBITDA came in at PLN 2,385m, down by PLN 108m year on year. The segment's revenue from sales decreased by PLN 10m, while revenue from distribution services dropped by PLN 181m (after the presentation changes made to ensure compliance with IFRS 15), i.e. by 4% year on year. On the other hand, the PLN 72m lower year-on-year net income from expenses of system balancing increased the segment revenue.

The volume of distributed gas rose by 102 mcm, or 1%, year on year. The segment's operating expenses in 2018 went up by PLN 100m, or 3%, year on year, mainly due to 34% higher other services and 2% higher employee benefits year on year.

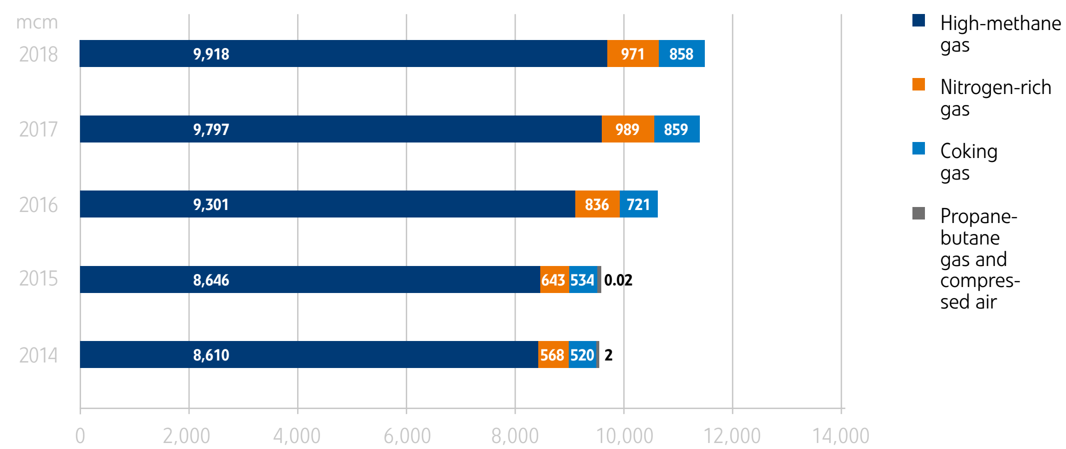
## Operations in 2018

The mission of PSG as the Distribution System Operator is to provide gas fuel distribution services to all gas fuel consumers and traders (while ensuring that all of them receive equal treatment) on the basis of distribution agreements. In 2018, PSG executed three distribution agreements and two Interoperator Distribution Agreements. Throughout the year, about 61,000 customers changed their gas suppliers.

PSG took steps which in 2018 resulted in the execution of more than 88,500 connection agreements, providing for 97,600 new connections to the gas grid. In 2018, PSG planned to build more than 51,000 new connections. By the end of 2018, nearly 179,000 decisions defining the terms of connection were issued (up 19% year on year) and 60,750 service lines with a total length of 616.2 km were built.

In 2018, 31 new municipalities were connected to the gas grid. Thus, the geographical coverage in terms of the number of municipalities connected reached 60.94% (1,510 out of 2,478).

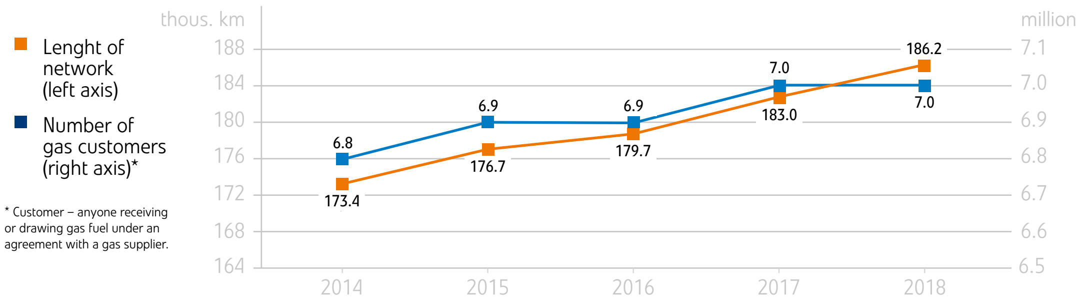
## Volume of gas transmitted via the distribution system



As at December 31st 2018, PSG had a multi-branch organisational structure, comprising the Support Branch in Warsaw, the Infrastructure Development and Maintenance Branch in Krosno, and 17 Gas Distribution Branches. PSG's branches operate within the administrative borders of the respective provinces. Ultimately, there will be 172 local gas utilities and 59 service points operating within the branches.

An important factor affecting the performance of PSG's operator obligations in 2018 was the conclusion of comprehensive gas supply contracts with an emergency supplier on behalf of and for about 57,000 end users, following the termination of gas fuel supply by Energetyczne Centrum SA and Energia dla Firm SA to customers connected to the distribution network.

### Length of network, including service lines (thousand km), and number of customers




* Customer – anyone receiving or drawing gas fuel under an agreement with a gas supplier.

**In 2018, PSG spent more than PLN 643m on network expansion and connection of new customers, of which approximately PLN 95m to buy out assets.**

See also: PGNiG Group Strategy for 2017-2022

### Capital expenditures in 2018

In order to ensure the improvement and maintenance of the technical condition of gas pipelines and to guarantee their operational safety, PSG is constantly investing to upgrade its network assets. In 2018, approximately PLN 553m was spent on the redevelopment and modernisation of the gas network, including more than PLN 201m on the replacement and verification of gas meters and metering systems.

In 2018, about 60 business and investment projects were implemented, including a number of projects designed to support the delivery of the PGNiG Group Strategy for 2017–2022, with a view to deploying new technology and organisational solutions in customer service, meter reading and billing of distribution services. The new solutions will improve process handling efficiency, enable uniform process reporting and monitoring across the Company, facilitate introduction of changes into business processes and improve information flow.

As a distributor of environmentally-friendly fuel, PSG additionally takes a range of measures promoting the prevention of smog and air pollution. In 2017, a number of environmental initiatives were launched, which were implemented in 2018 (often in cooperation with local governments). These include:

- Aktywizacja nieczynnych przyłączy (Activation of inactive connections) – a project aimed at mobilising customers who have inactive gas connections, especially in areas with a high level of low-stack emissions (smog);
- Przyłącz się, liczy się każdy oddech (Connect, because every breath matters) – an education and promotion project intended to raise the awareness of the risks to human health presented by air pollution and to promote gas fuel as an environmentally-friendly alternative to solid fuels;
- Proste przyłącze (Simple connection) – a project aimed at reducing the duration of the connection process.

In 2018, PSG continued its efforts to secure financing under the EU 2014–2020 financial framework. As part of Measure 7.1. – Development of intelligent storage, transmission and distribution systems, Priority axis VII – Improvement of energy security, PSG entered into agreements with the Oil and Gas Institute – National Research Institute, providing for co-financing of investment projects. The expected total cost of eight projects for which the co-financing agreements were executed in 2017–2018 exceeds PLN 498m (the amount of subsidies will be in excess of PLN 220m). The total length of the distribution pipelines to be built or modernised as part of the projects is 431 km.

In 2018, PSG continued efforts aimed at intensifying its research and development work with a view to enhancing its innovativeness. It partnered with various scientific and research institutions in Poland to identify potential innovative projects for PSG.

## Risks

Risk materiality level:
- low
- medium
- high

Probability that the risk will materialise:
- low
- medium
- high

Yoy change in the risk level:
- ↗ increase
- → no change
- ↘ decrease

**Limited market development in terms of supplying the distribution network**

→

Limitations at the entry points to the distribution system result from the limitations of the supply network and the insufficient capacity of gas stations. Consequently, the possibility of connecting new customers and gas network roll-out may be limited. In addition, end users may switch to direct or substitute competitors.

**Risk associated with direct competition**

↘

The activity of companies involved in the construction and/or operation of distribution networks and regasification plants limits the PGNiG Group's development opportunities and reduces the profitability of the constructed networks.

**Risk associated with lack of long-term regulatory policy**

→

The risk is related to the lack of URE's approval for freezing tariff prices. If the risk materialises, it may bring about reductions in tariff rates and difficulties in having each subsequent tariff approved. A protection against materialisation of this risk is the development of a regulatory and econometric model, subsequently agreed with URE.

**Claims raised by property owners**

→

The risk arises from failure to secure a permanent legal title to property at the stage of project execution and property owners' higher awareness of the related legal aspects. The consequences of materialisation of the risk include excessive (above market prices) claims made by property owners, increase in litiga-

tion, litigation costs, claims for removal or alteration of infrastructure, as well as provisions and claims related to extra-contractual use of property.

**Sources of gas supply for the distribution system**

●●● ●●○ →

The limited throughput capacity of the transmission network operated by GAZ-SYSTEM results in a significant delay in the extension of distribution infrastructure by PSG. The risk may affect the pace at which new customers are connected to the PSG network and the volume of distributed gas.

**Substitution**

●●○ ●●○ ↘

The substitution risk is associated with a potential lower cost of using alternative fuels and with unavailability or insufficient capacity of the gas network. In the context of alternative solid fuels, the difference relative to the cost of gas fuel has markedly shrunk, something that potential consumers do not always realise.

**Lower amount of EU funds allocated for financing gas distribution projects**

●●○ ●●○ ↗

This risk may result from fund allocation priorities set by the institutions responsible for distribution of EU funding. Unfavourable fund allocation may result in unavailability of financing for submitted projects or in low efficiency of such projects.

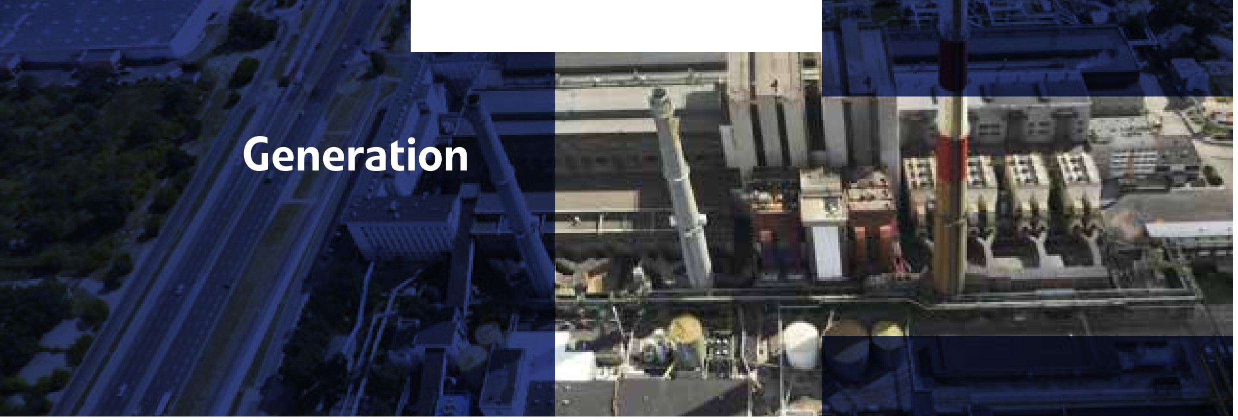
## Development prospects

PSG intends to carry out tasks related to the construction of gas networks, connection of new customers, network upgrades, as well as initiatives contributing to the development of the gas market and the gas distribution system, including:

- Addition of transmission network exit points;
- Development of gas distribution at PSG based on the LNG technology – building of LNG regasification stations, both to feed micro gas grids and to support the roll-out of local gas delivery solutions (including acquisition projects). Under the ‘Programme for accelerating investment in Poland’s gas network by PSG in 2018–2022’, the company has identified the possibility of opening a total of 77 LNG regasification stations;
- Identification of opportunities for agricultural biogas plants to feed the distribution network.

PSG will continue to carry out tasks under the ‘Programme for accelerating investment in Poland’s gas network in 2018–2022’. These will include 9 tasks designed to eliminate transmission limitations. Further, the company plans to continue work on 44 tasks under the strategic investment programme, while carrying out routine activities involving gas network expansion, connection of new customers in Poland, and upgrade of the existing network infrastructure.

