



***Management Board's report on activities  
of PGE Polska Grupa Energetyczna S.A.  
and PGE Capital Group  
for year 2018***

***ended December 31, 2018***

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## **INTERVIEW WITH THE CEO OF PGE POLSKA GRUPA ENERGETYCZNA S.A.**



**Year 2018 abounded in interesting and important events for the energy industry. Which of them were of the most significance to PGE Group ?**

The past year was characterised by transformation. Poland's energy industry began changing, and nothing will stop this evolution. We, energy community of PGE Group, have been seeing the need for wise changes in the energy industry for some time. As the leader in electricity and heat production in Poland, we feel obligated to initiate these changes and stimulate changes in the entire sector. We want to be the leader of Poland's energy transformation.

PGE Group's flagship investments in Opole and Turów are of key importance to us. The construction of these modern and efficient generating units came close to the finish line in 2018. We are also implementing other projects, which are less spectacular but equally important. These include numerous modernisation works that improve production efficiency and reduce the environmental footprint.

Last year was also a time of decisions concerning the entire industry. The capacity market counts among the most significant ones, creating an opportunity for a sustainable transformation of the sector, while retaining energy security. The rising volatility of our surroundings requires flexibility from us, which is why we have made the decision to build two gas units at the Dolna Odra plant, with a capacity of 700 MW each.

**What else has PGE done towards transformation?**

PGE has begun changing, and we have strong arguments for it. Thanks to an RES auction that we won, we began implementing a nearly 100 MW onshore wind farm complex. We are also launching an ambitious offshore programme in the Baltic Sea. Halfway through the next decade, we want to have built the first 1 000 MW, and increase this to 2 500 MW by 2030. This is a gigantic undertaking, which is why we are also looking for partners who will support us in implementing our offshore plan. At the same time, we are waiting for specifics regarding Poland's future energy policy to 2040, the final shape of which will let us decide which of the Group's development paths to take after 2020.

**What is PGE Group doing with regard to the challenges of climate policy, emission reductions and concern for air quality?**

Implementing the investments we have already planned will contribute to avoiding 60 million tonnes of CO<sub>2</sub> emissions in years 2016-2026. These plans are not just about modern conventional energy in Opole and Turów or the already mentioned onshore and offshore wind projects. These are also investments in efficient and low-emission production of heat in cogeneration – in line with the District Heating Strategy, we are planning to increase the share of low-emission fuels in the energy mix of PGE Energia Ciepła, our company responsible for district heating, to 50% by 2030.

The battle for clean air is a very up-to-date and important topic, but its success depends on actions on many fronts. First of all, we are reducing emissions at our industrial power and combined heat-and-power plants through investments and modernisations that bring us closer to more eco-friendly energy operations. In fact, we are already seeing success in this area. Over the past three decades, PGE's power plants reduced the emissions of sulphur by 93%, nitrogen by 61% and particulate by 99%. Given the climate changes taking place and CO<sub>2</sub> emissions, diversification of generation sources towards zero- and low-emission ones and thus also reducing exposure to increases in the prices of emission allowances is a natural challenge. This is a factor that influences our investment decisions. We are actively fighting low emission, what is a strong incentive for development of modern cogeneration based district heating. Many of our branches recorded the highest ever numbers of connections and customers in the city district heating network in 2018. The rising demand for district heating is motivating us for further investments. Building a new CHP, Czechnica, in the town of Siechnice is one of the key projects.

**The Group's largest investments are nearly finished. How are these capital-intensive projects affecting the Group's financial situation?**

As our flagship projects move towards the end of the investment cycle, this will translate into lower investment expenditures for PGE Group. On the other hand, new capacities are providing us with larger revenue from the sale of electricity from highly-efficient sources. I consider the Group's results for 2018 as good in the current market context. I am looking into the future with optimism and I am confident of the positive results of the activities undertaken by the entire Group.

## KEY FINANCIAL RESULTS OF THE PGE CAPITAL GROUP

Key financial data	Unit	Year ended		% change
		December 31, 2018	December 31, 2017	
Sales revenues	PLN million	25 946	23 100	12%
<b>EBIT</b>	<b>PLN million</b>	<b>2 471</b>	<b>3 552</b>	<b>-30%</b>
<b>EBITDA</b>	<b>PLN million</b>	<b>6 364</b>	<b>7 650</b>	<b>-17%</b>
EBITDA margin	%	25%	33%	
<b>Recurring EBITDA (EBITDA adjusted for one-offs)</b>	<b>PLN million</b>	<b>6 701</b>	<b>6 479</b>	<b>3%</b>
Recurring EBITDA margin	%	26%	28%	
<b>Net profit</b>	<b>PLN million</b>	<b>1 511</b>	<b>2 605</b>	<b>-42%</b>
LTC compensations	PLN million	-120	1 284	-
<i>LTC revenues</i>	<i>PLN million</i>	<i>-120</i>	<i>1 215</i>	<i>-</i>
<i>Reversal of LTC write-offs (other operating revenues)</i>	<i>PLN million</i>	<i>0</i>	<i>69</i>	<i>-</i>
<b>Capital expenditures</b>	<b>PLN million</b>	<b>6 856</b>	<b>6 751</b>	<b>2%</b>
Net cash from operating activities	PLN million	5 102	7 934	-36%
Net cash from investing activities	PLN million	-6 465	-7 775	-17%
Net cash from financial activities	PLN million	91	-274	-
Working capital	PLN million	-3 509	524	-
<b>Net debt EBITDA</b>	<b>x</b>	<b>1.51</b>	<b>0.99</b>	
<b>One-offs affecting EBITDA</b>				
LTC compensations	PLN million	-120	1 284	-
Change in reclamation provision	PLN million	-146	-42	248%
Change in actuarial provision	PLN million	-71	-71	0%
<b>Total</b>	<b>PLN million</b>	<b>-337</b>	<b>1 171</b>	<b>-</b>



## 2018 CALENDAR

<b>JANUARY</b>	<i>PGE Ventures invests in first start-ups</i>		
<b>MARCH</b>	<i>Result of tender offer for shares of KOGENERACJA S.A.</i>		
<b>SEPTEMBER</b>	<i>Signing of the loan agreement of PLN 4.1 billion</i>		
<b>OCTOBER</b>	<i>Annex to the Opole project - new commissioning dates for the units 5 and 6</i>	<i>Commissioning of the waste-to-power plant in Rzeszów</i>	
<b>NOVEMBER</b>	<i>Result of the main capacity auction for 2021</i>	<i>Agreement with PGG for hard coal supplies for units 5 and 6 in Opole power plant</i>	<i>Moody's affirms rating</i>
	<i>PGE's initial interest in acquisition of all shares in the company PGE EJ1.</i>	<i>Project KLASTER wins RES auction</i>	
<b>DECEMBER</b>	<i>Result of the main capacity auction for 2022 and 2023</i>	<i>Pressure test of the new boiler in Turów power plant</i>	<i>Invitation for partners to construct off-shore wind farms in Baltic sea</i>

## **1. PGE Capital Group**

### **1.1. Characteristics of activities**

Capital Group of PGE Polska Grupa Energetyczna S.A. ("PGE Capital Group", the "Capital Group", "PGE Group", the "Group") is the largest vertically integrated producer of electricity and heat in Poland. With a mix of own fuel sources, generation assets and distribution network, PGE Group provides a safe and reliable supply of electricity to more than five million households, businesses and institutions.

The parent company of PGE Capital Group is PGE Polska Grupa Energetyczna S.A. (also "PGE S.A.", "PGE", the "Company", the "Issuer").

PGE Group in 2018 organized its activities in five business segments:

#### **CONVENTIONAL GENERATION**

Core business of the segment includes extraction of lignite, production of electricity and heat from conventional sources as well as transmission and distribution of heat.

#### **RENEWABLES**

Core business of the segment includes electricity generation from renewable sources and in pumped-storage power plants.

#### **SUPPLY**

Core business of the segment includes trading of electricity across the country, wholesale trading of electricity on domestic and international market, trading of CO<sub>2</sub> allowances and energy certificates and fuels and provision of services of the Corporate Centre to companies from the PGE Group.

#### **DISTRIBUTION**

Core business of the segment includes supply of electricity to final off-takers through the grid and HV, MV and LV infrastructure.

#### **OTHER OPERATIONS**

Other operations include services, through the subsidiaries, to PGE Group, which includes organisation of capital raising in form of Eurobonds, provision of IT, payroll and HR services and transportation services. Its activities also include subsidiaries formed to prepare and implement a project to build a nuclear power plant, to manage investment funds and to invest in start-ups.

## 1.2. Employment structure in PGE Capital Group

PGE Group is one of the five largest employers in Poland, providing stable jobs to more than 41 000 people across over 200 locations throughout the country. It is thanks to their experience and involvement that we are able to build a values-based organisation that combines social responsibility with business targets. PGE Group is a place for people with passion and motivation to act. The Group's ambitious goal is to become the most efficient energy group in Poland. This also means the introduction of best practices in corporate governance as regards human capital management, support for business decisions and efficiency management as well as the standardisation of support processes.

Table: Employment level.

FTEs	Number of employees		%
	December 31, 2018	December 31, 2017	
<b>Total in PGE Group, including:</b>	<b>41 442</b>	<b>41 231</b>	<b>1%</b>
Conventional Generation	25 098	25 382	-1%
Renewables	529	510	4%
Distribution	10 257	10 200	1%
Supply	2 379	2 219	7%
Other operations	3 179	2 920	9%

## 1.3. Organisational structure

PGE Group as of the end of 2018 consisted of:

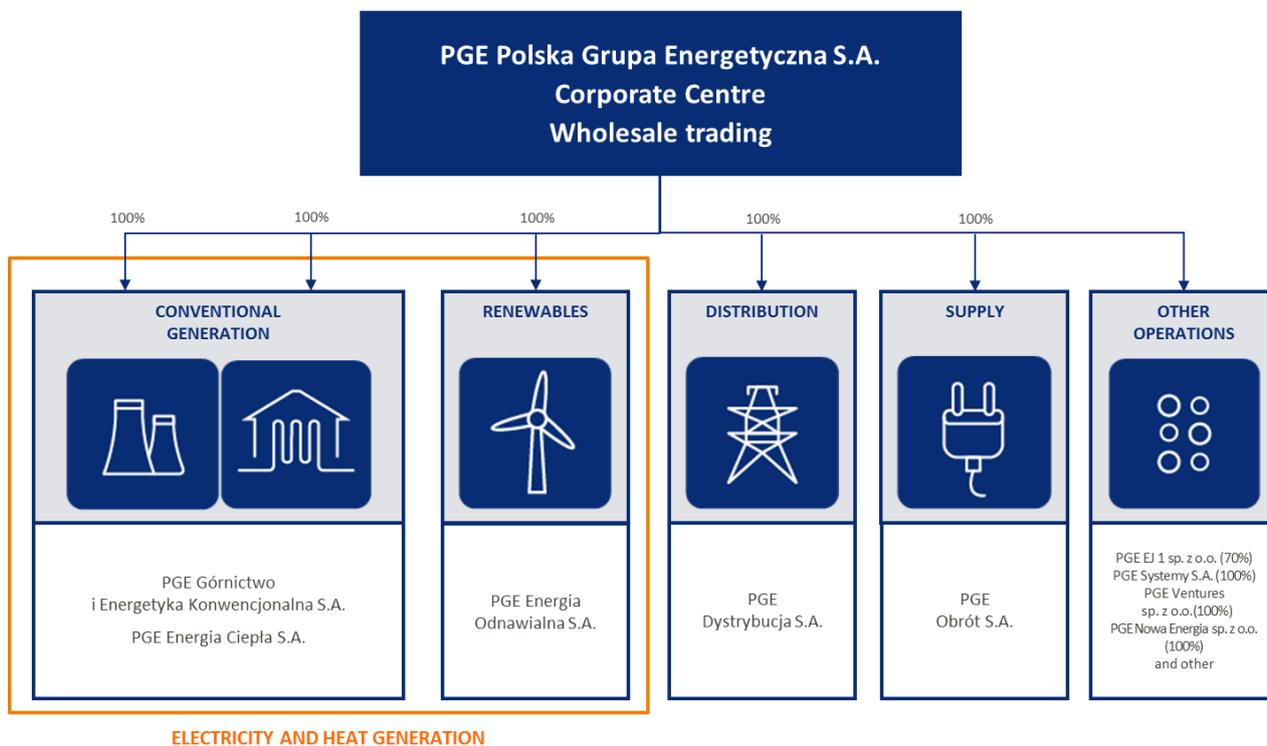
- PGE S.A. - the parent company,
- 57 subsidiaries subject to consolidation,
- 4 associates,
- 1 jointly controlled entity.

All of PGE Group's companies are organised in four main operating segments that constitute business lines, i.e. Conventional Generation, Renewables, Distribution, Supply, as well as other operations.

Given its size, internal organisational changes and acquisitions, PGE Group is in the process of streamlining its structures and integration. The following diagram illustrates the Group's structure. A full composition of PGE Group, divided into segments as well as direct and indirect consolidated subsidiaries, is presented in note 1.3 to the Consolidated Financial Statements.

Diagram: Structure of PGE Capital Group\*.

## PGE Capital Group organisational structure\*

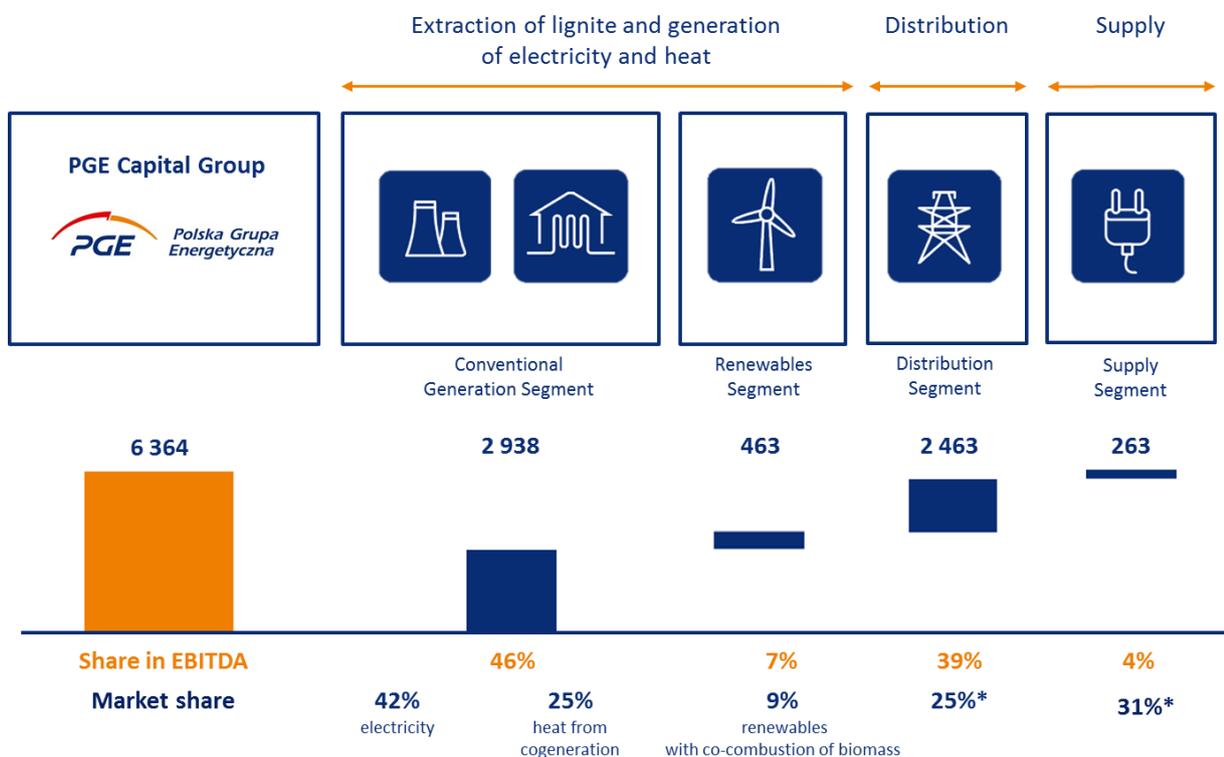


\*Simplified structure – includes key entities.

In January 2019, PGE completed the integration process for its acquired district heating assets. Six combined heat-and-power plants previously owned by PGE Górnictwo i Energetyka Konwencjonalna ("PGE GiEK") were transferred to PGE Energia Ciepła S.A. ("PGE EC"), which had already owned eight CHPs and the Rybnik power plant. PGE EC is the entity integrating PGE Group's district heating activities and the leader of this process, having after consolidation and with subsidiaries an approx. 25% share in domestic production of heat in cogeneration. Heating assets consolidation is an element of PGE's consistently implemented District Heating Strategy, announced in December 2017, which introduces a new business line – District Heating from January 2019.

### 1.4. Business model

PGE Group is the largest vertically integrated producer and supplier of electricity and the largest producer of district heating in Poland. The Group's activities span the entire value chain: from lignite mining at own mines, through generation of electricity and heat, to distribution and sales.



\* Estimated data concerning sales to end off-takers and distribution.

PGE Group's generating assets account for approx. 43% of electricity output (including Conventional Generation segment approx. 42%) in Poland and use a variety of sources. Conventional installations are based on lignite from PGE Group's own mines as well as hard coal, gas and biomass from external suppliers. Renewable sources are also used in electricity generation: wind energy, hydro energy and solar energy.

Using its over 290 000 km of power lines, PGE Group distributes electricity to customers over an area encompassing approx. 40% of Poland's territory.

With a combination of own lignite resources, generation assets and distribution grids, PGE provides safe and reliable supplies of electricity to more than five million customers throughout Poland, including households, businesses and institutions. This means that it supplies a third of electricity consumers in Poland. PGE is also the leader in district heating production.

### 1.5. Competitive advantages of the Group

Assets	Strong financials	Strategy
<ul style="list-style-type: none"> <li>▪ <b>Leader in installed capacity and electricity production</b></li> <li>▪ <b>Focused on baseload generation, absolute cost leader in Poland - approx. 60% of power generated from own fuel (2 lignite mines)</b></li> <li>▪ <b>Highly diversified and youngest generation fleet in Poland</b></li> <li>▪ <b>Regulated assets operator (Dolna Odra Power Plant and pumped-storage plants)</b></li> <li>▪ <b>Installed 550 MW in wind</b></li> <li>▪ <b>2019 Regulatory Asset Base in distribution: PLN 16.8 billion</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Stable and diversified revenues</b></li> <li>▪ <b>EBITDA margin at 25% in 2018 - highest among Polish power utilities</b></li> <li>▪ <b>Over 40% of EBITDA from regulated activities (distribution &amp; co-generation)</b></li> <li>▪ <b>Strong investment grade credit ratings with stable outlook (Fitch and Moody's)</b></li> <li>▪ <b>Healthy leverage – net debt/LTM EBITDA at 1.5x</b></li> <li>▪ <b>Financing secured for financial and operational activities</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Strategy for 2016-2020 aimed at keeping the leading position on Polish market</b></li> <li>▪ <b>Developing modern conventional electricity</b></li> <li>▪ <b>Developing new technologies and business models</b></li> <li>▪ <b>Strategic investment options</b></li> <li>▪ <b>Reduction of controllable costs and optimization of maintenance costs</b></li> <li>▪ <b>Flexibility and efficiency of generation units</b></li> <li>▪ <b>District heating strategy</b></li> </ul>

## 2. PGE Group's strategy and its implementation

### 2.1. Mission, vision and overall objectives

In accordance with the strategy adopted in September 2016, PGE's mission is to ensure security and growth based on reliability of supply, technical excellence, modern services and partnership relationships.

Diagram: PGE Group's mission.



### PGE Group's new mission

We provide security and growth based on reliability of supply, technical excellence, modern services and partnership relationships

PGE Group's future vision is pursued in four areas:



Increase its value for shareholders and the key role in ensuring Poland's energy security are the overall objectives which PGE Group is pursuing.

### VALUES OF PGE GROUP

PGE Group's strategy is being implemented in accordance with values Partnership, Growth, Responsibility and principles in everyday work included in the Code of Ethics of PGE Group. PGE Group is a responsible organization, aware of its impact on the environment, thus in its operations focuses on reducing impact on natural environment, operating based on ethical principles and involvement in activities for the benefit of local communities.

## **2.2. Realisation of strategic goals**

### **LEADER IN ELECTRICITY GENERATION, ACTIVELY SEEKING DEVELOPMENT OPPORTUNITIES**

PGE Group's aspiration is maintaining after 2020 the leading position in the area of electricity generation with more than 40% share in the domestic market. PGE Group is continuing its flagship investments in Opole and Turów and has a flexible approach to plans for developing new generating capacities, opting to take the most economically and technically beneficial decisions on a case by case basis, taking into account the specific location and technological conditions of each asset. The company carries out modernisations of conventional plants and combined heat-and-power plants in an optimal scope so that they are adapted to new industrial emission standards BAT. The implementation of a capacity market, being a mechanism enhancing the national energy security, will have a positive impact on the economic effectiveness of modernisation projects.

The purchase of EDF Polska's assets was finalised on November 13, 2017. With this agreement, PGE Group's installed electricity capacities increased by 25% to 16.23 GWe at the end of 2018. PGE Group strengthened its top position in the power segment and became the largest supplier of heat in the country, with a 18% share of the Polish district heating market. PGE Group's District Heating Strategy was unveiled on December 14, 2017, which highlights our ambitions in this area, inter alia:

- increase of local market share to two-thirds for district heating networks managed by PGE Energia Ciepła,
- construction of 1 000 MWe of new cogeneration capacities,
- increase of low-emission fuel's share in fuel mix to 50%.

PGE Group intends to strengthen its position in the renewables segment, with a target of approx. 25% of national renewables output by 2030. Having succeeded in RES auctions in November 2018, project Klaster, which involves the development of three wind farms with capacity totalling 97.17 MW, together with ancillary infrastructure and grid connections, will be implemented by mid-2020. On December 5, 2018, PGE Group invited over a dozen potential business partners for talks regarding the construction and operation of wind farms in the Baltic Sea with capacity totalling up to 2 545 MW as the first stage of PGE Group's offshore programme. A decision on the investment's environmental conditions is expected to be received in 2019. According to the schedule, electricity should start flowing from PGE Group's first offshore wind farm around 2025, while commercial operation is expected to begin in 2026.

Increased involvement in the photovoltaics and dispersed sources segment will contribute towards achieving an ambitious renewables target. PGE Group is implementing a number of pilot projects in micro-grids and energy clusters, which are to help in creating optimal business model.

To retain its leading position in the generation segment over the long term, PGE Group has three strategic options, thanks to which it can make an optimal choice in the context of future energy and climate policies:

- construction of offshore wind farms with capacity totalling up to 2 545 MW,
- construction of Poland's first nuclear power plant, once a model ensuring the investment's economic feasibility is developed and taking into account Group's investment capabilities,
- modern coal-based energy, including the development of new lignite deposits, in the event that climate policy is substantially relaxed.

Key indicators	Implementation 2017-2018	Progress and target	How we intend to achieve the target by 2020 and in later years								
<b>LEADER IN GENERATION, ACTIVELY TAKING ADVANTAGE OF GROWTH OPPORTUNITIES</b>											
Share of the electricity generation market	<ul style="list-style-type: none"> <li>Continuation of construction of 2 units at Opole power plant.</li> <li>Continuation of construction of new unit at Turów power plant.</li> <li>Launch of preparatory phase for construction of new gas-fired unit at Dolna Odra plant.</li> <li>Modernisation of units 1-3 in Turów power plant.</li> <li>Acquisition of EDF's assets, directly contributing to growth in PGE's market share .</li> </ul>	<table border="1"> <tr> <th>Year</th> <th>Share (%)</th> </tr> <tr> <td>2017</td> <td>37%</td> </tr> <tr> <td>2018</td> <td>43%</td> </tr> <tr> <td>2020 target</td> <td>&gt;40%</td> </tr> </table>	Year	Share (%)	2017	37%	2018	43%	2020 target	>40%	<ul style="list-style-type: none"> <li>Optimal adaptation of power plants and CHP plants to new industrial emission standards BAT.</li> <li>Optimisation of generation portfolio in terms of participating in the capacity market.</li> <li>Construction of 1 000 MWe of new cogeneration capacities by 2030.</li> <li>Development of gas-fired units.</li> <li>Use of strategic options for long-term development of capacities: <ul style="list-style-type: none"> <li>construction of offshore wind farms,</li> <li>construction of the first Polish nuclear power plant,</li> <li>development of modern coal-based energy generation.</li> </ul> </li> </ul>
Year	Share (%)										
2017	37%										
2018	43%										
2020 target	>40%										
Share of the renewables market	<ul style="list-style-type: none"> <li>Preparations for the first offshore projects in terms of the future auction, including environmental surveys, wind surveys,</li> <li>negotiations with potential strategic partners.</li> <li>Success of project "Klaster" (97.17 MW) in RES auction.</li> </ul>	<table border="1"> <tr> <th>Year</th> <th>Share (%)</th> </tr> <tr> <td>2017</td> <td>8.7%</td> </tr> <tr> <td>2018</td> <td>8.7%</td> </tr> <tr> <td>2030 target</td> <td>25%</td> </tr> </table>	Year	Share (%)	2017	8.7%	2018	8.7%	2030 target	25%	<ul style="list-style-type: none"> <li>The launch of a 1 045 MWe offshore wind farm half-way through the next decade, with potential expansion by 1 500 MWe by the end of the next decade.</li> <li>Increase of low-emission fuel's share in district heating segment to 50%.</li> <li>Increase of our exposure to PV and the diffuse source segment.</li> </ul>
Year	Share (%)										
2017	8.7%										
2018	8.7%										
2030 target	25%										

## RELIABLE AND ACTIVE UTILITY AND SERVICE SUPPLIER

Currently on-going investments in the distribution segment are intended to increase the reliability of supply and reduce SAIDI and SAIFI by 56% compared to 2015 and the average connection time by 40%. The achievement of these quality targets will be supported by, among others, targeted modernisation of infrastructure, the development of electricity quality monitoring systems, intelligent grid metering and automation as well as the construction of a digital transmission system.