# Generation



# Generation

## Segment description

See also: www.termika.pgnig.pl/en/

High-efficiency cogeneration - concurrent generation of heat and electric energy, delivering primary energy savings of more than 10%.

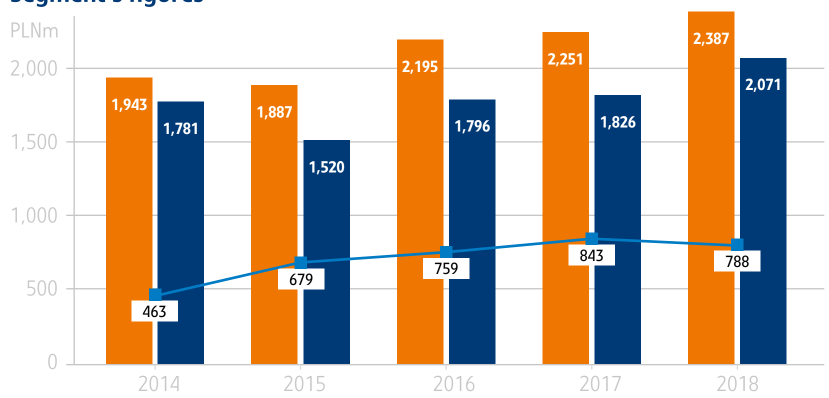
The segment's principal business consists in the production of heat and electricity, distribution of heat, and execution of large natural gas-fired projects in the power sector. In this field, the PGNiG TERMIKA Group acts as the competence centre for the PGNiG Group. The PGNiG TERMIKA Group comprises PGNiG TERMIKA SA (and its subsidiaries), PGNiG TERMIKA EP (and its subsidiaries) and the non-consolidated PGNiG TERMIKA Energetyka Rozproszona Sp. z o.o.

PGNiG TERMIKA'S business focus is on the generation and sale of heat and electricity, provision of system services, and administration of certificates of origin for electricity. The installed capacity of its generating assets is 4.3 GW of thermal power and 1 GW of electric power, which satisfies most of the heat demand on the Warsaw market and almost the entire demand of the district heating network. The company is also a producer and supplier of heat and the owner of heat sources and heat networks in Pruszków, Komorów and Piastów. PGNiG TERMIKA is one of the largest Polish producers of electricity and heat in high-efficiency cogeneration.

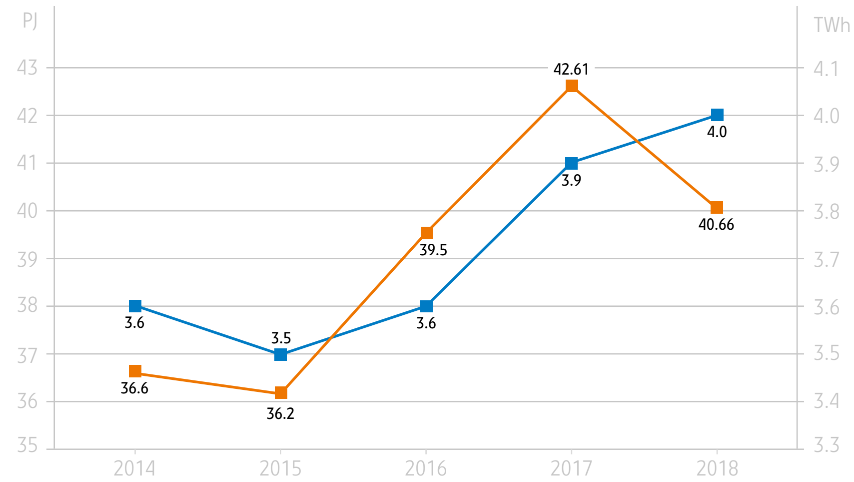
PGNiG TERMIKA EP was established following the merger of Przedsiębiorstwo Energetyki Cieplnej SA of Jastrzębie Zdrój and Spółka Energetyczna Jastrzębie SA, and its main activity is the production and distribution of electricity, compressed air, cooling, as well as heat generation, distribution and trading. PGNiG TERMIKA EP is the competence centre for commercial power generation and extraction of coal mine methane.

PGNiG TERMIKA EP operates generation assets with a total capacity of approximately 955 MWt and 181 MWe, and approximately 302 km of heat networks.

## Segment's figures




## Heat and electricity sales volumes from own generation sources




## Achievable capacity as per licence/plant/branch

| Generating unit | Heat [MW] | Electricity [MW] | Cooling [MW] | Compressed air capacity [thousand cm/h] |
|---|---|---|---|---|
| PGNiG TERMIKA | 4,346 | 1,015 | - | - |
| Siekierki CHPP | 2,068 | 620 | - | - |
| Żerań CHPP* | 1,300 | 386 | - | - |
| Pruszków CHPP | 164 | 9 | - | - |
| Kawęczyn HP | 465 | - | - | - |
| Wola HP | 349 | - | - | - |
| PGNIG TERMIKA EP | 954 | 181 | 17 | 337 |
| Zofiówka Branch** | 405 | 113 | - | 117 |
| Moszczenica Branch | 181 | 38 | - | - |
| Pniówek Branch | 72 | 14 | 17 | 123 |
| Suszec Branch (Suszec site) | 38 | 11 | - | 97 |
| Suszec Branch (Częstochowa site) | 3 | 3 | - | - |
| Wodzisław Branch (Wodzisław Śląski site) | 55 | 2 | - | - |
| Wodzisław Branch (Niewiadom site) | 3 | - | - | - |
| Racibórz Branch (Racibórz site) | 87 | - | - | - |
| Racibórz Branch (Kuźnia Raciborska site) | 4 | - | - | - |
| Żory Branch (Żory site) | 87 | - | - | - |
| Żory Branch (Leszczyny site) | 15 | - | - | - |
| Distribution Office | 4 | - | - | - |

* At the Żerań CHP, permanent shutdown of two WP120 water boilers (11, 12) to be decommissioned in connection with the adaptation of the plant to new emission requirements.

** Including the 70 MWe and 120 MWt CFB unit, commissioned in 2018.

The segment's operating profit for 2018 came in at PLN 316m, down by PLN 109m year on year. EBITDA was reported at PLN 788m, down by PLN 55m, or 7%, year on year. The segment's revenue was PLN 2,387m, having increased by PLN 136m on 2017.

The segment's performance was driven by higher average temperatures in 2018 compared with 2017, which translated into a nearly 5% year-on-year decline in the volumes of heat sold. The segment also produced 4.0 TWh of electricity, up 2% year on year, thanks mainly to contribution from the Zofiówka CHP plant, which was commissioned in the second half of the year. The segment's expenses rose 13% year on year, to PLN 2,071m, chiefly on higher prices of coal (up PLN 139m) and electricity for trading (up PLN 40m).

## Operations in 2018

In 2018, PGNiG TERMIKA supplied heat to two municipal networks: the Warsaw heating network, owned by Veolia Energia Warszawa SA, and its own heating network, covering Pruszków, Piastów, and Michałowice. The company also used Veolia's network to supply heat to its own end customers, based on a transmission contract (these customers are billed on different terms as they are classified in PGNiG TERMIKA's separate tariff group – 'OKW').

The thermal power generated by the company in 2018 met the requirements set out in the annual schedule agreed with Veolia Energia Warszawa SA. In July 2018, a new multi-year contract for heat supply from PGNiG TERMIKA generation facilities was signed between PGNiG TERMIKA and Veolia Energia Warszawa SA, effective from May 14th 2018 to August 31st 2028. The sale and supply of heat by PGNiG TERMIKA will be effected through the Warsaw heating network (the estimated network coverage is approximately 70% of total heat demand in Warsaw).

In 2018, in line with the investment plan, a contract for the construction of a CCGT unit and peak-load boiler house at the Żerań CHPP was being performed, and investment programmes were launched to upgrade the Pruszków CHPP and Kawęczyn HP.

## Capacity market

In 2018 the capacity obligation was rolled out to the market. It requires that a capacity market unit remains ready to deliver a certain volume of electric power to the power system and that it actually delivers a certain volume of electric power in a period of emergency. In 2018, as a result of three main auctions held by Polskie Sieci Energetyczne, PGNiG TERMIKA and PGNiG TERMIKA EP entered into the following capacity contracts:

- CCGT unit at the Żerań CHPP 2: A 17-year delivery contract for 2021–2037 (net capacity of 433 MW);
- Units No. 7 and No. 8 at the Siekierki CHPP: annual delivery contracts for 2021–2023 (total net capacity of 140 MW);
- Moszczenica CHPP unit: annual delivery contract for 2021–2023 (net capacity of 7 MW);
- Częstochowa-Wodzisław CHPP unit: annual delivery contract for 2021–2023 (net capacity of 1.2 MW).

Furthermore, the Stalowa Wola CHPP (a combined cycle unit project implemented by PGNiG TERMIKA and Tauron Polska Energia SA) signed a 7-year delivery contract for 2021–2027 (net capacity of 386 MW).

## Capital expenditures in 2018

In order to meet the more stringent emission requirements the generating assets are being gradually modernised. In 2018, the capital expenditure of the PGNiG TERMIKA Group amounted to PLN 605m.

In 2018, major investment projects included:

- Construction of a ca. 450 MW CCGT unit at the Żerań CHPP (Żerań CCGT) – a contract for unit delivery and erection as part of the project was performed in 2018. Foundations were laid for the main components, i.e. the electrical building, main structures for the recovery boiler and the gas turbine house. Additionally, the lower frame of the gas turbine, gas turbine stator and an overhead crane in the main building were installed. Work is currently under way to install recovery boiler modules, among others. Capital expenditure on the project is estimated at PLN 1.6bn;
- Construction of a ca. 450 MW CCGT unit at the Stalowa Wola CHPP (ECSW) – the EPCM service was provided during 2018. In 2018, tendering procedures were also carried out, resulting in contracts to complete the construction work and deliver the CCGT unit control system, among other things. In March 2018, a loan agreement was signed with Bank BGK, with the involvement of PGNiG, to complete the construction of the CCGT unit. Capital expenditure on the project is estimated at PLN 1.4bn;
- Construction of a ca. 70 MWe fluidised bed unit at the Zofiówka CHPP – in October 2018, PGNiG TERMIKA EP put the unit in service. The project is at the closing stage now – pending approval of the as-built documentation and drafting of the final project report. Capital expenditure on the project until the end of 2018: PLN 585m;
- Construction of a peak-load boiler house at the Żerań CHPP – In the second half of 2018, a building permit was obtained, and demolition works and utility rerouting were completed to release space for the site;
- Upgrading of the Pruszków CHPP – in 2018, a concept was prepared for the adaptation of the Pruszków CHPP to operations beyond 2022, and the final scenario of tasks to be executed in 2019–2022 was selected, including the construction of two coal-fired boilers, an oil-fired boiler house (with a light oil tank) and gas engines with a total capacity of up to 12 MWe;
- Projects aimed at bringing the generation units in line with BAT (Best Available Technique) – the objective is to expand the flue gas treatment system at PGNiG TERMIKA EP branches to achieve conformity with the extent and level of flue gas treatment required by the BAT Conclusions for existing units in order to maintain and sell energy utilities. The projects will be implemented at three sites: the Zofiówka Branch, Żory Branch, and Racibórz Branch.

The PGNiG TERMIKA Group is actively involved in innovation programmes. In 2018, it was engaged in project evaluations under the INGA initiative implemented by PGNiG, GAZ-SYSTEM and NCRD, and analysed options for growing the share of renewable technologies in cooperation with Honeywell. Additionally, PGNiG TERMIKA Group companies are involved in a range of R&D activities in collaboration with other PGNiG Group companies.

Risk materiality level:
●○○ low
●●○ medium
●●● high

Probability that the risk will materialise:
●○○ low
●●○ medium
●●● high

Yoy change in the risk level:
↗ increase
→ no change
↘ decrease

## Risks

### Acquired $CO_2$ emission allowances

●●● ●●● ↗

The Company purchases $CO_2$ emission allowances in quantities representing the difference between actual emissions and the emissions covered by free allowances it receives. The policy governing the purchase of $CO_2$ emission allowances at PGNiG TERMIKA allows, to some extent, for offsetting the effect of the purchase cost on profit or loss against revenue from the wholesale of electricity, whose price is partly correlated with the price of allowances.

### Fuel prices

●●● ●●● ↗

PGNiG TERMIKA uses coal (as its core fuel) and biomass. The rising cost of these fuels had a negligible effect on costs incurred in 2018 as the Company used fuels purchased under earlier contracts. Matching the timing of electricity and certificate sales to the timing of fuel purchases permits to partly mitigate the adverse impact of rising fuel prices on financial performance.

### Coal procurement and supply

●●● ●●● ↗

Coal is purchased mostly under contracts executed in advance to ensure that strategic coal stocks are maintained above the level required by the Regulation of the Minister of the Economy. In addition, coal transport services are purchased in accordance with the Public Procurement Law and in good time before the delivery is due. Any deterioration in contract performance by the BAT's trading partners may lead to non-compliance with the emergency stocks obligation.

### Adapting to BAT requirements

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With installations adapted to meet the requirements expressly stated in the Industrial Emissions Directive (IED), the next step will be to ensure compliance with emission limits imposed under the decision establishing the BAT Conclusions for large combustion plants. An investment plan has been developed to ensure that the emission and technology requirements defined in the BAT Conclusions are duly met.

## Development prospects

The Act on the Promotion of Electricity from High-Efficiency Cogeneration was passed in December 2018. The entry into force of its provisions along with a set of secondary legislation will allow the company to apply – with respect to the planned new gas-fired units of the PGNiG TERMIKA Group – for participation in a new support system that will replace the existing one, based on certificates of origin and described in the Energy Law. In consequence of the introduction of the capacity market system and the main auctions which have taken place, additional revenue has been secured for 2021–2037.

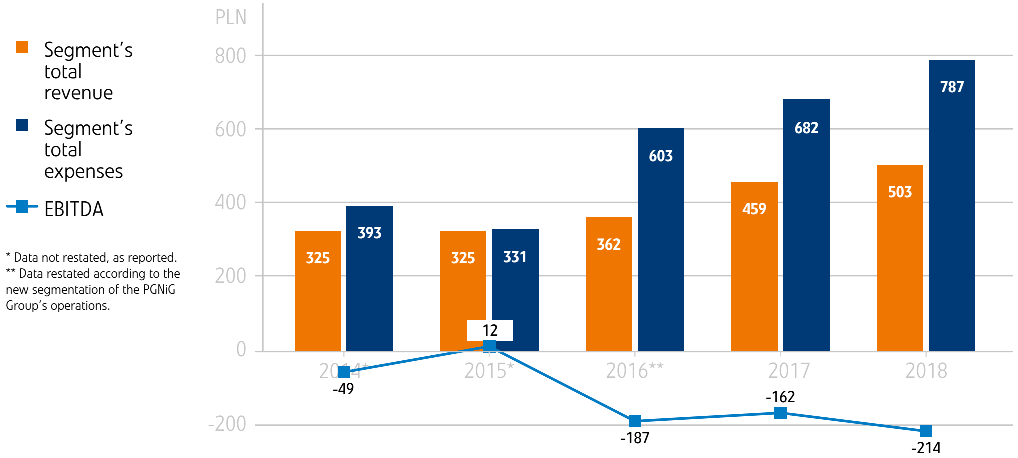
Furthermore, in 2019, the PGNiG TERMIKA Group will continue projects related to upgrades of existing and construction of new power generation units, including:

- Continuation of the construction of a CCGT unit at the Żerań CHPP – total capital expenditure estimated at PLN 1.6bn. Incurred capital expenditure on the project until the end of 2018: PLN 196m. Completion is scheduled for 2020. The progress of works at the end of 2018: 61%;
- Construction of a peak-load boiler house at the Żerań CHPP – total capital expenditure estimated at PLN 150m. Incurred capital expenditure on the project until the end of 2018: PLN 11m. The trial run is scheduled to begin in 2019;
- Continuation of the construction of a CCGT unit at the Stalowa Wola CHPP – total capital expenditure estimated at PLN 1.4bn. Incurred capital expenditure on the project until the end of 2018: PLN 1,1bn. Completion is scheduled for Q4 2019.

PGNiG TERMIKA will seek to improve its return on assets, diversify its fuel mix (coal, gas, biomass, RDF), and defend its market position as a leading heat producer in Warsaw. In the whole of Poland, it will focus on the acquisition of heating systems and development in the area of gas technologies in the heating sector, autoproducer generation and distributed generation.

# Other segments

## Segment's figures




* Data not restated, as reported.
** Data restated according to the new segmentation of the PGNiG Group's operations.

## Operations in 2018

### Corporate Centre

In the corporate centre, as part of the efforts to enhance the Group's image, in April 2017 PGNiG adopted the 'PGNiG Group Sustainable Development Strategy 2017–2022'. In 2018, the PGNiG Group was strongly involved in the implementation of R&D and innovation projects – primarily on improving process efficiency and enhancing products and services in key business areas. A mobile LNG metering station named SMOK was set up, which is likely to revolutionise the small-scale LNG market in Poland.

### PGNiG Branch – Central Measurement and Testing Laboratory (CLPB)

For more on Research, development and innovation see p. 81.

The CLPB provides services such as tests of accuracy and reliability of measurements of the quality and quantity of natural gas, testing of measuring devices and systems as well as technical analyses, opinions and technical expert reports. In 2018, it provided services related to the supervision of the cargo settlement system at the Świnoujście terminal, validation of gas chromatographs for the purposes of natural gas settlements, calibration of measurement systems at facilities on the Yamal pipeline and at the LNG Terminal. Key customers of the branch are members and branches of the PGNiG Group, GAZ-SYSTEM and EuroPolGaz SA.

### PGNiG Technologie

PGNiG Technologie implements comprehensive investment projects in the field of construction of crude oil and natural gas production facilities and natural gas transmission facilities. In 2018, it provided services to members of the PGNiG Group, related to development of fields and wells as well as supply of well surface equipment.

### PGNiG Serwis

The principal business of PGNiG Serwis is the provision of comprehensive finance, accounting, HR, payroll and ICT services, direct physical security services, reception services, project management support, and property management services for the PGNiG Group companies. PGNiG Serwis acts as a Shared Services Centre for 15 companies of the PGNiG Group.

### Gazoprojekt

Gazoprojekt provides consultancy and design services at all stages of administrative procedures: development of technical and economic project assumptions, and drafting of documentation and project execution plans. It performs feasibility studies and analyses, prepares studies for the purposes of applying for technical requirements and administrative decisions with respect to projects, draws up environmental studies, legally required documents, produces design, as-built and tender documentation, and prepares 3D visualisations. In 2018, demand for Gazoprojekt's project support work remained high. Most of it involved transmission infrastructure and hydrocarbon production.

### Geovita

Geovita's business involves leisure-related activities, spa treatment services, health protection, medical rehabilitation, and provision of conference and training services. Geovita's facilities are located in Dąbki, Mrzeżyno, Dźwirzyno, Jadwisin near Serock, Płotki near Piła, Gronów near Łagów, Jugowice, Lądek-Zdrój, Zakopane, Wisła, Złockie near Muszyna, Krynica-Zdrój, Czarna near Ustrzyki Dolne and Kraków. Since 2017, Geovita's operations have been undergoing changes in order to reduce operating expenses and use resources more efficiently. In the second half of 2018, further measures were taken to improve Geovita's participation in public procurement procedures.

### Polski Gaz Towarzystwo Ubezpieczeń Wzajemnych (Polski Gaz TUW, mutual insurance company)

In 2018, cooperation was continued with respect to insurance contracts for both PGNiG and PGNiG Group members. The company provides insurance mainly to PGNiG Group companies on the basis of members' mutuality within the company, which allows it to tailor the insurance services to policyholders' needs through their actual contribution to the company's operation and the ability to directly report their insurance needs.

In 2018, cover provided under the upstream business insurance for PGNiG was renewed, an application was filed with the Polish Financial Supervision Authority to extend the scope of Polski Gaz TUW's business to include sickness-related insurance, and the company's share capital was increased to PLN 40m in order to establish a life insurance subsidiary.

Moreover, two major changes took place in the regulatory environment of Polski Gaz TUW in 2018, which had a material effect on the operations of insurance companies. They involved a significant increase in information provision requirements in consequence of the entry into force of the Act on Insurance Distribution and the provisions of the GDPR.

Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

## Development prospects

### PGNiG Technologie

In line with the objectives for 2018–2020, PGNiG Technologie will operate primarily as a provider of construction and assembly services and manufacturer of finished products in the gas and oil mining sector, mainly as part of the PGNiG Group. The company additionally intends to improve the success rate of winning high-budget strategic contracts involving the construction or upgrade of gas and oil pipelines and mines, as well as development of oil/gas fields and underground gas storage facilities. Furthermore, PGNiG Technologie seeks to acquire new contracts on foreign markets (mainly in Norway and Ukraine) and in the power sector.

### PGNiG Serwis

The company perceives opportunities in the ongoing process of streamlining and reduction of operating expenses at the PGNiG Group, as a result of which it may take over ancillary activities and provide support services to more PGNiG Group companies. In 2019, PGNiG Serwis additionally wants to expand its personal, property and IT security business.

### Gazoprojekt

In 2019, Gazoprojekt will seek to continue its services for existing customers, not only within the PGNiG Group, but also for other leading gas and oil market players. This applies, in particular, to projects involving the transmission and storage of crude oil and natural gas, and expansion of chemical plants. Additionally, Gazoprojekt intends to intensify its networking efforts, seeking to acquire project support contracts on foreign markets.

### Geovita

In the near future, the company will continue its restructuring efforts to optimise costs and improve the efficiency of sales channels and operational processes.

### CLPB (Central Measurement and Testing Laboratory)

CLPB's primary objective is to maintain its position as the leading research laboratory and attestation centre for measurement systems and devices used in the natural gas industry and a natural gas quality control laboratory for all kinds of natural gas (L and E) and all their forms (CNG, LNG) as well as biogas. In the coming years, CLBP intends to grow its capabilities in testing hydrogen as a fuel for vehicles (there is no such laboratory in Poland, despite the emerging market for hydrogen fuel) and geological analysis (porosimetry and core gas testing, analysis of liquid mineral hydrocarbons).

# Financial results

# Financial results

## Consolidated financial report

In 2018, the PGNiG Group posted revenue of PLN 41,234m, up by PLN 5,549m (16%) compared with the previous year, when revenue was PLN 35,685m (after presentation changes under IFRS 15). In the same period, operating expenses amounted to PLN 36,839m, up 16% year on year. As a result, consolidated EBIT for 2018 came in at PLN 4,395m, up PLN 485m (12%) year on year, while EBITDA reached PLN 7,115m, up by PLN 536m (8%) year on year.

For more on EBIT see p. 193.

Key factors driving the increase of revenue, but also of operating expenses, during the year included the growing prices of hydrocarbons. With temperatures in Poland higher by an average of 0.6$^{0}$C in 2018, the Group sold a total of 29.0 bcm of gas (up 2.3 bcm on 2017). Sales of crude oil and condensate from production also rose year on year, by 140 thousand tonnes, to 1,410 thousand tonnes. The higher temperatures also translated into 5% lower heat output and only a minor (1%) increase in gas distribution volume.

### Change in EBITDA: 2017 vs 2018


* Including the provision for certificates of origin and energy efficiency certificates.

As at December 31st 2018, total assets recognised in the consolidated statement of financial position were PLN 53,271m, up PLN 5,068m (10%) at the end of 2017.

Property, plant and equipment are the largest component of the PGNiG Group's assets. As at December 31st 2018, this item amounted to PLN 34,236m, having increased by PLN 1,784m (6%) relative to December 31st 2017. The balance of impairment losses on those assets rose by PLN 240m year on year. Equity-accounted investees rose by PLN 205m (13%) year on year, following the revaluation of shares in Polska Grupa Górnicza Sp. z o.o. and Polimex-Mostostal S.A.