In the retail area, PGE Group is planning to focus on strengthening relations with clients through gaining more knowledge about their needs. In response to identified expectations, PGE Group will expand its offering by, for example, adding new product and services that are complementary to electricity as well as through the development of new sales and communication channels. Lumi – PGE Group's new brand – debuted on the market in 2018 with an attractive electricity sales offering for the residents of Warsaw. PGE's online store and mobile information hubs were also launched. Green energy and anti-smog offerings are also interesting for customers.

Attaining the status of a reliable, credible and modern supplier will allow PGE Group to retain a low client migration score in the mass segment. Thanks to its activities in 2018, PGE Obrót S.A. received the Customer-Friendly Company Emblem and was selected as a Trustworthy Brand for businesses.

**Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018**

Key indicators	Implementation 2017-2018	Progress and target	How we intend to achieve the target by 2020 and in later years								
<b>RELIABLE AND ACTIVE UTILITY AND SERVICE SUPPLIER</b>											
SAIDI (minutes)	<ul style="list-style-type: none"> <li>Systematic improvement in quality indicators in recent years was distorted by sudden weather events.</li> <li>Launch of Telephone Reporting Centre, which is active throughout PGE Dystrybucja's entire area, handling the emergency line 991.</li> <li>Launch of innovative system for detecting and isolating short-circuit incidents on overhead MV lines.</li> <li>Targeted modernisation of grid infrastructure.</li> <li>Implementation of innovative metering system at Białystok branch and Łódź branch.</li> </ul>	<table border="1"> <tr> <th>Year</th> <th>SAIDI (minutes)</th> </tr> <tr> <td>2017</td> <td>557</td> </tr> <tr> <td>2018</td> <td>299</td> </tr> <tr> <td>2020 target</td> <td>196</td> </tr> </table>	Year	SAIDI (minutes)	2017	557	2018	299	2020 target	196	<ul style="list-style-type: none"> <li>Further improvement in supply reliability and reduction in SAIDI and SAIFI by 56% between 2015 and 2020.</li> <li>Development of integrated and automated system for managing LV distribution network infrastructure cooperating with diffuse energy sources and accumulators installed at prosumer installations.</li> <li>Construction of system for automatic reconfiguration of LV grid to improve the quality of distribution services in normal and emergency work mode.</li> <li>Development of autonomous mechanisms for reducing the effects of LV line failures.</li> <li>Increase in earthing rate of the network.</li> </ul>
Year	SAIDI (minutes)										
2017	557										
2018	299										
2020 target	196										
SAIFI (minutes per customer)	<ul style="list-style-type: none"> <li>Construction of harmonised connection system.</li> <li>Connection process simplified and shortened to 7 months.</li> <li>Adaptation of distribution grid and company organisation for work with new sources – 12 500 micro-installations connected in 2018 alone.</li> </ul>	<table border="1"> <tr> <th>Year</th> <th>SAIFI (minutes per customer)</th> </tr> <tr> <td>2017</td> <td>5.48</td> </tr> <tr> <td>2018</td> <td>3.92</td> </tr> <tr> <td>2020 target</td> <td>2.11</td> </tr> </table>	Year	SAIFI (minutes per customer)	2017	5.48	2018	3.92	2020 target	2.11	<ul style="list-style-type: none"> <li>Optimisation of process of connecting to the distribution network by enhancing online communication, increasing the functionalities of IT systems and streamlining procedures.</li> </ul>
Year	SAIFI (minutes per customer)										
2017	5.48										
2018	3.92										
2020 target	2.11										
New customer connection time (days)	<ul style="list-style-type: none"> <li>Continuous monitoring of customer satisfaction indicators and reliability assessments.</li> <li>Expanded product offering for retail sales.</li> <li>Implementation of electronic invoicing and remote contract execution.</li> <li>New retail sales brand – Lumi.</li> <li>Launch of new sales and customer service channels (PGE e-shop, mobile electronic customer service office, chatbot).</li> </ul>	<table border="1"> <tr> <th>Year</th> <th>New customer connection time (days)</th> </tr> <tr> <td>2017</td> <td>215</td> </tr> <tr> <td>2018</td> <td>211</td> </tr> <tr> <td>2020 target</td> <td>180</td> </tr> </table>	Year	New customer connection time (days)	2017	215	2018	211	2020 target	180	<ul style="list-style-type: none"> <li>Development of product offering and communication channels using digital platforms and intelligent devices.</li> <li>Consistent enhancement of long-term relations with clients.</li> <li>Retention of low client migration rate in mass segment.</li> </ul>
Year	New customer connection time (days)										
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2017	75.9										
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2020 target	79.6										

**POLAND'S MOST EFFICIENT AND FLEXIBLE ENERGY GROUP**

PGE Group's cost and operational efficiency is one of key preconditions for accomplishing the other strategic goals. On the other hand, flexibility is key to achieving the ability to respond quickly to opportunities arising in PGE Group's environment.

Initiatives related to reducing PGE Group's controlled costs and the development and maintenance of efficient generation capacities, adapted to a new market model, will help to maintain the net debt to EBITDA ratio at a level guaranteeing implementation of PGE Group's ambitious investment programme.

A harmonised approach to planning expenditures thanks to a newly-implemented Asset Management Policy, which takes into account asset significance, among other things, will make it possible to keep asset maintenance costs and modernisation and replacement expenditures at a level guaranteeing satisfactory profitability of operations as well as maintenance of appropriate availability and security of electricity supplies.

Additional annual EBITDA contributed by the District Heating Strategy is estimated at approx. PLN 1 billion until 2030, driven by a 10% reduction in repair costs (by 2023, compared to 2017) and higher asset management efficiency.

Key indicators	Implementation 2017-2018	Progress and target	How we intend to achieve the target by 2020 and in later years
<b>POLAND'S MOST EFFICIENT AND FLEXIBLE ENERGY GROUP</b>			
Net debt / EBITDA	<ul style="list-style-type: none"> <li>■ PGE Group's initiatives aimed at reducing controllable costs and the construction and maintenance of generation capacities.</li> <li>■ Granting of capacity contracts for 2021-2023</li> <li>■ Standardisation and optimisation of support functions at PGE Group level.</li> <li>■ Commencement of implementation of integrated management system for production assets.</li> <li>■ Update of the Human Capital Management Strategy.</li> </ul>	<p>The bar chart displays the Net debt / EBITDA ratio for three periods: 2017 with a value of 0.99, 2018 with a value of 1.51, and a 2020 target labeled 'Maintaining the rating'. The 2020 target bar is taller than the 2018 bar, indicating a goal to maintain the current 1.51 ratio.</p>	<ul style="list-style-type: none"> <li>■ Additional EBITDA result from implementation of District Heating Strategy estimated at approx. PLN 1 billion in 2030.</li> <li>■ Increase in asset management efficiency.</li> <li>■ Retention of competitiveness of lignite mining.</li> <li>■ Use of funding programmes for investments, modernisations and research and development programmes.</li> </ul>

## LEADER IN DEVELOPMENT OF NEW BUSINESS MODELS AND OPERATING SEGMENTS

The PGE Group's strategy places particular emphasis on the development of new business models and operating segments in order to diversify revenues structure and to increase EBITDA from new operations. This will be possible through PGE Group's involvement in cooperating in the area of development and commercialisation of new technologies with credible partners having competences allowing to obtain synergies and competitive advantages. New technological solutions that are of interest to PGE Group include energy warehouses, electromobility, including car sharing, construction of charging stations, diffuse energy sources and intelligent solutions for buildings and cities and ICT technologies supporting implementation of new business models and improving currently pursued processes.

Involvement in the development and commercialisation of new technologies will allow PGE Group to introduce to the market a modern and comprehensive offering for clients, covering, among other things, photovoltaics, electromobility, microgrids, intelligent home solutions (Smart Energy project), natural gas and broad package of electricity-related services.

PGE Group intends to build up its brand of a leader on the energy efficiency market. New ESCO (Energy Saving Company) activities will provide clients with benefits such as reduced energy consumption costs, supply continuity and improved image. This will enable PGE Group to develop long-term beneficial relations with customers. A wide scope of initiatives to improve the effectiveness of energy infrastructure and buildings belonging to the Group will also be implemented.

PGE Group's activities in the area of equity investments in innovative start-ups are carried out through PGE Ventures sp. z o.o. – a specialised CVC fund, which intends to invest up to PLN 100 million in the most innovative projects by 2025. Moreover, using funding available from programmes operated by the Polish Development Fund (PFR) and the National Centre for Research and Development (NCBiR), PGE Ventures sp. z o.o. is co-creating external venture-type investment funds with total capitalisation amounting to PLN 140 million. PGE Group's activities related to start-up incubation and acceleration at the earliest growth stage are conducted by PGE Nowa Energia sp. z o.o., which intends to spend up to PLN 1.5 million annually on acceleration activities. Some of these projects are being implemented in cooperation with business lines, which co-finance certain stages of projects.

## STRATEGIC OPTIONS OF PGE GROUP AFTER 2020

Retaining the top position on the electricity generation market in the long term necessitates market and regulatory analyses, continuous development and innovativeness. PGE Group has a programme of technologically diverse investment projects that address the three strategic options embedded in PGE Group's strategy for 2016-2020. Selection of the Group's development path will largely depend on the national and foreign surroundings. The final shape of Poland's Energy Policy 2040, the EU's climate and energy policy, the power system's needs as well as market model and the cost to finance specific undertakings – all of this will have impact on the investment decisions concerning specific projects.

Main strategic options after 2020 are:

- Construction of off-shore wind farms,
- Construction of first Polish nuclear power plant,
- Development of modern coal-fired generation connected with new lignite deposits, mainly Złoczew deposit.

## ACTIVITIES RELATED TO OFFSHORE WIND ENERGY

### Offshore programme – background and work status

PGE Group's Offshore Programme was launched in 2009. In 2012, SPVs Baltica 1, 2 and 3 received permits to build and use artificial islands for installing offshore wind farms with total maximum capacity of 3.5 GW. Works that are currently underway are focusing on the Baltica 2 and 3 sites – jointly called the "Baltica" project. The Baltica 1 area is being considered for a prospective location for another stage of the Programme. In 2014, Baltica 3 signed a connection agreement with PSE S.A. for 1 045 MW. In January 2019, Baltica 2 received technical conditions for connecting 1 498 MW.

Activities in Project Baltica's technical area are mainly focusing on:

- conducting works intended to secure a decision on environmental conditions – an application for issue of such a decision was submitted to the Regional Directorate for Environmental Protection in Gdańsk in December 2017,
- conducting wind speed measurements using floating lidar and obtaining wind speed measurements from other reference sources,
- designing an optimal distribution of turbines and preparing preliminary productivity analyses,
- developing a concept for capacity offtake and securing land for connection paths and the end station,
- preparing preliminary geotechnical surveys intended to examine the geological and geotechnical conditions at Project Baltica's sites in order to select optimal types of foundation. Characteristics of offshore projects and development supporting solutions are presented on different forums, including works of parliamentary groups.

### Business partnership

In order to minimise project risk and maximise the learning curve, PGE intends to implement the Programme's first stage, i.e. Project Baltica with capacity of up to 2.5 GW, with an experienced industry partner. In December 2018, PGE's Management Board agreed to begin a process intended to bring in an industry partner for this Project and send out transaction documents as an invitation to participate in this process. In January 2019, 13 entities with extensive experience in building and operating offshore wind farms expressed interest in purchasing a 50% stake in Baltica 2 and 3. The process to select a partner is expected to be completed by the end of 2019.

### Offshore wind energy and Poland's energy policy

Offshore wind farms feature prominently in Poland's draft energy policy sent out for consultations on November 23, 2018 and the draft National plan for energy and climate for 2021-2030, published on January 19, 2019. According to the draft energy policy, offshore wind capacities are to reach 4.6 GW by 2030, 6.1 GW by 2035 and 10.3 GW by 2040. The development of offshore energy will contribute to implementing objectives that are significant from the viewpoint of Poland energy policy: it is cost-effective, contributes to meeting the EU's renewables targets, lowers exposure to CO<sub>2</sub> emission costs and additionally has a positive impact on economic growth.

### Regulatory environment

The Act of February 20, 2015 on renewable energy sources makes it possible to seek government support for offshore wind farms that have a connection agreement and a decision on environmental conditions as part of an auction system. Offshore wind farms compete in one "basket" with other technologies that have similar energy generation costs: hydro, biogas and geothermal plants. However, due to a potential lack of a sufficient number of projects to ensure competitiveness in this technological "basket," the drafts of Poland's energy policy and national plan for energy and climate include the option to introduce a support mechanism dedicated for offshore wind farms.

### Social acceptance

Given that PGE Group's offshore wind farms' location is beyond territorial waters, i.e. more than 12 nautical miles from the coast (over 22 km), no significant risk of a lack of social acceptance for the Offshore Programme is identified. It should be emphasised that the experience of western European countries shows that if other users of maritime areas are respected, especially the fishing community, then the development of offshore energy is accompanied by a positive social attitude, mainly thanks to development of the local value chain and new job creation. These experiences should also prove true in Poland's case, given the existing industrial and ship-building infrastructure in our country, which provides components to build offshore wind farms.

## ACTIVITIES RELATED TO NUCLEAR ENERGY

### Business partnership

PGE EJ1 sp. z o.o. ("PGE EJ1") is PGE Group's entity directly responsible for preparing the investment process, conducting environmental and location surveys, obtaining all of the necessary decisions for the construction of the first Polish nuclear power plant, and implementing the investment. In the future, PGE EJ1 will serve as the nuclear plant's operator. PGE EJ1 was established in 2010. In 2014, a shareholder agreement was signed, pursuant to which Enea S.A., KGHM Polska Miedź S.A. and TAURON Polska Energia S.A. (the "Shareholders") each purchased from PGE a 10% stake in PGE EJ1 (30% in total). The shareholder agreement requires the parties to jointly finance, proportionately to the stakes held, activities related to implementing the investment. In the fourth quarter of 2018, PGE's Management Board expressed preliminary interest in purchasing all of PGE EJ1's shares from the remaining Shareholders. PGE aims to carry out operational and cost restructuring at PGE EJ1 and integrate it within PGE Group, which would ensure that the Group's intellectual and organisational potential in the area of nuclear power is utilised in an optimal manner. All of the Shareholders have confirmed their preliminary interest in selling their stakes in PGE EJ1. The execution of transaction will be possible after the preparation of valuation of PGE EJ1 by the independent adviser and after obtaining corporate approvals from all concerned parties.

### Site characterisation and environmental surveys

PGE EJ1 is currently conducting location and environmental surveys at two potential sites in the Pomeranian Voivodeship – "Lubiatowo-Kopalino" in the Choczewo municipality and "Żarnowiec" in the Gniewino and Krokowa municipalities. The surveys focus on activities necessary to prepare a report on the undertaking's environmental impact and a site report.

Selecting an appropriate location is one of the key aspects in ensuring nuclear safety and the efficient and reliable operation of a nuclear power plant. The results of these works are necessary in order to develop solutions that ensure the power plant's safe operation and minimise its impact on the natural environment and the everyday life of local residents.

### Social acceptance

At the same time, with a view toward ensuring social acceptance for the project to build the first Polish nuclear power plant, PGE Group is conducting activities aiming to maintain a high level of community support at the planned nuclear plant sites and to deliver knowledge about nuclear power. In 2018, works were continued within the Site Municipality Development Support Programme intended to reinforce partner relations with the local communities and authorities of the municipalities by providing support to initiatives that are of significance to the residents and development of the region.

### Prospects for the project implementation and financing capabilities

Decisions with regard to the continuation of the Programme will be made based on decisions by the Minister of Energy concerning a role of nuclear energy in Polish fuel mix, mode for the procurement of nuclear power plant technology, investment financing model and an updated Programme for Poland's Nuclear Power.

### Compensations from WorleyParsons

WorleyParsons initiated a lawsuit for payment of PLN 59 million for due remuneration, according to the claimant, and return of an amount unduly collected, according to the claimant, by PGE EJ1 from a bank guarantee, and subsequently expanded its claim to PLN 104 million (i.e. by PLN 45 million). On March 31, 2018, the company filed a response to WorleyParsons' expanded claim. PGE Group does not accept the claim and regards its possible admission by the court as unlikely.

## ACTIVITIES RELATED TO DEVELOPMENT OF ZŁOCZEW DEPOSIT

Development of the Złoczew deposit can only be implemented once the conditions specified in the Programme for the lignite mining sector in Poland, adopted by the Council of Ministers in 2018, are met. These conditions especially include:

- a directional decision being made regarding the role of lignite in the national energy mix in the long term,
- development and implementation of solutions ensuring the economic feasibility of new deposit projects (these solutions must be approved by the EU),
- securing funding for this undertaking.

Implementation of the strategic options will thus largely depend on the national and international regulatory environment. The final shape of Poland's energy policy, the EU's climate and energy policy, permissible emission from installations fuelled by fossil fuels, the needs of the power system or the market model and the cost to finance specific undertakings – all of this will have an impact on the investment decision regarding implementation of specific investments.

### Development of Złoczew deposit – background and status

Work on the project "Obtaining a concession for mining coal from the Złoczew deposit" began in 2008. In 2008-2018, a range of studies and documentation were prepared, providing information on the deposit, including its structure, quality parameters, hydrogeology, technological conditions related to coal mining. Works aimed at obtaining a concession were conducted in parallel. These include:

- activities intended to obtain a decision on environmental conditions for the "Złoczew deposit development" undertaking,
- works related to adapting spatial development conditions and directions for all four municipalities within which the Złoczew deposit is located,
- application to the Minister of the Environment for granting of a concession.

Due to appeals being lodged against the environmental decision and spatial development studies, the concession award date is unknown at this point. Securing the concession without including the investment in these studies and without a legally binding environmental decision is not possible.

### Current development concept for Złoczew deposit

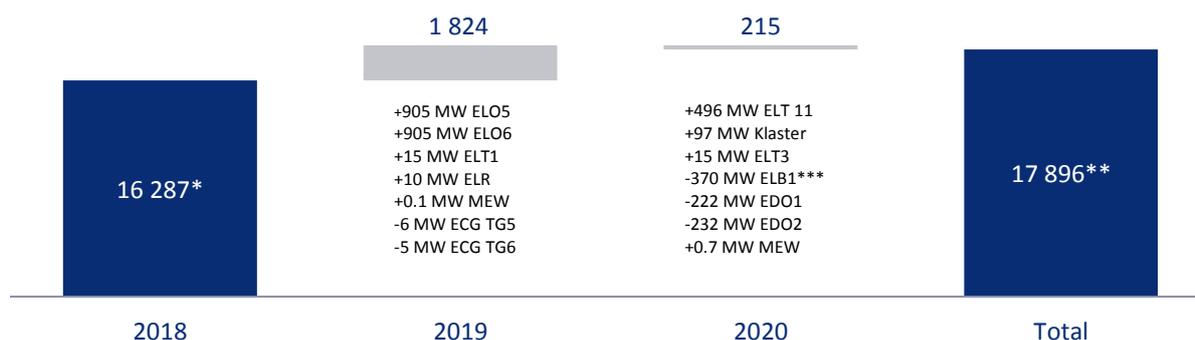
Works intended to determine the preferred approach to coal development at the Złoczew deposit were also conducted in recent years. The base scenario for Złoczew deposit development currently is to build the Złoczew mine and maximally use the existing infrastructure at the Bełchatów power plant. This concept would necessitate the transport of coal from the Złoczew open-pit mine to the Bełchatów plant. At the current stage of conceptual work, two variants are being contemplated – conveyor belts and rail transport.

## 2.3. Prospects for the development

	KEY DIRECTIONS OF CHANGES	POTENTIAL IMPACT ON PGE
<b>MACROECONOMIC ENVIRONMENT - GLOBAL</b>	<ul style="list-style-type: none"> <li>■ Economic downturn symptoms in eurozone: <ul style="list-style-type: none"> <li>■ European Commission's GDP forecast for 2019: 1.3%,</li> <li>■ Severe decline in industrial production (-4.2% y/y in December 2018 ),</li> <li>■ Industrial PMI: 50.5 (in February 2019: 49.2).</li> </ul> </li> <li>■ Central bank interest rates at most of the developed economies are very low or negative. If a recession comes, the lack of tools for further monetary stimulus might be a problem.</li> <li>■ The risk of introducing barriers in international trade may translate into lower global GDP growth.</li> </ul>	<ul style="list-style-type: none"> <li>■ Decreased consumption might reduce exports from Poland, translating into lower demand for electricity in the country, and thus lower electricity production in conventional units.</li> <li>■ A slowdown in the eurozone might mean lower demand for fossil fuels and a decline in fuel prices for PGE Group.</li> <li>■ A potential economic downturn might also mean lower CO2 emissions, which might limit the prices for emission allowances in EU ETS, thus lower costs of redemption of CO2 allowances in PGE Group.</li> </ul>
<b>MACROECONOMIC ENVIRONMENT - POLAND</b>	<ul style="list-style-type: none"> <li>■ Real GDP growth in 2018 at 5.1% (preliminary estimate from Central Statistical Office of Poland).</li> <li>■ The key growth drivers were domestic demand and investments. However, private consumption growth and net exports declined towards the end of the year.</li> <li>■ In subsequent years, forecasts from the European Commission and the National Bank of Poland see a considerable decline in GDP growth: <ul style="list-style-type: none"> <li>■ 2019: 3.5-3.6%,</li> <li>■ 2020: 3.2-3.4%.</li> </ul> </li> <li>■ Numerous warning signs include: <ul style="list-style-type: none"> <li>■ Decline in industrial PMI in December 2018 below 50 points to 47.6 points, i.e. into recession area and the lowest level since 2013,</li> <li>■ Lower economic growth in the eurozone,</li> <li>■ Expected slowdown in growth of public investment and use of EU funding.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ GDP growth levels as forecasted should translate into further - though slower - domestic growth in demand for energy (depending on weather conditions) and should have positive impact on load factor of conventional generating assets and on distribution and sales volumes.</li> <li>■ Given the new efficient generation capacities that are expected to enter the power system, the lower growth in electricity demand might translate into lower electricity prices on the wholesale market.</li> <li>■ Growth in indicators for construction and assembly works prices and cost pressure in the specialised construction segment might result in growth in actual investment expenditures for realisation of planned investment program or higher costs of third-party services. Lack of qualified employees may result in delays in pursuing investment and repair projects.</li> </ul>
<b>TRENDS ON FUEL MARKETS</b>	<ul style="list-style-type: none"> <li>■ Hard coal in global markets in a slight down trend due to high inventory and expected economic slowdown.</li> <li>■ On-going investments in the hard coal mining area in the country should end up increasing this commodity's output.</li> <li>■ At the same time, as new highly-efficient generation units are commissioned, the use of this fuel for electricity production purposes is expected to decrease.</li> <li>■ Systematic growth in demand for natural gas in Poland and in the region is expected due to new investments in gas-fired units and highly-efficient cogeneration units as well as a gradual shift in Germany's fuel mix.</li> <li>■ Concurrent expansion of capacity for natural gas supply to Poland (expansion of LNG terminal, Baltic Pipe project, infrastructure projects by LNG exporters).</li> <li>■ Act of December 28, 2018 regulates electricity prices for final off-takers.</li> <li>■ Increasing trading capacity on interconnectors with Germany following completion of grid investments</li> </ul>	<ul style="list-style-type: none"> <li>■ Lower risk of domestic coal non-availability for PGE Group's production purposes and potential decline in price over the long term.</li> <li>■ New potential natural gas supply will make it possible to develop the Dolna Odra power plant using CCGT technology.</li> <li>■ Higher capacity for natural gas imports will make room for investments in high-efficiency gas-based cogeneration in the new support system.</li> <li>■ Profitability of Supply segment depending on level of compensations available due to regulated prices and pressure on liquidity until the payment of first compensations payment.</li> <li>■ Higher trade availability of potentially cheaper electricity may attribute to the growth of electricity import to Poland, thus limiting increase of wholesale electricity prices and load factors of the Group's units.</li> <li>■ Capacity market is a Chance for gradual transformation of capacity structure in NPS directing towards construction of highly-efficient generation units working in base-load, flexible peak units and reduction of units not meeting the environmental requirements.</li> </ul>