As at the end of 2018, the Group's current assets were PLN 14,373m, having increased by PLN 2,534m (21%) relative to the end of 2017. The rise in current assets was mainly attributable to the PLN 1,347m (52%) year-on-year increase in cash and cash equivalents. It is worth to note the growth in inventories, which stood at PLN 3,364m at the end of 2018, up by PLN 616m (22%) on the end of 2017.

Equity is the main source of financing of the PGNiG Group's assets. At the end of 2018, the Group's equity was PLN 36,632m, up by PLN 3,005m (9%) relative to the end of 2017. The change in equity was attributable, among others, to the net profit of PLN 3,209m earned in the reporting period and no dividend payment in 2017.

As at the end of 2018, non-current liabilities were PLN 7,255m, up PLN 251m (4%) on December 31st 2017. As at December 31st 2018, the PGNiG Group reported current liabilities of PLN 9,384m, up PLN 1,812m (24%) year on year. The increase in liabilities was attributable to a PLN 469m (23%) growth of short-term debt (mainly under debt securities) and a PLN 499m (15%) rise in trade and tax payables (mainly relating to current income tax).

In connection with the increase in equity and in current liabilities, the Group's debt ratio and debt to equity remained fairly stable year on year, having changed respectively from 30.2% to 31.2% and from 43.3% to 45.4%.

For more on ROE see p. 193.

For more on ROA see p. 193.

### Financial highlights of PGNiG Group

| PLNm | 2018 | 2017* | Change y/y |
|---|---|---|---|
| Revenue | 41,234 | 35,685 | 5,549 |
| Total operating expenses, including | (36,839) | (31,775) | (5,064) |
| Depreciation and amortisation expense | (2,720) | (2,669) | (51) |
| Operating profit (EBIT) | 4,395 | 3,910 | 485 |
| Profit before tax | 4,502 | 3,922 | 580 |
| Net profit | 3,209 | 2,921 | 288 |
| Net cash flows from operating activities | 5,814 | 4,816 | 998 |
| Net cash flows from investing activities | (4,704) | (3,863) | (841) |
| Net cash flows from financing activities | 237 | (4,204) | 4,441 |
| Net increase/(decrease) in cash and cash equivalents | 1,347 | (3,251) | 4,598 |
| | 31.12.2018 | 31.12.2017 | Change y/y |
| Total assets | 53,271 | 48,203 | 5,068 |
| Non-current assets | 38,898 | 36,364 | 2,534 |
| Current assets, including | 14,373 | 11,839 | 2,534 |
| Inventories | 3,364 | 2,748 | 616 |
| Total equity and liabilities | 53,271 | 48,203 | 5,068 |
| Total equity | 36,632 | 33,627 | 2,987 |
| Total non-current liabilities | 7,255 | 7,004 | 251 |
| Total current liabilities | 9,384 | 7,572 | 1,812 |
| Total liabilities | 16,639 | 14,576 | 2,063 |

*Data restated for comparability in connection with the application of the new IFRS 15 Financial Reporting Standard with effect from 1 January 2018

See also:
www.en.pgnig.pl/investor-relations/reports/periodic/-/raporty/2018

## Consolidated statement of profit or loss
### 2017 - 2018

| PLNm | 2018 | 2017 |
|---|---|---|
| Revenue from sale of gas | 29,628 | 28,613 |
| Other revenue | 11,606 | 7,244 |
| **Revenue** | **41,234** | **35,857** |
| Cost of gas sold | (24,941) | (20,127) |
| Other raw materials and consumables used | (2,519) | (2,586) |
| Employee benefits expense | (2,871) | (2,696) |
| Transmission services | (1,039) | (1,144) |
| Other services | (1,865) | (1,749) |
| Taxes and charges | (819) | (793) |
| Other income and expenses | (722) | (342) |
| Work performed by the entity and capitalised | 1,120 | 992 |
| Recognition and reversal of impairment losses on property, plant and equipment | (463) | (833) |
| **Operating profit before depreciation and amortisation (EBITDA)** | **7,115** | **6,579** |
| Depreciation and amortisation expense | (2,720) | (2,669) |
| **Operating profit (EBIT)** | **4,395** | **3,910** |
| Net finance costs | (4) | (16) |
| Profit/(loss) from equity-accounted investees | 111 | 28 |
| **Profit before tax** | **4,502** | **3,922** |
| Income tax | (1,293) | (1,001) |
| **Net profit** | **3,209** | **2,921** |
| Net profit attributable to: | | |
| Owners of the parent | 3,212 | 2,923 |
| Non-controlling interests | (3) | (2) |
| Weighted average number of ordinary shares (million) | 5,778 | 5,778 |
| Basic and diluted earnings per share (PLN) | 0.56 | 0.51 |

## Profitability
### as at December 31st 2018

| PLNm | 2018 | 2017 |
|---|---|---|
| **EBIT** operating profit (PLNm) | 4,395 | 3,910 |
| **EBITDA**<br>operating profit + depreciation/amortisation (PLNm) | 7,115 | 6,579 |
| **Adjusted EBITDA**<br>operating profit + depreciation/amortisation + impairment losses on property, plant and equipment (PLNm) | 6,891 | 7,012 |
| **ROE**<br>net profit to equity at end of period | 8.8% | 8.7% |
| **Net margin**<br>net profit to revenue | 7.8% | 8.2% |
| **ROA**<br>net profit to assets at end of period | 6.0% | 6.1% |

## Liquidity
### as at December 31st 2018

| PLNm | 2018 | 2017 |
|---|---|---|
| **Current ratio**<br>current assets to current liabilities (net of employee benefit obligations, provisions and deferred revenue) | 1.8 | 1.8 |
| **Quick ratio**<br>current assets less inventories to current liabilities (net of employee benefit obligations, provisions and deferred revenue) | 1.3 | 1.4 |

## Debt
### as at December 31st 2018

| | 2018 | 2017 |
|---|---|---|
| **Debt ratio**<br>total liabilities to total equity and liabilities | 31.2% | 30.2% |
| **Debt to equity ratio**<br>total liabilities to equity | 45.4% | 43.3% |

## Consolidated statement of comprehensive income
### 2017 - 2018

| PLNm | 2018 | 2017 |
|---|---|---|
| **Net profit** | **3,209** | **2,921** |
| Exchange differences on translating foreign operations | (19) | (65) |
| Hedge accounting | 285 | (76) |
| Revaluation of financial assets available for sale | - | (6) |
| Deferred tax | (15) | 15 |
| Share of other comprehensive income of equity-accounted investees | 4 | (4) |
| **Other comprehensive income subject to reclassification to profit or loss** | **255** | **(136)** |
| Actuarial losses on employee benefits | (33) | (23) |
| Deferred tax | 6 | 4 |
| Share of other comprehensive income of equity-accounted investees | 1 | 1 |
| **Other comprehensive income not subject to reclassification to profit or loss** | **(26)** | **(18)** |
| **Other comprehensive income, net** | **229** | **(154)** |
| **Total comprehensive income** | 3,438 | 2,767 |
| Total comprehensive income attributable to: | | |
| Owners of the parent | 3,441 | 2,769 |
| Non-controlling interests | (3) | (2) |

## Consolidated statement of cash flows

2017 - 2018

| PLNm | 2018 | 2017 |
|---|---|---|
| **Cash flows from operating activities** | | |
| Net profit | 3,209 | 2,921 |
| Depreciation and amortisation expense | 2,720 | 2,669 |
| Current tax expense | 1,293 | 1,001 |
| Net gain/(loss) on investing activities | (154) | 452 |
| Other non-monetary adjustments | 432 | 304 |
| Income tax paid | (1,060) | (755) |
| Movements in working capital | (626) | (1,776) |
| **Net cash from operating activities** | **5,814** | **4,816** |
| **Cash flows from investing activities** | | |
| Expenditure for acquisition of tangible exploration and evaluation assets under construction | (851) | (740) |
| Payments for other property, plant and equipment and intangible assets | (3,683) | (2,422) |
| Payments for shares in related entities | (90) | (347) |
| Other items, net | (80) | (354) |
| **Net cash from investing activities** | **(4,704)** | **(3,863)** |
| **Cash flows from financing activities** | | |
| Increase in debt | 3,160 | 2,218 |
| Proceeds from derivative financial instruments | - | 165 |
| Decrease in debt | (2,510) | (5,407) |
| Dividends paid | (404) | (1,156) |
| Payments for derivative financial instruments | - | (20) |
| Other items, net | (9) | (4) |
| **Net cash from financing activities** | **237** | **(4,204)** |
| **Net cash flows** | **1,347** | **(3,251)** |
| Cash and cash equivalents at beginning of period | 2,581 | 5,832 |
| **Cash and cash equivalents at end of period** | **3,928** | **2,581** |

## Consolidated statement of financial position

as at December 31st 2018

| PLNm | 2018 | 2017 |
|---|---|---|
| **Assets** | | |
| Property, plant and equipment | 34,236 | 32,452 |
| Intangible assets | 1,173 | 1,115 |
| Deferred tax | 94 | 141 |
| Equity-accounted investees | 1,806 | 1,601 |
| Derivative financial instruments | 226 | - |

| | | |
|---|---|---|
| Other assets | 1,363 | 1,055 |
| **Non-current assets** | **38,898** | **36,364** |
| Inventories | 3,364 | 2,748 |
| Receivables | 5,742 | 5,781 |
| Derivative financial instruments | 1,092 | 450 |
| Other assets | 204 | 216 |
| Cash and cash equivalents | 3,925 | 2,578 |
| Assets held for sale | 46 | 66 |
| **Current assets** | **14,373** | **11,839** |
| **Total** | **53,271** | **48,203** |
| **Equity and liabilities** | | |
| Share capital | 7,518 | 7,518 |
| Hedging reserve | 73 | 7 |
| Accumulated other comprehensive income | (203) | (165) |
| Retained earnings | 29,246 | 26,266 |
| Equity attributable to owners of the parent | 36,634 | 33,626 |
| Equity attributable to non-controlling interests | (2) | 1 |
| **Total equity** | **36,632** | **33,627** |
| Financing liabilities | 1,178 | 951 |
| Derivative financial instruments | 105 | - |
| Employee benefit obligations | 808 | 725 |
| Provision for well decommissioning costs | 1,917 | 1,717 |
| Other provisions | 197 | 181 |
| Grants | 720 | 767 |
| Deferred tax liabilities | 2,066 | 2,019 |
| Other liabilities | 264 | 644 |
| **Non-current liabilities** | **7,255** | **7,004** |
| Financing liabilities | 2,524 | 2,055 |
| Derivative financial instruments | 1,055 | 322 |
| Trade and tax payables* | 3,748 | 3,249 |
| Employee benefit obligations | 347 | 371 |
| Provision for well decommissioning costs | 91 | 53 |
| Other provisions | 675 | 621 |
| Other liabilities | 944 | 901 |
| **Current liabilities** | **9,384** | **7,572** |
| **Total liabilities** | **16,639** | **14,576** |
| **Total** | **53,271** | **48,203** |

* Including income tax of PLN 418 (2017: PLN 217m)