	KEY DIRECTIONS OF CHANGES	POTENTIAL IMPACT ON PGE
DEVELOPMENT OF NEW TECHNOLOGIES	<ul style="list-style-type: none"> <li>Implementation of capacity market allowing for securing of revenues for construction and modernisation projects of generation units with limited possibilities for support for existing coal-fired units from year 2025.</li> </ul>	
	<ul style="list-style-type: none"> <li>We are observing rising competitiveness of wind (including offshore) and PV technologies, as confirmed by prices obtained in RES auctions.</li> <li>In certain countries, full-scale new energy storage technologies are dynamically developing, providing regulatory services, among others.</li> <li>Systematic development of prosumer energy and dynamic growth in number of micro-installations.</li> <li>Development of electromobility.</li> </ul>	<ul style="list-style-type: none"> <li>Increasing the competitiveness of new renewable energy sources has impact on their development and reducing the load factors for older conventional units.</li> <li>Declining costs of offshore technologies make offshore one of the options for PGE Group's development.</li> <li>The commercialisation of energy storage on an industrial scale will make it possible to better use renewables, supplementing conventional capacities in the system balancing role.</li> <li>Along with the development of prosumer energy, grid operations at local level are becoming more volatile, which necessitates investments in infrastructure (connections, modernisations), while limiting the electricity distribution volumes. In Conventional Generation higher demand for highly flexible generation units in order to balance dispersed sources.</li> <li>The development of electromobility will drive demand for electricity, especially at night, but it requires investments in the development of grid infrastructure and charging stations, as well as charging management system. It is also possible to use cars' batteries as energy storage for RES production.</li> <li>PGE Group's use of new technologies might create development opportunities in new roles and business areas.</li> </ul>

### PROSPECTS FOR GROWTH OF ACHIEVABLE CAPACITIES IN YEARS 2019-2020 (MW GROSS)



\* including 10 886 MW gross achievable capacities in conventional units of PGE GiEK S.A. and 3 212 MW in Acquired assets (Rybnik power plant, EC Gdańsk, EC Gdynia, EC Kraków, EC Wrocław, EC Czechnica, EC Zawidawie, EC Zielona Góra, EC Toruń).

\*\* including 12 387 MW gross achievable capacities in conventional units of PGE GiEK S.A. and 3 222 MW in Acquired assets.

\*\*\* Unit no. 1 in Bełchatów power plant will be decommissioned as from June 1, 2019.

Explanation:

ELB – Bełchatów power plant  
EDO – Dolna Odra power plant  
ELO – Opole power plant

ELT – Turów power plant  
ELR – Rybnik power plant  
Project Klaster – wind farms Karnice II, Starza, Rybice

ECG – Gorzów CHP  
MEW – Small hydro power plants

Chart presenting the growth of capacity illustrates commissioning and decommissioning of capacity of the PGE Capital Group. The schedules may change. Data do not include potential capacity growth related to investments in renewables installations that are dependent on the results of future RES auctions.

## **EVALUATION OF INVESTMENT CAPACITIES**

On-going and future investments are and will be financed from funds generated by the core activity of the PGE Group, funds obtained from the issue of bonds, both on domestic and international markets, and from other types of external financing, e.g. bank loans. Financial results achieved by the PGE Group and available credit limits secure sufficient resources to achieve its mid-term investment goals, including capital investments. Scale of development of the Group's efficiency, particularly lowering the operating expenses, will be significant for the ability to finance the investment program in the long term.

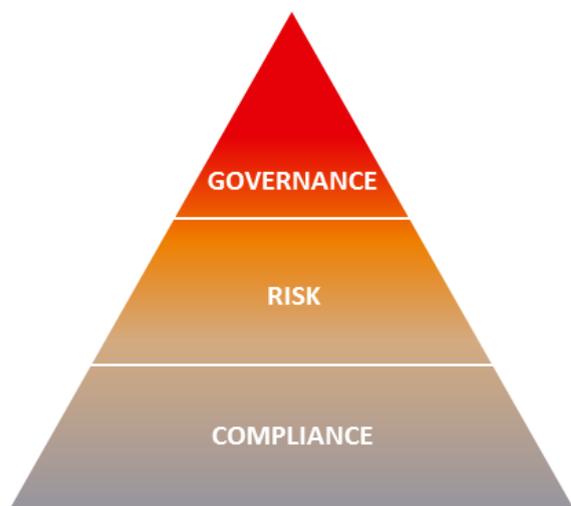
For selected undertakings, PGE Group will also consider financing in project finance formula.

### 3. Risks in the Group's operations

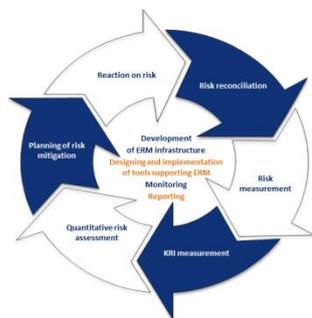
#### 3.1. Risk management

PGE S.A., as the Corporate Centre managing the Group, creates and implements integrated risk management architecture at PGE Group. In particular, it shapes PGE Group's risk management policies, standards and practices, designs and develops internal IT tools to support these processes, specifies global risk appetite and adequate limits as well as monitors these.

PGE Capital Group companies, as well as other entities from the electrical and power sector, are exposed to a number of risks and threats resulting from the specific operating activities and operating in specific market and regulatory environment.



In PGE Group risk management process is pursued based on the GRC (Governance - Risk - Compliance) model. It allows adaptation and integration of each of the operational areas at all levels of management. Having established a top-level Risk Committee, which reports directly to the Management Board, supervision over the effectiveness of risk management in the Group is ensured. Function definition within corporate risk management allows an independent assessment of particular risks, their impact on PGE Group and limiting and controlling major risks using the capital exposed to risk concept via dedicated instruments. Formation of a separate compliance function within the Group guarantees that PGE Group's activities are in line with legal conditions and ensures observance of the adopted internal standards.



The PGE Capital Group has consequently developed a comprehensive risk management system. We measure and assess risks in the key companies of the Group. Mechanism allowing identification of areas exposed to risk and risk level measurement methods are constantly verified and developed. Thanks to that, the significant risks concerning various areas of operations are identified and kept within the assumed limits by reducing negative effects of such risks and by taking preventive or corrective measures, in accordance with the presented cycle.

### 3.2. Risk factors and mitigating actions

The main risks and threats of PGE S.A. and the PGE Group are presented below along with their assessment and outlook in the horizon of the next year.

Risk level	 low	 medium	 high	Mitigating actions and main tools used for the management of the risk
Risk outlook	 decrease	 growth	 stable	
<b>Low level</b>	Risk does not pose a threat and may be tolerated,			
<b>Medium level</b>	Risk which needs preparation of the proper reaction based on analysis of costs and benefits,			
<b>High level</b>	Intolerable risk, which needs immediate and active reaction, leading simultaneously to limitation of possible consequences and of probability of occurrence thereof.			
<b>Market and product risks</b> Related to prices and volumes of offered products and services	<b>Prices of electricity and related products</b> – resulting from a lack of certainty with regard to the future levels and volatility of commodity prices relative to open contract positions - this particularly concerns electricity and associated products (property rights, CO2 emission allowances).			<b>Actions:</b> <ul style="list-style-type: none"> <li>■ Using consistent guidance in respect of process organisation in the context of commercial strategy and mid-term planning (strategy for hedging key exposures in the area of electricity and related product trading that correspond to the adopted risk appetite in the mid-term).</li> <li>■ Establishing position hedging levels with consideration given to the results of analysing pricing risk in respect of electricity and related products, VaR-based. Target hedging levels are specified taking into consideration the Group's financial standing, including in particular its strategic objectives.</li> <li>■ Research, monitoring and analysing the electricity and related products markets in order to optimally use generation and selling capacities.</li> <li>■ Acquiring new customers - diversification of channels to reach final off-takers and diversification of target groups by maintaining an extensive product portfolio and adapting offering to market.</li> <li>■ Current clients retention - a diversified portfolio of customer loyalty schemes and client-acquisition activities and special offers dedicated to former clients who moved over to the competitors.</li> <li>■ Care for a high level of customer service by developing employees' competences and building relations with business and retail clients.</li> <li>■ Use of tools to supporting customer relations processes allows the Group better sales planning and organisation of sales.</li> </ul>
	<b>Electricity sales volumes</b> – this risk derives from a lack of certainty with regard to the conditions determining the demand and supply of electricity, directly affecting the volume of market sales by PGE Group.			
	<b>Tariffs (regulated prices)</b> – resulting from the requirement to approve rates for distribution services and electricity and heat prices for particular groups of entities.			

**Management Board's report on activities of PGE Polska Grupa Energetyczna S.A.  
and PGE Capital Group for year 2018**

<b>Property risks</b> Related to development and maintenance of the assets	<b>Failures</b> – connected with the operation and degradation over time of energy equipment and facilities (maintenance and repair work, diagnostics).			<b>Actions :</b> <ul style="list-style-type: none"> <li>■ Active pursuing of a strategy for building up and modernization of the production capacities.</li> <li>■ Performing maintenance repairs in line with the highest sector standards – PGE Group's plants have the lowest breakdown rates in the country</li> <li>■ Diversification of the current structure of the production sources due to energy generation technology.</li> <li>■ Our main generation assets were insured against failure and damage to property .</li> <li>■ Assets are insured based on an analysis of insurance costs, capabilities of insurance markets for particular risks or for particular types of assets, costs related to asset replacement and potential lost revenue</li> <li>■ The reliability of the power supply to the end users has been systematically improved through modernization of the distribution grid.</li> </ul>
	<b>Damage to property</b> – connected with the physical protection of energy equipment and facilities against destructive external factors (including fire, weather phenomena and intentional damage).			
	<b>Investment and development</b> – connected with strategic plans for expanding the generation, distribution and sales potential as well as on-going investments.			
<b>Operational risks</b> Related to pursuing of ongoing economic processes	<b>Electricity and heat production</b> – connected with production planning and impact of the factors that determine production capacities.			<b>Actions :</b> <ul style="list-style-type: none"> <li>■ Optimisation of costs inter alia through monitoring of fuel prices and reserves and securing supply through long-term contracts with suppliers and through price fixing formulas.</li> <li>■ Sales margins are secured by purchasing deficit CO<sub>2</sub> emission allowances</li> <li>■ Optimisation of equipment lifecycles and the availability of key assets.</li> <li>■ Inspections, repairs and modernisation of the existing assets</li> <li>■ PGE's active participation in internship programmes and cooperation with educational institutions in order to secure a pipeline of qualified personnel</li> <li>■ Assessment and training of personnel in order to make optimal use of it within the Group's structures</li> <li>■ Conducting an intensive and effective dialogue in order to avoid escalation of potential disputes with the social partners and to work out the most favourable solutions with regard to employment and employment costs within PGE Capital Group connected therewith.</li> </ul>
	<b>Fuel management</b> – connected with uncertainty regarding the costs, quality, timeliness and volumes of fuel supply (mainly coal) and production raw material as well as the effectiveness of inventory management processes.			
	<b>Human Resources</b> – pertaining to provision of personnel with the relevant experience, competences and ability to perform specific tasks.			
	<b>Social dialogue</b> – connected with a failure in achieving agreement between the Group's management and employees, what could lead to strikes/collective labour disputes.			

**Management Board's report on activities of PGE Polska Grupa Energetyczna S.A.  
and PGE Capital Group for year 2018**

<b>Regulatory and legal risks</b>  Related to compliance with external and internal legal provisions	<b>Legal changes in support systems</b> – connected with uncertainty as to the future shape of the support system for production of certified energy.			<b>Actions:</b> <ul style="list-style-type: none"> <li>▪ Monitoring of the changes being introduced or proposed provides that our operations in key business segments are carried in compliance with the law and that PGE Capital Group has solutions which take into account potential changes in the legal environment</li> <li>▪ Active participation of PGE S.A. as the member of the Polish Electricity Committee that opened its office in Brussels. Through the Committee's operations, the Company actively influences proceeding and shaping of EU law and engages a dialogue with the EU institutions.</li> <li>▪ Adaptation of internal regulations and practices to make sure that the activities are in compliance with the power sector regulations and binding law.</li> <li>▪ Improvement of activities aimed at protecting and improving the state of the environment by implementing technological and organisational solutions ensuring efficient and effective management in this area.</li> </ul>
	<b>Environmental protection</b> – resulting from industry regulations specifying which "environmental" requirements energy installations should meet and what the principles for using the natural environment are. The future environmental regulations and uncertainty concerning their final shape (in particular with regard to the revision of BAT / BREF) may translate into a change in the level of capital expenditures of the PGE Group.			
	<b>Concessions</b> – resulting from the statutory requirement to hold concessions with regard to conducted operations.			
	<b>Discriminatory activities</b> – connected with application by the Group of practices that limit or eliminate competition and infringe on legal regulations or consumer interests.			
	<b>Taxes</b> – related to uncertainty surrounding the future shape of tax regulations and their interpretation.			

**Management Board's report on activities of PGE Polska Grupa Energetyczna S.A.  
and PGE Capital Group for year 2018**

<b>Financial risks</b>  Related to finance management	<b>Credit risk</b> – connected with the counterparty default, partial and/or late payment of receivables or a different type of breach of contractual conditions (for example failure to deliver/collect goods or failure to pay for any associated damages or contractual penalties).			<b>Actions:</b> <ul style="list-style-type: none"> <li>■ Prior to executing a transaction, a counterparty assessment is carried out and forms a base for applying credit limits, that are regularly updated and monitored. Exposures that exceed established limits are hedged in accordance with the Group's credit risk management policy.</li> <li>■ Applying a central financing model, which assumes – as a rule – that external capital is raised by PGE S.A. PGE Group subsidiaries use a variety of intra-group financing sources and liquidity risk is monitored using periodic planning for operating, investing and financing activities</li> <li>■ As regards currency risk and interest rate risk, PGE Group has implemented internal management procedures. PGE Group companies execute derivative transactions involving interest rate- and/or currency-based instruments (IRS, CCIRS) only in order to hedge identified risk exposures.</li> </ul>
	<b>Liquidity risk</b> – connected with the possibility of losing the ability to meet current liabilities and obtaining financing sources for business operations.			
	<b>Interest rate risk</b> – resulting in particular from the negative impact of changes in market interest rates on PGE Group's cash flows generated by floating-rate financial assets and liabilities.			
	<b>Foreign exchange risk</b> – understood in particular as risk that PGE Group's cash flows denominated in currencies other than the functional currency are exposed to due to negative exchange rate movements.			

### 3.3. Strategic risk

PGE Group does not focus exclusively on risks concerning on-going activities. Risks that may have an impact on the Group's functioning in a longer timeframe are also subject to identification, assessment and analysis. Assessment of impact on the Group's objectives, image and business continuity is performed at the top management level. This allows us to prepare for arising challenges and ensure the Group's development in the long term.

Unlike threats to PGE's day-to-day business and results, strategic risks might have an impact on strategy implementation and the future of the entire organisation. Their identification is the key to ensuring PGE Group's sustainability.

Presented below are the key identified strategic risks along with their assessment.

Impact	▼▼	▼	◄	▲	▲▲
	very low	low	medium	High	very high
▲					
▲					
▲					
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In analysing these risks as threats for PGE, the Company tries at the same time to identify any opportunities that such changes might bring about. Countering risks becomes an opportunity for the Group's development if we manage to adapt to a changing world in advance.

## 4. Electricity market in 2018 and regulatory and business environment

### 4.1. Macroeconomic environment

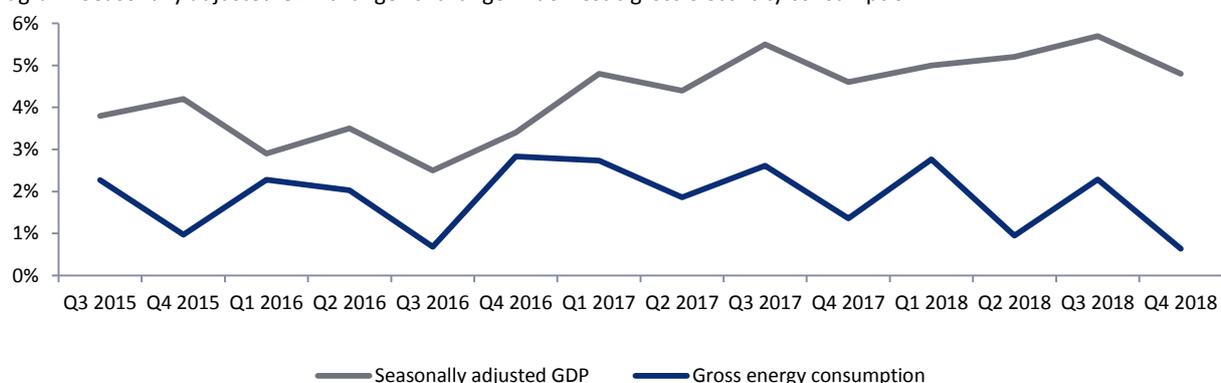
PGE Group's main operating area is Poland, and the domestic macroeconomic backdrop has a substantial impact on Group's results. At the same time, the condition of Poland's economy remains largely tied to the situation across the European Union and in global markets. The Group's financial results are affected by both the situation in specific segments of the economy and the financial markets, which affect the terms of PGE Group's debt financing.

As a rule of thumb, there is a historical correlation between rising electricity demand and economic growth in Poland. Considering PGE Group's position on the Polish power generation market, as well as its substantial share in the electricity sales and distribution market, changes in power and heat demand may have a significant impact on the Group's results.

In 2018, gross electricity consumption went up 1.7 y/y. The increase was higher than in the previous year, when consumption went up 2.1% compared to 2016.

Economic trends in 2018 remained positive in general. According to estimates by Central Statistical Office of Poland, real gross domestic product in the fourth quarter of 2018 was 4.6% y/y.

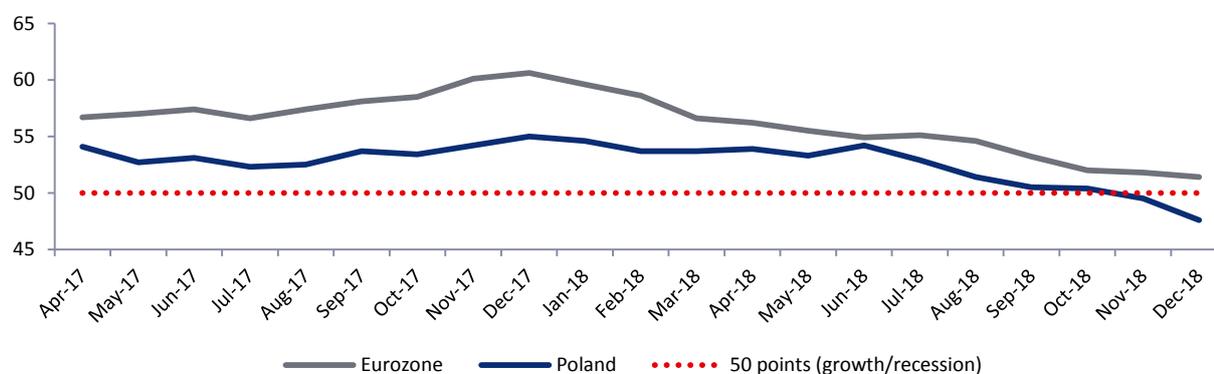
Diagram: Seasonally adjusted GDP change vs. change in domestic gross electricity consumption.



Source: Central Statistical Office of Poland, PSE S.A., estimate by ING Bank Śląski for Q4 2018.

The Purchasing Managers' Index (PMI) for industry reached 52.1 points on average in 2018 (53.6 points on average in 2017), what is a result above 50 points, above which the respondents expect the sector's situation to improve. However in December 2018 PMI declined from the November reading of 49.5 points to 47.6 points, signalling deterioration in the Polish industrial sector. Production volumes and new orders also declined. The number of new export orders and production backlog declined for the fifth month in a row, while employment did not meaningfully change since November. The Eurozone PMI in 2017 averaged 57.4 points, compared to 55.0 points in 2018 (PMI Manufacturing for the Eurozone in December 2018 recorded 51.4 points).

Diagram: Manufacturing PMI in Poland and Eurozone (in points).



Source: Markit Economics

Development in the Polish economy is reflected by inter alia dynamics in overall industrial production. In 2018 it went up by 5.8% y/y, compared to 6.6% in 2017. The change resulted from increase in industrial production by 5.7% y/y in 2018 versus 7.3% in 2017. Production in the whole energy sector increased by 9.0% y/y in 2018 vs 5.5% in 2017. The value of industrial manufacturing depends on volumes of goods produced and prices. PPI in 2018 amounted to 2.1%. CPI reading in 2018 amounted to 1.1% y/y.

## 4.2. Market environment

### ELECTRICITY PRICES – DOMESTIC MARKET

#### Day-ahead market (RDN)

Market/measure	Unit	Q4 2018	Q4 2017	Change y/y	2018	2017	Change y/y
RDN – average price	PLN/MWh	245	165	48%	223	158	41%
RDN – trading volume	TWh	6.74	5.64	20%	23.55	21.24	11%

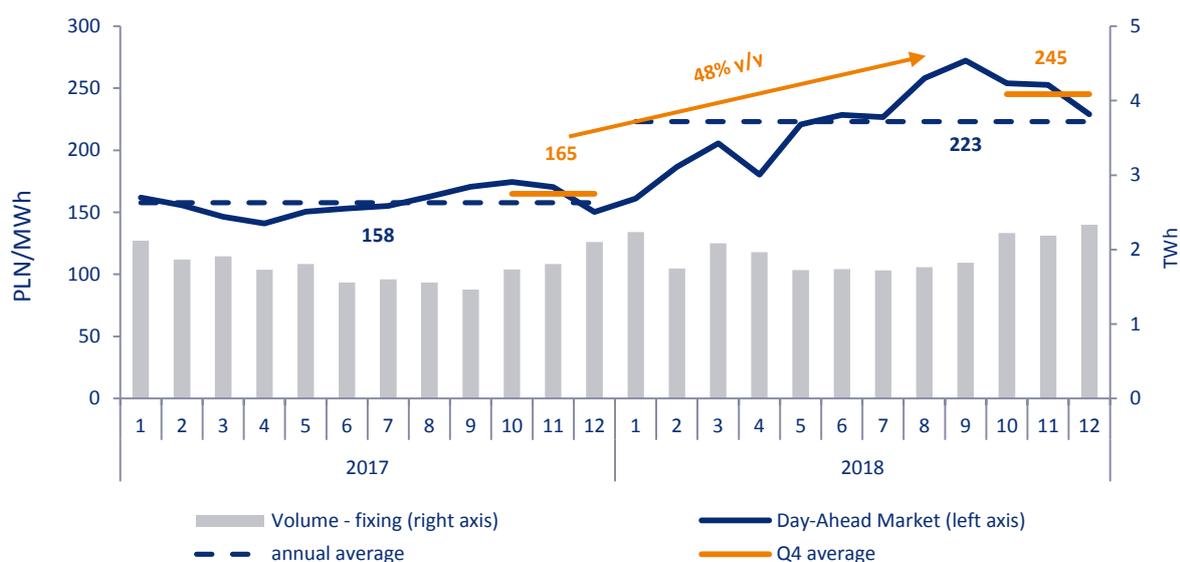
#### Analysis – selected price factors affecting RDN quotations

Factor	Unit	Q4 2018	Q4 2017	Change y/y	2018	2017	Change y/y
CO <sub>2</sub> emission rights	EUR/t	19.66	7.38	166%	16.51	5.97	177%
Polish Energy Industry Coal Index PSCMI1	PLN/GJ	11.22	9.54	18%	10.98	9.26	19%
Wind generation NPS	TWh	3.70	4.63	-20%	11.68	13.86	-16%

In the fourth quarter of 2018 the average energy price on the Day-Ahead Market<sup>1</sup> reached PLN 245/MWh and was 48% higher than the average price (PLN 165/MWh) quoted in analogical period of 2017. The increase in price was due to the situation on related markets: CO<sub>2</sub> emission allowance prices in the fourth quarter of 2018 were by 166% higher than in the same period of base year. Moreover, an increase in coal prices was observed – the average level of the PSCMI1 in the fourth quarter of 2018 reached PLN 11.22/GJ, i.e. 18% higher than in the comparative period (PLN 9.54/GJ) of the previous year. The growth in electricity prices also had to do with weather conditions and a 20% y/y decline in energy supply from wind assets in the National Power System.