## Consolidated statement of changes in equity
### PLNm, as at December 31st 2018

| | Equity attributable to owners of the parent | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Share capital and share premium, including: | | | Accumulated other comprehensive income: | | | | | | | |
| | Share capital | Share premium | Hedging reserve | Exchange differences on translating foreign operations | Revaluation of financial assets available for sale | Actuarial gains/(losses) on employee benefits | Share of other comprehensive income of equity-accounted investees | Retained earnings | Total | Equity attributable to non-controlling interests | Total equity |
| **As at Jan 1 2017** | **5,778** | **1,740** | **69** | **(28)** | **2** | **(45)** | **(2)** | **-** | **-** | **3** | **32,016** |
| Net profit | - | - | - | - | - | - | - | 2,923 | 2,923 | (2) | 2,921 |
| Other comprehensive income, net | - | - | (62) | (65) | (5) | (19) | (3) | - | (154) | - | (154) |
| **Total comprehensive income** | **-** | **-** | **(62)** | **(65)** | **(5)** | **(19)** | **(3)** | **2,923** | **2,769** | **(2)** | **2,767** |
| Dividend | - | - | - | - | - | - | - | (1,156) | (1,156) | - | (1,156) |
| **As at Dec 31 2017** | **5,778** | **1,740** | **7** | **(93)** | **(3)** | **(64)** | **(5)** | **26,266** | **33,626** | **1** | **33,627** |
| **As at Jan 1 2018** | **5,778** | **1,740** | **7** | **(93)** | **(3)** | **(64)** | **(5)** | **26,266** | **33,626** | **1** | **33,627** |
| Effect of amended IFRS 9 | - | - | - | - | 3 | - | - | 172 | 175 | - | 175 |
| Net profit | - | - | - | - | - | - | - | 3,212 | 3,212 | (3) | 3,209 |
| Other comprehensive income, net | - | - | 270 | (19) | - | (27) | 5 | - | 229 | - | 229 |
| **Total comprehensive income** | **-** | **-** | **270** | **(19)** | **-** | **(27)** | **5** | **3,212** | **3,441** | **(3)** | **3,438** |
| Change in equity recognised in inventories | - | - | (204) | - | - | - | - | - | (204) | - | (204) |
| Dividend | - | - | - | - | - | - | - | (404) | (404) | - | (404) |
| **As at Dec 31 2018** | **5,778** | **1,740** | **73** | **(112)** | **-** | **(91)** | **-** | **29,246** | **36,634** | **(2)** | **36,632** |

## Operating segments
### PLNm, as at December 31st 2018

| 2018 | Sales to external customers | Inter-segment sales | Total revenue | EBITDA | Depreciation and amortisation expense | EBIT (operating profit) | Recognition and reversal of impairment losses on property, plant and equipment | Profit/(loss) from equity-accounted investees | Expenditure on acquisition of property, plant and equipment and intangible assets | Property, plant and equipment | Workforce* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exploration and Production | 3,795 | 3,876 | 7,671 | 5,019 | (1,063) | 3,956 | (484) | 93 | (2,216) | 13,132 | 6,847 |
| Trade and Storage | 31,038 | 666 | 31,704 | (848) | (189) | (1,037) | - | - | (54) | 3,196 | 3,051 |
| Distribution | 4,604 | 323 | 4,927 | 2,385 | (927) | 1,458 | (2) | - | (1,713) | 14,018 | 11,542 |
| Generation | 1,617 | 770 | 2,387 | 788 | (472) | 316 | 16 | - | (391) | 3,588 | 1,813 |
| Other Segments | 180 | 323 | 503 | (214) | (70) | (284) | 7 | 18 | (142) | 528 | 1,510 |
| Total | 41,234 | 5,958 | 47,192 | 7,130 | (2,721) | 4,409 | (463) | 111 | (4,516) | 34,462 | 24,763 |
| Reconciliation with consolidated data | - | - | (5,958) | (15) | 1 | (14) | - | - | (18) | (226) | - |
| Total | - | - | 41,234 | 7,115 | (2,720) | 4,395 | (463) | 111 | (4,534) | 34,236 | - |

*Excluding employees of equity-accounted investees.

## Operating segments
### PLNm, as at December 31st 2017

| 2017** | Sales to external customers | Inter-segment sales | Total revenue | EBITDA | Depreciation and amortisation expense | EBIT (operating profit) | Recognition and reversal of impairment losses on property, plant and equipment | Profit/(loss) from equity-accounted investees | Expenditure on acquisition of property, plant and equipment and intangible assets | Property, plant and equipment | Workforce* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exploration and Production | 3,092 | 3,026 | 6,118 | 3,865 | (1,060) | 2,805 | (479) | 18 | (1,142) | 12,244 | 6,998 |
| Trade and Storage | 26,045 | 495 | 26,540 | (434) | (205) | (640) | (364) | - | (89) | 3,337 | 2,961 |
| Distribution | 4,753 | 184 | 4,937 | 2,493 | (925) | 1,568 | 3 | - | (1,190) | 13,142 | 11,114 |
| Generation | 1,655 | 596 | 2,251 | 843 | (418) | 425 | 3 | - | (603) | 3,485 | 1,785 |
| Other Segments | 141 | 318 | 459 | (162) | (61) | (223) | 4 | 10 | (93) | 440 | 1,836 |
| Total | 35,685 | 4,619 | 40,305 | 6,605 | (2,669) | 3,935 | (833) | 28 | (3,117) | 32,648 | 24,694 |
| Reconciliation with consolidated data | - | - | (4,619) | (26) | - | (25) | - | - | (45) | (196) | - |
| Total | - | - | 35,685 | 6,579 | (2,669) | 3,910 | (833) | 28 | (3,162) | 32,452 | - |

* Excluding employees of equity-accounted investees.

** Data restated for comparability in connection with the application of the new IFRS 15 Financial Reporting Standard with effect from 1 January 2018

# Projected future financial standing

In the coming periods, the financial standing of the PGNiG Group will be materially affected by changes in the prices of hydrocarbons on global commodity markets and fluctuations in foreign exchange rates. These factors will be of particular importance for the PGNiG Group's performance in the Exploration and Production and Trade and Storage segments.

Any changes in hydrocarbon prices affect revenues of the Group entities engaged in production, and determine the demand for seismic and exploration services offered by the Group companies. Rising gas and crude oil prices have a positive effect on performance generated by the Exploration and Production segment. Long-term forecasts of hydrocarbon prices strongly influence projected cash flows from production assets, and as a consequence entail the necessity of revaluation of property, plant and equipment.

On the other hand, in view of the fact that the prices of gas purchased by PGNiG under the Yamal and Qatar contracts are linked to prices of crude oil, the effect of rising oil prices on the performance of the Trade and Storage segment is opposite to the effect that rising oil prices have on the performance of the Exploration and Production segment. Any increase of crude oil prices translates into higher cost of gas purchased by PGNiG. This correlation may change following the ruling by the Stockholm Arbitration Tribunal regarding the price formula used in the Yamal contract.

The PGNiG Group's financial results will also be materially affected by situation on the domestic currency market. Any strengthening of the złoty against foreign currencies (primarily the US dollar) will have a positive effect on performance of the Trade and Storage segment by driving down PGNiG's gas procurement costs, although it must be noted that the effect of exchange rate fluctuations is mitigated by the PGNiG Group's hedging policy.

The PGNiG Group's financial results will also be affected by the President of URE's position regarding the level of gas fuel sale and distribution tariffs and heat sale tariffs. In addition, the progressing deregulation of the gas market in Poland will continue to put pressure on the performance of the PGNiG Group's Trade and Storage companies engaged in the provision of gas sale services. Competition for customers has prompted the launch of a number of discount schemes dedicated to customers buying gas from the Group and the change in pricing terms to reflect market prices. These factors may have an adverse effect on the profitability of the Trade and Storage segment by eroding its margins.

However, the PGNiG Group companies have put in place a number of initiatives to improve efficiency. These initiatives focus, among other things, on optimisation of the cost base and are expected to have a positive effect on the PGNiG Group's financial results.

In the Generation segment, financial results will also be considerably affected by the support programmes for electricity produced from high-efficiency cogeneration sources and renewable sources. Changes in the market prices of $CO_2$ emission allowances will be increasingly affecting the PGNiG Group's financial position in the segment. Another key factor affecting the segment's performance are prices of the fuels used to produce heat and electricity.

In the coming quarters, the Group intends to maintain a high level of capital expenditure. Spending will focus primarily on projects involving maintenance of hydrocarbon production rates, as well as projects in the exploration for and appraisal of crude oil and natural gas deposits, and development of the power generation segment.

### Capital expenditure* on property, plant and equipment planned by the PGNiG Group in 2019

| | PLNm | 2019** |
|---|---|---|
| I. | **Exploration and Production, including:** | **2,579** |
| 1 | Norway | 662 |
| 2 | Pakistan | 244 |
| 3 | Libya | 1 |
| II. | **Trade and Storage** | **221** |
| III. | **Distribution** | **1,994** |
| IV. | **Generation** | **1,859** |
| V. | **Other Segments** | **195** |
| VI. | **Total capital expenditure (I-V)** | **6,626** |
| | including PGNiG | 1,972 |

* Including capitalised borrowing costs.
** Planned expenditure does not include expenditure on potential acquisitions.

The above amounts do not include potential expenditure on acquisition of hydrocarbon deposits or acquisitions in the power sector. When evaluating the feasibility of its investment plans for 2019 and beyond, the PGNiG Group takes into account its financial standing, including the available sources of external financing and cash generated by the Group's day-to-day operations. Based on such evaluation, it can be concluded that the funds available to the PGNiG Group are sufficient to finance its investment plans.

# Corporate Governance


# Management Board

## Piotr Woźniak

President of the Management Board

Piotr Woźniak graduated from the University of Warsaw with a degree in geology. In 1990 and 1991, he was an adviser to the Agriculture Minister and Industry Minister. Between 1992 and 1996, he was the Trade Commissioner of the Republic of Poland in Canada. In 1998–2000, Piotr Woźniak was an adviser on infrastructure to the Polish Prime Minister. In 1999–2002, he held various positions in PGNiG, including member of the Supervisory Board and Vice President of the Management Board (from June 2000). He served on the Warsaw City Council in 2002–2006. From 2005 to 2007, he was the Economy Minister.

From December 2011 to December 2013, Mr Woźniak was the Deputy Minister of the Environment and Chief State Geologist. He is a lecturer at the Łazarski University and at the Warsaw School of Economics, and a member of the Council of the Maria Grzegorzewska University in Warsaw. From 2009 he served as Chairman, and from March 2014 to the end of 2015 he was the Deputy Chairman, of the Administrative Board of the Agency for the Cooperation of Energy Regulators (ACER). He was a member of the Board until September 2017.

On December 19th 2016, Piotr Woźniak was reappointed President of the Management Board of PGNiG for the three-year term of office beginning December 31st 2016.

**President of the Management Board:**

- manages the work of the Management Board and coordinates the work of Management Board members in all areas of the PGNiG Group's activity;
- supervises and coordinates the Company's operations, including with respect to:
  - internal control and audit functions;
  - HR strategies, pay schemes and working time, employment and payroll policies;
- protection of classified information, protection of personal data, protecting and defending the Company's facilities;
- corporate governance within the PGNiG Group and optimisartion of the PGNiG Group's structure;
- policy, objectives and programmes related to hydrocarbon exploration and production in Poland and abroad, overseeing all licensing processes related to hydrocarbon exploration, appraisal and production, as well as storage of waste matter in rock mass and non--reservoir storage of substances;
- formulation of assumptions and technical regulations, norms and standards applicable in the area of oil drilling, operation and safety of production systems and underground storage facilities, standardisation and oversight of uniform quality systems;
- acquisition of foreign upstream assets;
- planning, and IT systems development and operation, as well as IT development;
- comprehensive legal support protecting PGNiG's legal interests, uniform application of general law, issuance of official orders and circulars for the Company;
- operations of the Geology and Hydrocarbon Production Branch, the PGNiG Branches in Odolanów, Sanok and Zielona Góra, Well Mining Rescue Station in Kraków, and the Company's foreign branches – operations of the Company's representative office in Moscow.

## Robert Perkowski

Vice President, Operations

Robert Perkowski is an economist, member of the local government, PhD in Economics. Mr Perkowski completed a post-graduate course in Management Analytics at Instytut Organizacji i Zarządzania w Przemyśle ORGMASZ (ORGMASZ Institute of Industry Organisation and Management), where he also completed International Doctoral Studies. His PhD programme was opened and conducted at the Institute of Economics of the Polish Academy of Sciences. He also completed a full-time MA programme at the Non-Public Higher School of Business and Administration of Warsaw, majoring in Marketing and Management, and in Finance and Banking. He has written more than a dozen research articles.

Mr Perkowski gained his first professional experience in 2001 as a trainee at the finance department of Dacon Corp. LTD at Queen's University, Canada. In 2002, he began work for the Department of Justice where he was, among other things, responsible for developing projects of financial plans in the field of wage structures of the Prison Service. In 2006–2018, he was the Mayor of the town of Ząbki. He also served as President of the Polish Local Governments Association (Związek Samorządów Polskich) where provided training services and was a member of municipality and county councils.