In full year 2018, the average price on the day-ahead market was PLN 223/MWh, which is 41% higher than the price recorded in the preceding year (PLN 158/MWh). The increase in price on the day-ahead market was due to cost pressure and the situation on related markets. CO<sub>2</sub> emission allowance prices in 2018 were 177% y/y. The PSCMI1 index in 2018 averaged PLN 10.98/GJ - up by 19% y/y i.e. from PLN 9.26/GJ. Wind-based generation declined 16% y/y cumulatively.

Chart: Monthly prices and price volatility at the day ahead market in 2017–2018 (TGE)\*



\* Average monthly price of RDN index calculated on the base of hourly quotations (fixing), weighted by the trading volume.

<sup>1</sup> Statistic calculated on the basis of fixings data

Forward market

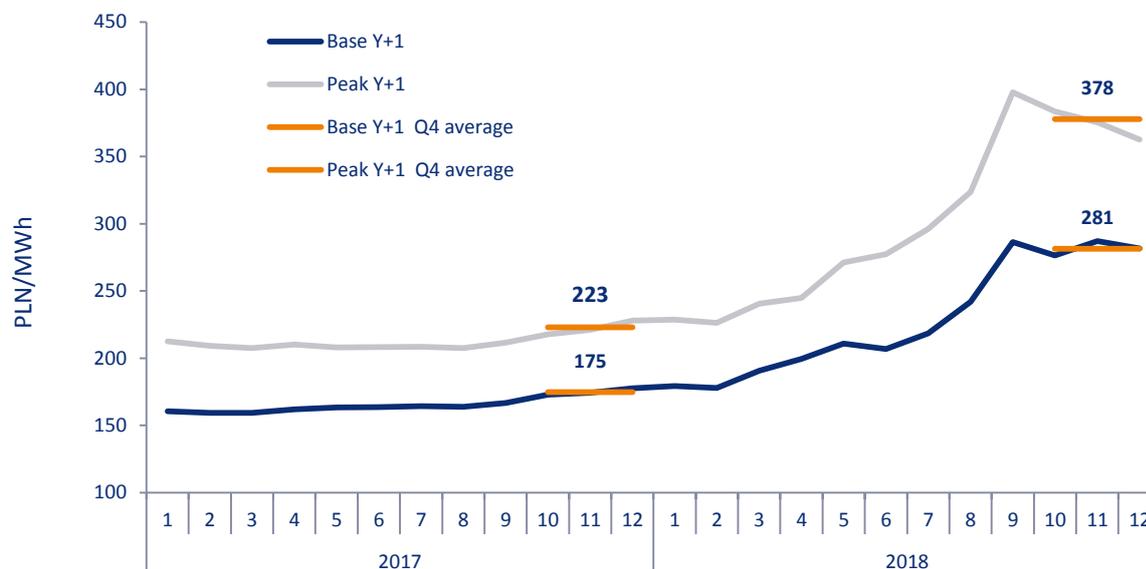
Market/measure	Unit	Q4 2018	Q4 017	Change y/y	2018	2017	Change y/y
BASE Y+1 – average price	PLN/MWh	281	175	61%	243	168	45%
BASE Y+1 – trading volume	TWh	38.70	17.68	119%	125.80	46.33	172%
PEAK5 Y+1 – average price	PLN/MWh	378	223	70%	348	216	61%
PEAK5 Y+1 – trading volume	TWh	5.28	3.08	71%	10.00	6.44	55%

Electricity prices on forward market are shaped by the similar fundamental factors, as the prices on the day ahead market described in the previous paragraph. Observed growth y/y – for the fourth quarter 2018 and full year 2018 – were related to, above all, trends on the related markets: CO<sub>2</sub> emission rights and hard coal.

Revenues from electricity sales are recognized along with the delivery of electricity (not contracting) – growth of forward prices will be visible in the Group's revenues in 2019. Growth of prices results from pressure on variable costs side.

The increased volume on forward market is connected with the amendment of the Energy law, which obliges the energy companies to sell all produced electricity on the commodity exchange or on regulated markets.

Chart: Monthly prices and price volatility on the forward market in 2017–2018 (TGE)\*.



\* Monthly average index level for forward contracts for the next year (Y+1), baseload and peak, calculation based on daily quotations, weighted by the trading volume.

## INTERNATIONAL MARKET

### Wholesale market (comparison of day-ahead markets)

Chart: Comparison of average electricity prices on Polish market and on selected European markets in 2018 (prices in PLN/MWh, average exchange rate EUR/PLN 4.26).

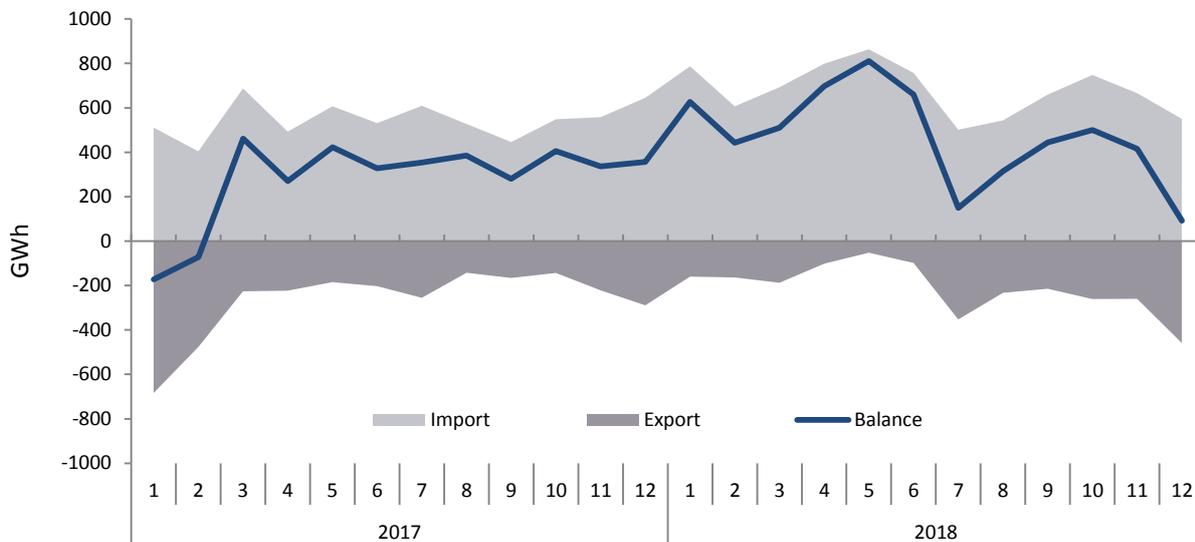


Source: TGE, EEX, EPEX, Nordpool, OTE a.s., PXE.

In the fourth quarter of 2018, growth in wholesale electricity prices in neighbouring countries was in the range of PLN 85-92/MWh (i.e. 61-64% q/q). From this perspective the price growth in Poland by PLN 80/MWh (i.e. by 49%) is in line with the regional trend. The common electricity price growth driver in the region was the situation on related commodity markets: growth in prices on the coal market and the CO<sub>2</sub> emission allowance market. In the fourth quarter of 2018, the average electricity price in Poland was higher than in Sweden (by PLN 21/MWh), Germany (by PLN 16/MWh) and the Czech Republic (by PLN 7/MWh). At the same time, the price differential between Poland and its neighbours decreased on a y/y and q/q basis. On a y/y basis, the average energy price in neighbouring countries increased by PLN 41-64/MWh (i.e. by 26-44%). From this perspective, the PLN 65/MWh (i.e. 42%) y/y growth in price in Poland is in line with the regional trend. In 2018, the average energy price in Poland was PLN 25-32/MWh higher than in Sweden, Czech Republic and Germany. The price differential between Poland and its neighbours was greater than in the previous year - resulting in growth in net imports.

International trading

Chart: Monthly imports, exports and cross-border exchange balance in 2017-2018 (in GWh).



Source: own work based on PSE S.A. data.

In the fourth quarter of 2018, Poland remained a net importer of electricity: trading balance reached 1.0 TWh (import 2.0 TWh, export 1.0 TWh). It is a result similar to the analogical period of 2017, when a trading balance reached 1.1 TWh (including import 1.8 TWh and export 0.7 TWh). In full year 2018 trading balance amounted to 5.7 TWh (import 8.2 TWh, export 2.5 TWh). In previous year Poland also was a net importer of electricity with trading balance of 3.4 TWh (import 6.6 TWh, export 3.2 TWh). In the whole year 2018 net import increased by approximately 2.3 TWh compared to the base period.

Diagram: Geographical structure of commercial exchange in 2018 (GWh).

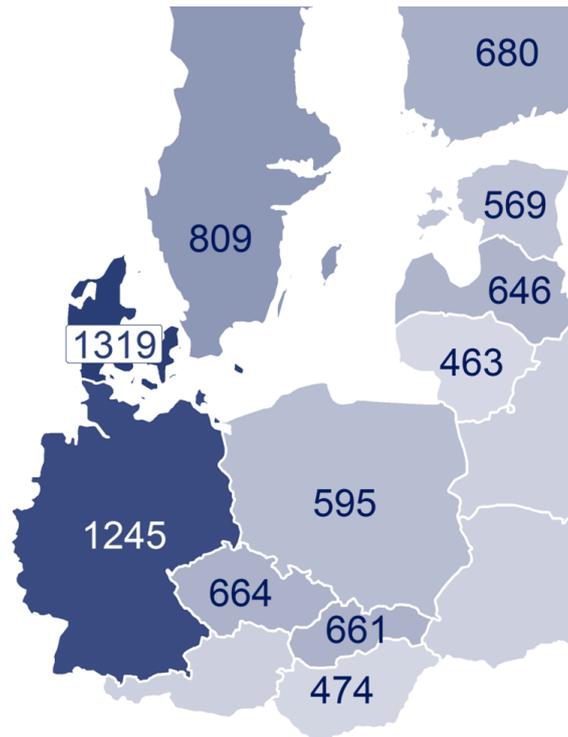


Source: own work based on PSE S.A. data.

Retail market

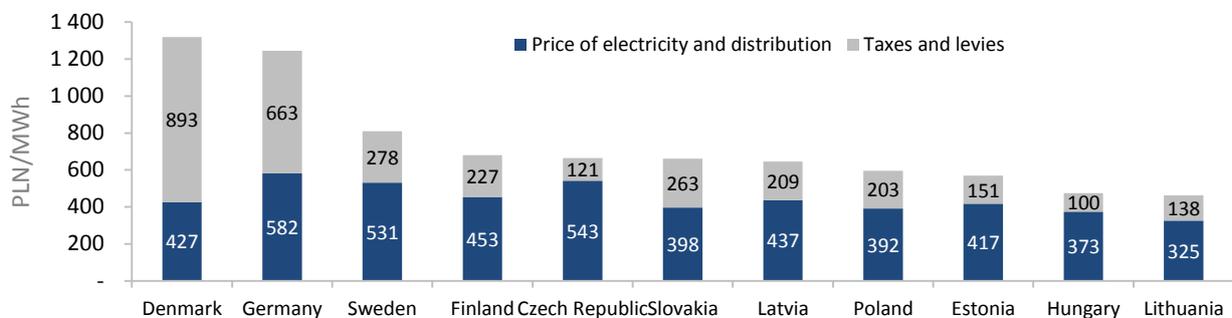
The diversity of electricity prices for retail customers in the European Union depends not only on the level of the wholesale prices of electricity. The fiscal system, regulation mechanisms and support schemes in particular countries all have significant impact on the final price of electricity. In Poland in the first half of 2018<sup>2</sup> an additional burden for individual customers accounted for approx. 34% of the electricity price and in comparison to EU average of 31%. In Denmark and Germany the proportion of additional charges in the price of electricity exceeded 50%.

Chart: Comparison of average prices for individual customers in selected EU countries in the first half of 2018<sup>3</sup> (prices in PLN/MWh, average exchange rate EUR/PLN 4.22).



Source: own work based on Eurostat data.

Diagram: The share of additional charges in electricity prices for the individual customers in selected EU countries in the first half of 2018<sup>4</sup> (prices in PLN/MWh, average exchange rate EUR/PLN 4.22).