On March 18th 2019 he was appointed Vice President of the Management Board of PGNiG for Operations, for the three-year term of office beginning December 31st 2016.

He replaced Radosław Bartosik, who held the position of the Vice President for Operations from December 31st 2016 to January 16th 2019.

**The Vice President for Operations supervises and coordinates the Company's operations, including with respect to:**

- corporate social responsibility (CSR);
- the Company's and the PGNiG Group's procurement strategy;
- management of the Company's assets, excluding network assets, extraction assets and underground gas storage facilities;
- management of the Company's non-production assets, including property;
- creation and implementation of the sponsorship policy and the Company's image in Poland and abroad;
- cooperation with transmission and distribution system operators.

## Łukasz Kroplewski

Vice President, Development

A lawyer and mediator, he completed an Executive MBA course. Member of the UNECE Group of Experts on Coal Mine Methane. Vice Chairman of the UNECE Group of Experts on Gas. President of the Chamber of Natural Gas Industry. President of the International Centre of Excellence on Coal Mine Methane (ICE-CMM). Member of the Scientific Council of the Institute of Aviation of the 2017–2021 term. Counsel at the National Chamber of Commerce.

On December 19th 2016, he was appointed Vice President for Development, for the three-year term of office beginning December 31st 2016.

**The Vice President for Development supervises and coordinates such areas as:**

- innovation and growth projects involving PGNiG;
- analysing and monitoring opportunities to obtain EU funding for the Company's operations;
- oversight of standardisation activities at the Company;
- development of technical assumptions, rules, norms and standards for the gas area;
- oversight of the Central Measurement and Testing Laboratory and of the PGNiG foreign representative offices in Kiev and Vysokoye.

## Michał Pietrzyk

Vice President, Finance

Michał Pietrzyk is a graduate of Finance and Banking at the Kraków University of Economics. He also completed a post-graduate course in law for managers at the Kozminski University. He started his professional career in 1995 in the banking sector. With the PGNiG Group since 2003, he first worked as Head of the Treasury Department of PGNiG and from 2006 to 2016 as Deputy Head of the Economic Department. In February 2016, Mr Pietrzyk became the Head of PGNiG's Economic Department.

On December 19th 2016, he was appointed Vice President for Finance, for the three-year term of office beginning December 31st 2016.

**The Vice President for Finance supervises and coordinates such areas of the Company's operations as:**

- implementation of the Company's strategic economic and financial objectives;
- preparation and implementation of the Company's Business Plan;
- economic and financial evaluations and analyses of growth and investment projects, planning and overseeing financial aspects of the investment policy, monitoring of the use of financial resources allocated to production, investment and repair work;
- PGNiG's internal settlement procedures and financing operations;
- cash flows of the PGNiG Group, budgeting and control of the Company's costs and revenue, its credit policy, tax policy and tax liabilities;
- financial risk management, economic and financial analyses of new capital projects;
- implementation and development of accounting procedures;
- defining the rules of and overseeing the preparation of financial statements;
- investor relations.

## Maciej Woźniak

Vice President, Trade

Maciej Woźniak is a graduate of the Cracow University of Economics (holding a master's degree in economics) and the National School of Public Administration. He also completed a post-graduate course in property valuation at the Warsaw University of Technology. He is a member of the Polish Civil Service Corps. In 2011, he participated in the International Visitor Leadership Program run by the US Department of State.

In 2003–2008, he worked at the Ministry of Finance and at the Ministry of Economy, where he led the Oil and Gas Department and was responsible for the implementation of the Act on Mandatory Oil, Gas and Fuel Stocks and for securing Poland's accession to OECD's International Energy Agency based in Paris. After it joined the IEA, he represented Poland at IEA Governing Board meetings a number of times. He also supervised the implementation of the second package of the EU gas market liberalisation legislation and led the coordination of Poland's position in the EU during work on the third package.

In 2008–2010, he was Prime Minister's chief adviser on energy security and secretary of the Prime Minister's interdepartmental energy security policy team. He represented Poland in the V4 High-Level Group on Energy and the EC's Group for the Baltic Energy Market Interconnection Plan. He supervised the pre-construction phase of the Świnoujście LNG Terminal project. He was on the team negotiating the intergovernmental gas supply contract between Poland and Russia. He resigned from the position of Prime Minister's adviser after the contract was signed in November 2010. In 2011–2013, he advised the Minister of the Environment and Chief State Geologist on the geological and mining law reform. He sat on the Supervisory Boards of Operator Logistyczny Paliw Płynnych and Wielkopolska Spółka Gazownictwa and served as Chairman of the Supervisory Board of the Provincial Fund for Environmental Protection and Water Management of Warsaw.

On December 19th 2016, he was reappointed Vice President for Trade, for the three-year term of office beginning December 31st 2016.

**The Vice President for Trade supervises and coordinates the functioning of the Company, including with respect to:**

- developing a regulatory policy in consultation with government authorities, EU authorities and industry organisations;
- planning and implementing the Company's trade policy, particularly in respect of natural gas and electricity sales, gas, electricity and other products sales policy;
- guiding the development of the gas market, natural gas import policy, also with respect to supply diversification;
- establishing and maintaining long-term relationships with foreign companies, international organisations and foreign government authorities with respect to trade relations, monitoring and analysis of foreign markets;
- collaboration with GAZ-SYSTEM, Polskie LNG, the Maritime Office in Szczecin and the Management Board of Porty Morskie Szczecin i Świnoujście in respect of importing LNG to Poland;
- planning, executing and settling contracts for the provision of gas transmission and distribution services for PGNiG;
- preparing periodic gas fuel balance reports, periodic settlements of gas deliveries, information services, including the receipt of information on events and crises in all areas of the Company's business;
- the Company's tariff policy, liaising with the Energy Regulatory Office (URE) in respect of preparing draft tariffs and prices of PGNiG's products and services, and licences;
- the Company's information policy and corporate communication;
- operations of the Wholesale Trading Branch and operations of the Company's foreign representative office in Brussels.

## Magdalena Zegarska

Vice President of the Management Board

Magdalena Zegarska graduated from the University of Environmental Sciences in Radom. She completed an MBA oil and gas course and holds a certificate of completion of studies in Management of Large Enterprises from the School of Management and Marketing of the Business Initiatives Association in Warsaw. She completed numerous training programmes and courses in psychology of team management, as well as a course for supervisory board members, completed with a passed exam before the State Treasury Commission. From 2011 to 2014, she served as Secretary of the Employee Council of the second term of office, and from 2010 to 2014 as Secretary of the Coordination Committee of the NSZZ Solidarność trade union at PGNiG. In 2014–2017, she served as a Member of the PGNiG Supervisory Board, as the Board's Secretary and as Deputy Chair of the Audit Committee. She joined PGNiG in 1998 as an employee of Mazowiecka Spółka Gazownictwa and then worked at the Mazovian Trading Division. From 2013, she held various positions at the Retail Trading Department, Infrastructure Department and Asset and Administration Department of the PGNiG Head Office. At the Asset and Administration Department she was Deputy Director. Since January 2016, she has been Representative of the PGNiG Management Board for the Quality, Health, Safety and Environment (QHSE) Management System. From April 2016 to March 2017, she served as Deputy Director of the QHSE Department, delegated to direct the work of the Department.

She has received honorary awards for outstanding service to the Oil Mining and Gas Sector and the Mazovian Trading Division. She is a Grade III Mining Director and Grade II Mining Director.

On March 6th 2017, Magdalena Zegarska was appointed as Vice President of the Management Board.

**The Vice President of the Management Board elected by Company employees supervises and coordinates the Company's operations in such areas as:**

- occupational health and safety, fire protection;
- cooperation with trade unions, the Employee Council and other employee organisations where their operations relate to the Company and the PGNiG Group;
- issue of shares to eligible Company employees.

# Supervisory Board

## Bartłomiej Nowak

Chairman of the Supervisory Board

Mr Bartłomiej Nowak completed management courses at the Kozminski University in Warsaw and is a graduate of the Faculty of Law and Administration of the University of Warsaw. Since 2009, he has held the degree of Doctor of Laws - European University Institute, and since 2013 - a Habilitated Doctor degree from the Institute of Legal Sciences of the Polish Academy of Sciences.

Bartłomiej Nowak specialises in energy law, business law, competition law, and EU law. In 2007–009, he worked for Directorate-General for Transport and Energy of the European Commission and as an adviser to the President of the Polish Energy Regulatory Office (URE). In 2010-2014, he was an adviser at the Kancelaria Domański Zakrzewski Palinka Sp.k. law firm and member of the Supervisory Board of PTE WARTA SA. Since 2009, he has worked for the Leon Kozminski University of Warsaw, initially as Assistant Professor and then Professor at the Law College, as well as Vice-Rector for Economic and Social Studies. Member of the Scientific Council of the National Centre for Nuclear Research.

Bartłomiej Nowak has submitted a statement to the effect that he meets the independence criteria stipulated under Art. 129 of the Polish Act on Statutory Auditors, Audit Firms, and Public Oversight dated May 11th 2017 and under Commission Recommendation 2005/162/EC of February 15th 2005.

Bartłomiej Nowak has served as Chairman of the Supervisory Board since July 27th 2016.

## Piotr Sprzączak

Deputy Chairman of the Supervisory Board

Piotr Sprzączak is a graduate of the Maria Curie-Skłodowska University of Lublin and the National School of Public Administration of Warsaw. He began his professional career in 2011 at the Oil and Gas Department of the Ministry of Economy, and then the Ministry of Energy. He is currently Head of the Infrastructure Department at the Ministry of Energy. As part of his job duties, he participates in negotiations of EU legal acts, including the revision of the Gas Directive, the Regulation concerning measures to safeguard security of gas supply, and shaping the regulatory environment through the ‘Clean energy for all Europeans’ package. He coordinates activities related to international cooperation and Poland’s membership in the European Union and in international energy organisations and agreements. In 2011–2014, he was involved in preparing and updating the assessment of risk related to security of gas supplies, a prevention plan and an emergency response plan.

Since June 29th 2017, Piotr Sprzączak has been Deputy Chairman of the Supervisory Board.

## Sławomir Borowiec

Secretary of the Supervisory Board

Sławomir Borowiec graduated from the AGH University of Science and Technology in Kraków (Faculty of Drilling, Oil and Gas) in 1992. In the same year he joined Zielonogórski Zakład Górnictwa Nafty i Gazu. In 2001, he graduated from The Jacob of Paradyż University of Applied Sciences in Gorzów Wielkopolski – Institute of Management and Finance, where he completed studies in Management and Marketing. In 2014, he earned a degree from the Koszalin University of Technology, where his principal field of study was Accounting – Accounting of Business Entities. At present, he is Head of the Administrative Centre for Oil and Gas Production Facilities. Mr Borowiec is also a licensed Mine Operations Manager. In 2002, he passed an examination for candidates to supervisory boards of state-owned companies and in 2010 he received a title of Grade II Mining Director.

Sławomir Borowiec has served as Secretary of the Supervisory Board since March 6th 2017.

## Piotr Broda

Member of the Supervisory Board

Piotr Broda is a graduate of the Faculty of Foreign Trade of the Warsaw School of Economics and holder of an Executive MBA degree from the University of Minnesota. He gained professional experience working in leading financial institutions. In 1991, he joined Bank Austria Creditanstalt SA of Warsaw. He was Deputy Director of the Treasury Department (1995–1998), and then Director of the Treasury Department and Chairman of the Assets and Liabilities Committee (1998–2000). In November 2000, he took the position of Investment Team Manager at Allianz SA, and in 2002 was appointed Deputy Director of the Financial Investments Office at PZU SA. Piotr Broda continued his career with the PZU Group as Director of the Debt and Derivative Instruments Office and Vice President of the Management Board of PZU Asset Management SA (2008–2011) and Vice President of the Management Board of PZU TFI SA (2009–2013). For over four years (2013–2017), he served as Member of the Management Board of TFI BGK SA, and since July 2018 – as the CFO of Electro-Mobility Poland SA. He has long-standing experience as a member of supervisory boards, having served in that capacity in 2002–2004 at PZU Asset Management SA and PZU NFI Management SA, in 2005–2006 at Lentex SA, and in 2006–24007 at Jago SA. He has authored a number of publications concerned with finance as an expert cooperating with the Sobieski Institute.

Piotr Broda has submitted a statement to the effect that he meets the independence criteria stipulated under Art. 129 of the Polish Act on Statutory Auditors, Audit Firms, and Public Oversight dated May 11th 2017 and under Commission Recommendation 2005/162/EC of February 15th 2005.

## Andrzej Gonet

Member of the Supervisory Board

Andrzej Gonet graduated with honours from the Faculty of Drilling, Oil and Gas of the AGH University of Science and Technology in Kraków in 1975. He was then employed at the Faculty and in 1980 he defended with honours his doctoral thesis. In 1989, he was awarded a post-doctoral degree (doctor habilitatus) in science. In 1998, he was awarded professorship and is now employed as a full professor at the AGH University of Science and Technology. He has completed several post-graduate programmes run by the AGH University of Science and Technology, Jagiellonian University and Polish

Academy of Sciences, as well as a course for candidates to supervisory boards of state-owned companies. He was a member of the Supervisory Boards of ZUN Sp. z o. o. of Krosno (2000–2002) and PNiG Sp z o. o. of Kraków (2011–2013). Andrzej Gonet has authored or co-authored over 300 publications, 260 unpublished research papers, 29 approved and submitted patents and 8 licences. He is a certified environmental impact assessment expert of the Kraków Province Governor, expert of the Polish Association of Oil and Gas Industry Engineers and Technicians, and has extensive professional experience gained in Poland and abroad. He has been a consultant and reviewer of many scientific papers and research projects. He is a member of the Drilling and Borehole Mining Section of the Mining Committee of the Polish Academy of Sciences. Throughout his professional career he has held various positions, including head of the Drilling Department, Deputy Director of the Institute of Drilling, Oil and Gas, two terms of office as Vice-Dean and Dean of the Faculty of Drilling, Oil and Gas of the AGH University of Science and Technology, which position he has held for the third term.

In addition, Andrzej Gonet was a co-founder of the PWSZ Krosno State College, where he has served as Vice-Rector and Rector.

### Mieczysław Kawecki

Member of the Supervisory Board

Mieczysław Kawecki is a graduate of the AGH University of Science and Technology in Kraków, Master of Science in Engineering, principal field of study: well operation. He completed post-graduate studies in underground gas storage, and graduated in Environment Protection in Economy from the AGH University of Science and Technology in Kraków. Mieczysław Kawecki is a licensed mine operations manager and Grade I Mining Director. He started his professional career in 1976 at Sanocki Zakład Górnictwa Nafty i Gazu, working at the Wańkowa crude oil extraction facility. In 1984, he was appointed manager of a new crude oil and natural gas extraction facility in Lublin, and in 1986 he became manager of the Wielopole crude oil extraction facility. From 1991 to 2017, he worked as manager of the Strachocina Underground Gas Storage Facility. Since 2017, Mieczysław Kawecki has been managing the Underground Gas Storage Department of PGNiG's Sanok Branch. He is President of the Management Board of the Sanok Branch of the Polish Association of Oil and Gas Industry Engineers and Technicians (SITPNiG). In 1990–1992, he was a member of the Works Council at Sanocki Zakład Górnictwa Nafty i Gazu and a delegate to the General Assembly of Delegates of PGNiG Warszawa. He was a member of the Works Council of PGNiG Warszawa of the 6th and 7th terms of office from 1994 until it was transformed into a company. Until 1998, he was a member of the consulting group at PGNiG. From 2003 to 2005, Mieczysław Kawecki served as Chairman of the KADRA Trade Union at the Sanok Branch, and member of the Union Coordination Committee. He was first member and then Secretary of the Supervisory Board of PGNiG in 2005–2014.

### Stanisław Sieradzki

Member of the Supervisory Board

Stanisław Sieradzki completed studies in stratigraphic and exploratory geology at the University of Wrocław. He also completed post-graduate studies in oil and gas engineering at the AGH University of Science and Technology in Kraków. Stanisław Sieradzki has worked for PGNiG since 1986, first as independent geologist, then specialist geologist in the Operational Geology Department, and later as Head of the Deposit Appraisal and Documentation Department at PGNiG's Sanok Branch. Upon establishment of the Geology and Hydrocarbon Production Unit, he was appointed Head of the Project Design Centre in Sanok. Currently, Mr Sieradzki holds the position of Deputy Head of the Project Design Department in Jasło, Sanok office. His work to date has focused chiefly on crude oil and natural gas exploration. Stanisław Sieradzki has received a number of qualifications, including a licence from the Minister of the Environment to perform, supervise and manage category 1 geological work in: exploration for and appraisal of crude oil and natural deposits; he is also a qualified senior technical supervisor of geological operations and mining geologist at facilities extracting mineral deposits through boreholes, licensed by the President of the State Mining Authority. He is also a certified internal management system auditor.

### Grzegorz Tchorek

Member of the Supervisory Board

Grzegorz Tchorek graduated from the Faculty of Management of the University of Warsaw. In 2007, he defended his doctoral thesis and started working as an associate professor at the Faculty of Management of the University of Warsaw and as an adviser at the National Bank of Poland (from 2009). As an expert, he currently focuses on evaluating competitiveness of countries and businesses, global supply chains, and development of a low-emission environment in Poland. He conducts research projects in the fields of electromobility, gas mobility, shared mobility, and hydrogen technologies.

Grzegorz Tchorek has submitted a statement to the effect that he meets the independence criteria stipulated under Art. 129 of the Polish Act on Statutory Auditors, Audit Firms, and Public Oversight dated May 11th 2017 and under Commission Recommendation 2005/162/EC of February 15th 2005.

In 2018, there were no changes in the composition of the PGNiG Supervisory Board.

# Compliance policy

The formal basis for introduction of the compliance function at the Company is its Compliance Programme. From among the various available solutions, the Company has adopted the one assuming that:

- Compliance is an special element of PGNiG's risk management, which is clearly demonstrated by implementation of the compliance function as part of the non-compliance risk management system;
- The Management Board appoints a Compliance Officer, responsible for coordination and information;
- Taking into consideration the wide scope of the Company's activities, each area at risk of non-compliance was assigned a non-compliance risk area manager (leader);
- Ultimately, responsibility for non-compliance risk management and performance of duties arising from the compliance programme lies with the risk owner (acting with the relevant non-compliance risk area manager, as applicable).

The Compliance Programme provides for regular obligations, such as periodic reporting on compliance standards, compliance risks (and their assessment in terms of materiality/consequences and probability of occurrence), and risk response (risk management method and cost of response). Moreover, the programme imposes certain permanent obligations, which consist mainly in monitoring changes in compliance standards and reporting material risks.

Every employee, partner or stakeholder can report suspected misconduct or abuse through the 'compliance line' established under the programme.

Ethics is the cornerstone of an effective compliance risk management system, and a system of identification and prevention of any breaches in this area, which is why in order to consolidate and standardise the principles of ethics applicable at the PGNiG Group.

In 2018, a Compliance Policy was implemented across the Group. The Policy sets out:

- the rules and standards of conduct applicable at the PGNiG Group, as well as the behaviour and ethical values expected from employees;
- remits of the respective bodies responsible for managing ethics and compliance at the PGNiG Group;
- the manner of coordination and exchange of information on any breaches of applicable laws, customary market norms, industry standards, good market practice, or standards of ethical conduct at the PGNiG Group;
- responsibilities of the PGNiG Group companies in the management of ethics and compliance risks.

## Competition law

The Company has in place an antitrust and regulatory procedure, which every employee is obliged to follow. A violation of antitrust law may result in serious consequences for the Company, and in some cases may involve liability on the part of persons managing the Company (particularly in the case of entering into cartel agreements or other antitrust agreements, failure to perform the antitrust authority's decisions, or absence of an obligatory notice of intended concentration, i.e. merger or acquisition).

## Sector regulations – REMIT

Regulation on Energy Market Integrity and Transparency (REMIT) entered into force on December 28th 2011. The regulation is binding in its entirety and directly applicable in all Member States, i.e. it does not require implementation into a Member State's legislation, and applies not only to Member States, but to all entities concerned. REMIT provides for an obligation of public disclosure of inside information. Additional requirements that came into force upon adoption by the European Commission of the so-called implementing acts include an obligation to register as a market participant in a register maintained by the national regulatory authority, an obligation to disclose information on transactions and orders to trade (transaction reporting), as well as disclosure of fundamental data.

## Financial markets regulations

As a share issuer listed on the stock exchange PGNiG is obliged to comply with the disclosure obligations under Polish Laws: the Commercial Companies Code, the Public Offering Act, the Act on Trading in Financial Instruments, the Accountancy Act and the Regulation on current and periodic information, as well as EU laws: the Market Abuse Regulation and the Transparency Directive.

Regulation on Energy Market Integrity and Transparency (REMIT) - Regulation (EU) No. 1227/2011 of the European Parliament and of the Council of October 25th 2011 on wholesale energy market integrity and transparency (REMIT), which is binding on all participants of the electricity and natural gas wholesale markets.

Market Abuse Regulation (MAR) - Regulation (EU) No 596/2014 of European Parliament and of the council of 16 April 2014 on market abuse (market abuse regulation).

### The Company and the PGNiG Group

have adopted a procedure for complying with the disclosure duties of a public company, which every employee is required to follow.

# Corporate Governance

See also: www.en.pgnig.pl/pgnig/corporate-governance

The PGNiG Group takes care to comply with corporate governance standards. The Group is honest and fair to all of its shareholders, treats them all on equal terms and makes every effort to establish and maintain the best possible relations between PGNiG's investors and governing bodies.

## General Meeting

See also: www.en.pgnig.pl/pgnig/corporate-governance/general-meeting

See also: www.en.pgnig.pl/pgnig/corporate-governance/articles-of-association

The General Meeting is PGNiG's supreme governing body, through which shareholders exercise their corporate rights, including examination and approval of the Directors' Report, and adoption of decisions on the amount, form and payment date of dividends. The General Meeting grants its vote of approval to members of the other governing bodies of PGNiG, appoints members of the Supervisory Board and makes decisions concerning the Company's assets.

## Supervisory Board

The Supervisory Board exercises ongoing supervision of the PGNIG's activities in all areas of its operations, and presents its opinions on all matters submitted by the Management Board for consideration to the General Meeting, in accordance with the Rules of Procedure for the Supervisory Board. It is composed of five to nine members appointed by the General Meeting for a joint three-year term. One Supervisory Board member should meet the independence criteria specified in the Articles of Association. The State Treasury has the right to appoint and remove one member of the Supervisory Board, as long as it remains a shareholder of PGNiG. On a Supervisory Board composed of up to six members, two of them are elected by PGNiG employees. Where the Supervisory Board comprises seven to nine members, there are three members elected in this manner.

## Management Board

The Management Board is an executive body managing the affairs of PGNiG and representing it in all matters in and out of court. The powers and responsibilities of the Management Board involve management of all of the Company's affairs, other than those which the law or the Articles of Association reserve for the General Meeting or the Supervisory Board. The Management Board is composed of two to seven members. The number of Management Board members is determined by the Supervisory Board. Management Board members are appointed for a joint term of three years. The Management Board operates in accordance with applicable laws and regulations, in particular the Commercial Companies Code, as well as the provisions of the Company's Articles of Association and the Rules of Procedure for the Management Board.

## Audit Committee

See also: www.en.pgnig.pl/pgnig/corporate-governance/audit-comitte

The Audit Committee operates within the Supervisory Board as a standing committee, advising the Supervisory Board on matters for which the Board is responsible. Audit Committee is composed of at least three Supervisory Board members, including at least one member independent from PGNiG or any entity significantly affiliated with PGNiG and appointed by the General Meeting pursuant to PGNiG's Articles of Association. Such a person must be competent in accounting and finance matters. Members of the Audit Committee are appointed by the Supervisory Board.

## Appointment and removal of Management Board members

Pursuant to the Articles of Association, individual members of the Management Board or the entire Management Board are appointed and removed by the Supervisory Board. A member of the Management Board is appointed following a recruitment and selection procedure carried out pursuant to applicable provisions of the Articles of Association and in compliance with the requirements for candidates laid down in Art. 22 of the Act of December 16th 2016 on State Property Management (Journal of Laws of 2016, item 2259, as amended). The procedure does not apply to Management Board members elected by employees.

As long as the State Treasury holds Issuer shares and the Issuer's annual average headcount exceeds 500, the Supervisory Board appoints to the Management Board one person elected by the employees, to serve for the Management Board's term of office. A person is considered a candidate to the Management Board elected by the employees if, during the election, 50% of valid votes plus one were cast in favour of that person, with the reservation that the election results are binding on the Supervisory Board if at least 50% of the Company's employees participated in the election.

Management Board members are appointed for a joint term of three years. A member of the Management Board may resign from their position by delivering a notice to that effect to the Company, represented by another Management Board member or commercial proxy, with copies to the Chairman of the Supervisory Board and the minister competent for matters pertaining to energy. The resignation must be submitted in writing, or will otherwise be ineffective towards the Company.

The Management Board member elected by the employees may also be removed upon a written request submitted by at least 15% of the Company's employees. The Supervisory Board orders the voting and its results are binding on the Supervisory Board if at least 50% of the Issuer's employees participate in the ballot, and if the percentage of votes cast in favour of the removal is not lower than the majority required for the election of a member of the Management Board by the employees.

## Information for shareholders concerning General Meetings

A shareholder or shareholders representing at least five percent of the share capital may request that certain matters be placed on the agenda of the General Meeting. Any such request should be sent to the Company in the Polish language, in writing, or in electronic form to the following email address: wz@pgnig.pl. The request should contain grounds or a draft resolution concerning the proposed agenda item and should be submitted to the Company's Management Board not later than 21 days before the scheduled date of the General Meeting. The shareholder or shareholders should prove that they are entitled to exercise this right by submitting relevant documents in writing.

Any shareholder or shareholders representing at least five percent of the Company's share capital may, before the date of the General Meeting, submit to the Company draft resolutions concerning items which have been or are to be placed on the General Meeting's agenda, in a written or electronic form to the email address: wz@pgnig.pl. Any such draft resolutions should be in the Polish language, in the form of a Word file. The shareholders should prove eligibility to exercise this right by submitting relevant documents in writing.

During the Company's General Meeting, each shareholder may submit draft resolutions for the items on the agenda. Such draft resolutions should be in the Polish language.

Shareholders may participate in the General Meeting in person or by proxy. Pursuant to Art. 4121.2 of the Commercial Companies Code, powers of proxy for participation in a General Meeting of a public company and exercise of voting rights must be granted in writing. Powers of proxy should be granted in writing or in electronic form, and should be in the Polish language. They may be sent to the Company prior to the General Meeting in electronic form as a PDF file (scanned document) to the email address: wz@pgnig.pl. While at the General Meeting, all shareholders and proxies should carry valid identity documents.

Given that the Company does not provide for the possibility of participating in the General Meeting by electronic means (including taking the floor at the General Meeting using means of electronic communication) or exercising voting rights by postal ballot or by electronic means, no proxy ballot forms will be published.

Representatives of legal persons should have on them the original or a copy (certified by a notary public) of an excerpt from the relevant register (issued within the last three months), and if their right to represent the legal person does not follow from the relevant register entry – they should have on them written powers of proxy (the original or a copy certified by a notary public) along with the original or a copy (certified by a notary public) of the excerpt from the relevant register which must be valid as at the date of granting the powers of proxy.

See also:
www.gpw.pl/pub/GPW/o-nas/DPSN2016_EN.pdf

The General Meeting may be attended only by persons who are Company shareholders on the record date, i.e. 16 days prior to the General Meeting.

Persons entitled to participate in the General Meeting may obtain the full text of documents to be submitted to the General Meeting, along with draft resolutions and comments of the Management and Supervisory Boards, from the Company's registered office. Such persons may obtain copies of the Directors' Report on the Company's operations and of the Company's financial statements, as well as a copy of the Supervisory Board's report and the auditor's opinion, no later than 15 days prior to the General Meeting, while copies of recommendations and proposals concerning other items of the agenda begin to be distributed a week before the General Meeting.

In accordance with Art. 407.1 of the Commercial Companies Code, the list of shareholders entitled to participate in the General Meeting is available for inspection at the Company's registered office in Warsaw, ul. Marcina Kasprzaka 25, for three weekdays prior to the date of the General Meeting.

Information concerning the General Meeting is available on the Company's website at: www.pgnig.pl in the 'General Meeting – Information for shareholders' section.

## Best Practice

The Code of Best Practice for WSE Listed Companies 2016 was developed by experts representing different groups of capital market participants grouped in the GPW Corporate Governance Consultation Committee. The rules and regulations ought to apply to the issuers of shares admitted to trading on GPW's regulated market. As a listed company, PGNiG abides by the Best Practice principles, whereby PGNiG is required to publish, on an annual basis, A Statement on Compliance with the Corporate Governance Principles. The Statement is available on the Company's website at: www.pgnig.pl in the 'Corporate Governance – Best Practices' section.

## Risk management

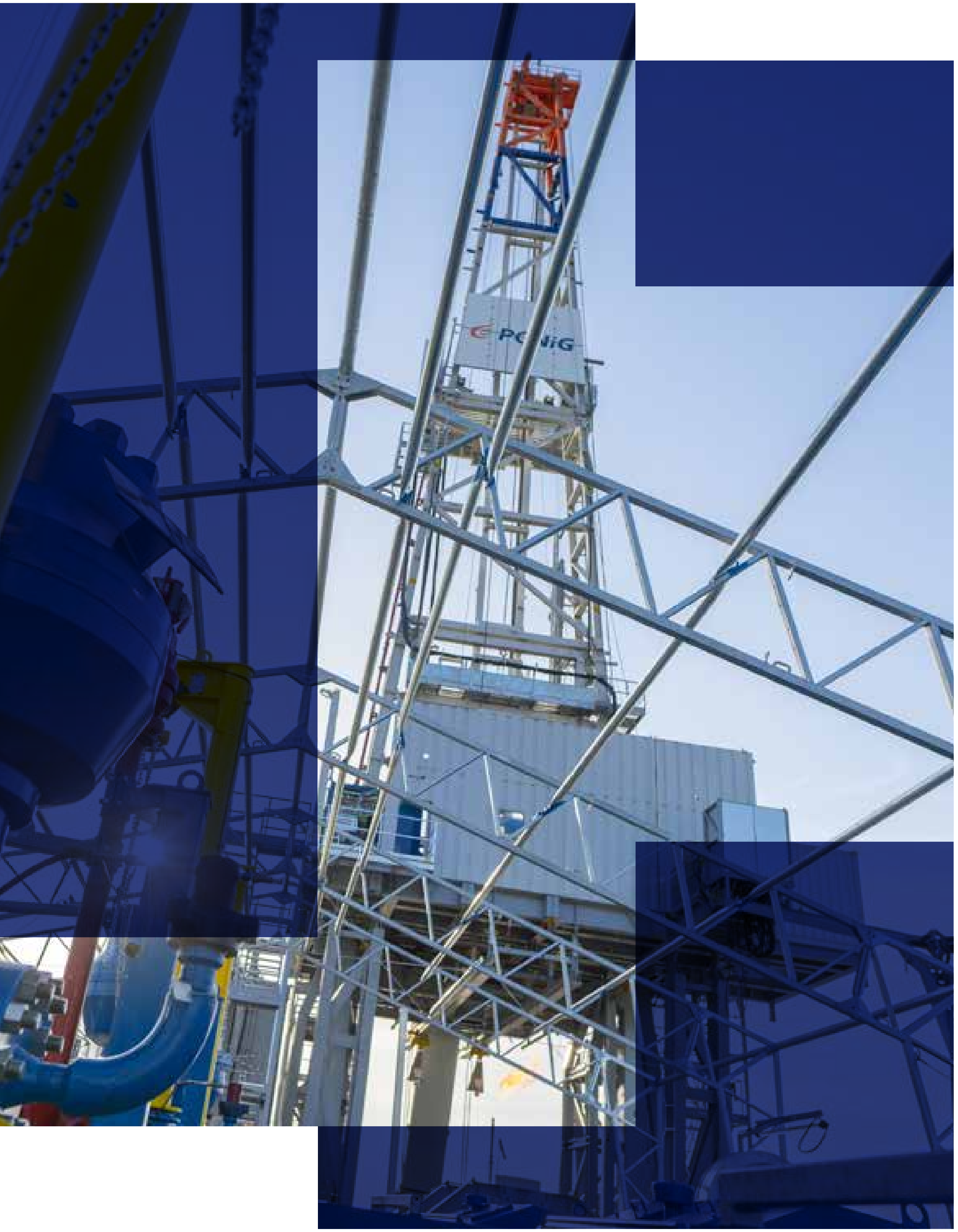
As part of the certified QHSE Management System implemented at PGNiG, conforming to the ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007 standards, all business processes and all risks potentially affecting the performance of individual processes or disrupting the achievement of process deliverables have been identified and assessed. In addition, opportunities for making business processes more effective have been identified. Risks and opportunities for PGNIG processes have been identified and assessed in accordance with the Process Risk Management procedure. The adopted risk assessment methodology is based on the PN-ISO 31000 standard. The rules laid down in the procedure specify the methods of risk and opportunity identification, analysis and assessment, risk and opportunity treatment, risk and opportunity monitoring and control, as well as evaluation of measures taken. Process risk assessment is performed on an ongoing basis, at least once a year.

Risks are analysed by determining the location of the event as well as its causes, effects, and probability of its occurrence, taking into account any existing safeguards minimising the potential impact or probability of occurrence of a given event. In the case of unacceptable risks, action is planned to reduce such risks to acceptable levels. High risk levels are accepted in certain justified cases. The Process Owner is responsible for assessing risks inherent in the process under his/her management and for action taken with respect to high-level risks and opportunities.

See also:
www.en.pgnig.pl/pgnig/corporate-governance/best-practices

Around 680 process risks were identified in 2018, including legal, technical, technology, organisational, and HR risks. Risk level was defined as high for approximately 7% of identified risks, and mitigation measures were defined for 80% of those risks. The remaining high-level risks were accepted in view of exhausted mitigation measures. Those risks are subject to ongoing monitoring to prevent their materialisation.

Several dozen opportunities were also identified in business processes, and relevant actions were planned to enhance process delivery and effects.



# Converters and dictionary

| Conventers | 1 bcm of natural gas | 1m tonnes of crude oil | 1m tonnes of LNG | 1 PJ | 1m boe | 1 TWh |
|---|---|---|---|---|---|---|
| 1 bcm of natural gas | 1 | 0.90 | 0.73 | 38 | 6.45 | 10.972 |
| 1m tonnes of crude oil | 1.113 | 1 | 0.81 | 42.7 | 7.5 – 7.8* | 11.65 |
| 1m tonnes of LNG | 1.38 | 1.23 | 1 | 55 | 8.68 | 14.34 |
| 1 PJ | 0.026 | 0.023 | 0.019 | 1 | 0.17 | 0.28 |
| 1m boe | 0.16 | 0.128 – 0.133* | 0.12 | 6.04 | 1 | 1.70 |
| 1 TWh | 0.091 | 0.086 | 0.07 | 3.6 | 0.59 | 1 |

* The converter is different for crude oil produced in Poland and Norway.

## Dictionary of selected financial and stock terms

**EBITDA** earnings before interest, taxes, depreciation and amortization.
**EBIT** earnings before interest and taxes.
**ROE** return on equity, net profit to equity at end of period.
**ROA** return on assets, net profit to assets at end of period.
**P/E** price/earnings ratio, share price / net earnings per share attributable to owners of the parent.
**P/BV** price/book value ratio, share price / book value per share.
**EV/EBITDA** enterpirses value/ EBITDA, market capitalisation at close of trading on last session day in financial year + net debt at end of financial year / earnings before interests and taxes in financial year + total depreciation and amortisation in financial year
**Dividend per share** dividend for previous financial year / number of shares outstanding.

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