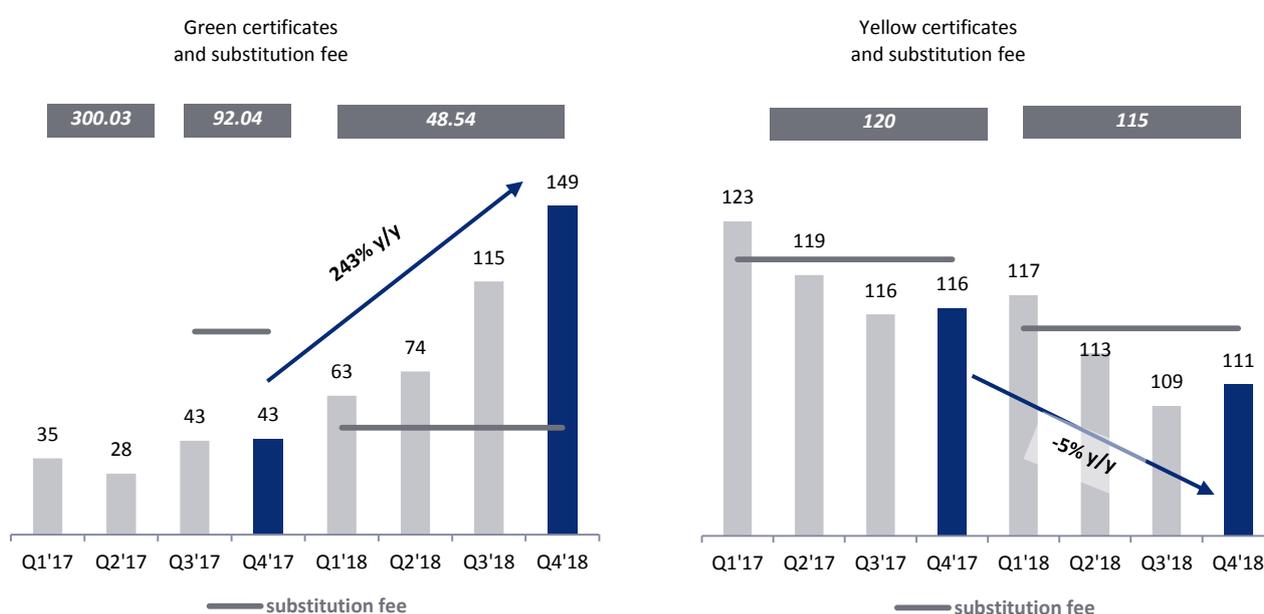
Source: own work based on Eurostat data.

<sup>2</sup> Eurostat data are published in semi-annual intervals.  
<sup>3</sup> Eurostat data are published in semi-annual intervals.  
<sup>4</sup> Eurostat data are published in semi-annual intervals.

### 4.3. Prices of certificates

In the fourth quarter of 2018, the average price of green certificates (index OZEX\_A) reached PLN 149/MWh and was 243% y/y. The price growth resulted from demand factors (a regulation of the Minister of Energy that introduced an obligation to redeem green certificates from 15.4% in 2017 to 17.5% in 2018 and to 18.5% in 2019) and supply factors (wind-based generation down by 20% y/y in the fourth quarter of 2018 and limited co-firing). Additionally, the decrease in certificates supply was driven by the closure of a certification system for new units and the upcoming end of a 15-year support period for new installations that had entered the system in 2005. The average prices of green certificates in all four quarters of 2018 were above the substitute fee due to a limited capability of paying the substitute fee. The average price of yellow certificates in the fourth quarter of 2018 reached PLN 111/MWh and was 5% lower than in the same period last year. The decline in prices results from a 34% y/y increase in the supply of energy produced in gas-fired cogeneration sources in full year 2018. The fourth quarter of 2018 was marked by comparable production on a year-on-year basis, which reduced the down trend from the previous quarter. The obligation to redeem yellow certificates increased to 8% in 2018, compared to 7% in 2017.

Chart: Average quarterly prices of certificates.



Source: Own work based on TGE quotations. The yellow certificates prices presented on the chart are weighted average blended price – for products PMGM-16, PMGM-17, PMGM-18.

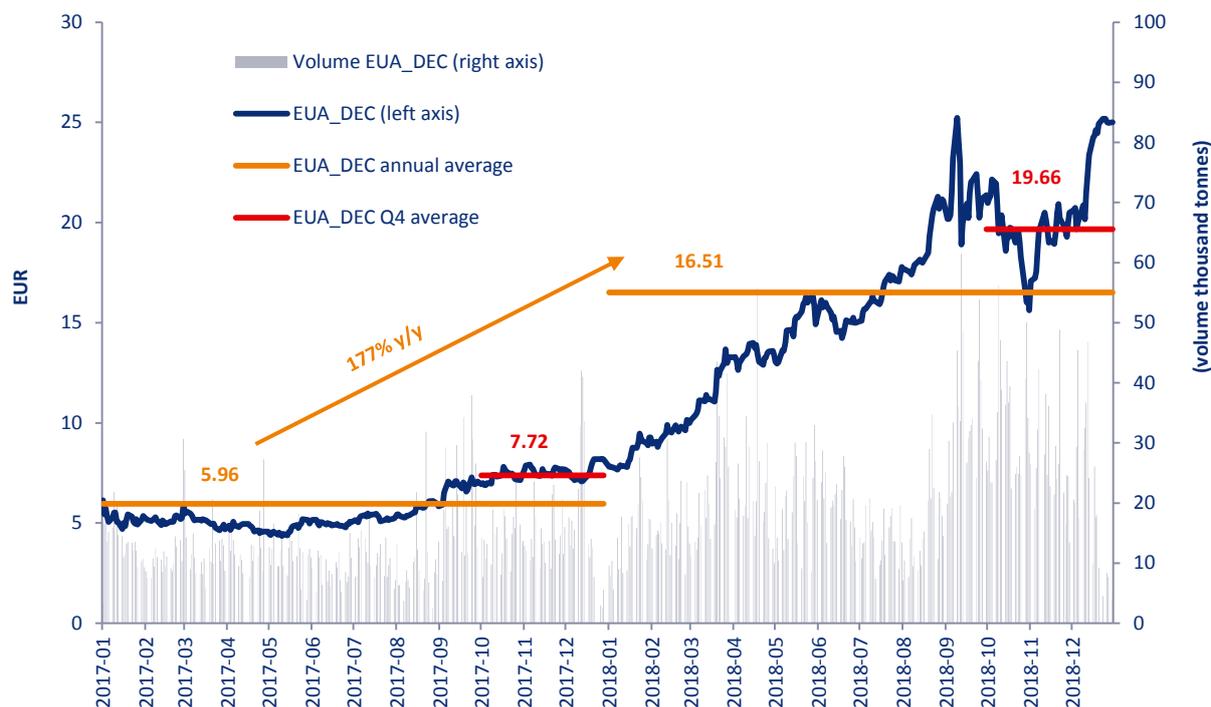
### 4.4. Prices of CO2 emission rights

EUA (European Union Allowances) prices are one of the key factors determining wholesale energy prices and PGE Group's financial results. Installations emitting CO<sub>2</sub> in the process of electricity or heat production bear the expenses for purchasing EUA allowances to cover the deficit (i.e. the difference between CO<sub>2</sub> emissions at PGE Group's generating units and the free-of-charge allowances received under derogation in accordance with the National Investment Plan). Wherein, last allocations granted free of charge are planned for realisations of investment tasks for 2019, what means that the free allocations in accordance with the currently used method will end in 2020.

In the fourth quarter of 2018, the weighted average price of EUA DEC 18 reached EUR 19.66/t and was 166% q/q higher than the average price for EUA DEC 17 (EUR 7.38/t). In full year 2018, the weighted average price for EUA DEC 18 reached EUR 16.51/t, up by 177% y/y from the average price for EUA DEC 17 (EUR 5.96/t).

The increase in CO<sub>2</sub> emission prices observed in 2018 is a result of market perception of the EU ETS reform – this issue is illustrated on the chart below.

Chart: Prices of CO<sub>2</sub> emission rights.



Source own work based on ICE quotations.

## EMISSION RIGHTS GRANTED FREE OF CHARGE FOR YEARS 2013-2020

The Regulation of the Council of Ministers, that sets the allocation of allowances for particular units of electricity producers in period 2013-2020, was adopted on April 8, 2014. Analogically, allocations of allowances for heat producers were set by the Regulation of the Council of Ministers of March 31, 2014.

PGE's installations accounts were credited with free allowances for heat for 2018 and energy for 2017, while free allowances for electricity for 2018 will be received by the Group by the end of April 2019, after verification of reports from investments submitted to the National Investment Plan.

At the same time, redemption of emission rights resulting from CO<sub>2</sub> emissions in 2017 was completed in April 2018.

Table: Emission of CO<sub>2</sub> broken down into electricity and heat production in relations to allocation of CO<sub>2</sub> emission rights for 2018 (in Mg).

Operator	CO <sub>2</sub> emissions in 2018*	Allocation of CO <sub>2</sub> emission rights for 2018**
CO <sub>2</sub> emission for electricity production	65 324 810	12 560 070
CO <sub>2</sub> emission for heat production	4 861 320	1 510 286
<b>TOTAL CO<sub>2</sub> emission for electricity and heat production</b>	<b>70 186 130</b>	<b>14 070 356</b>

\* Estimates, emissions not verified - the data will be settled and certified by the authorised verifier of CO<sub>2</sub> emission on the ground of yearly reports of volume of CO<sub>2</sub> emissions.

\*\* Amount of granted CO<sub>2</sub> emission rights will be confirmed in the Regulation of the Council of Ministers in the first quarter of 2019.

#### 4.5. Competitive environment

The electricity sector in Poland comprises four operating segments:

- generation of electricity,
- transmission, responsibility of the transmission system operator – PSE S.A.,
- distribution,
- retail sales.

District heating sector may be also distinguished, within which PGE is active in heat generation, distribution and sales.

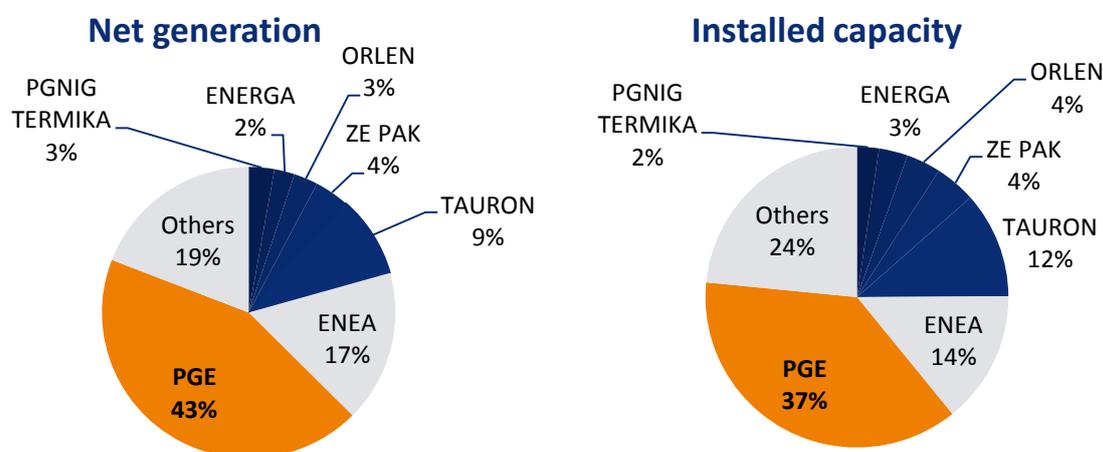
The key participants of the electricity market in Poland are four nationwide, vertically integrated energy groups: PGE Group, capital group of TAURON Polska Energia S.A., capital group of Enea S.A. and capital group of Energa S.A.

After the acquisition of EDF Polska assets, PGE Group strengthened its position in the generation segment and is the undisputed leader, with a 43% market share. The Group produces more electricity than all of the competitors on the consolidated market combined, whilst having the largest achievable capacities, both conventional and renewable. Aside from integrated energy groups, significant producers on the market include Zespół Elektrowni Pątnów Adamów Konin S.A. ("ZE PAK"), PKN Orlen S.A. ("Orlen") and PGNiG TERMIKA S.A. ("PGNiG"). Although ZE PAK's production is based on industrial plants, Orlen's and PGNiG's production is based on CHPs, the output of which depends on demand for district heating. ZE PAK's market share declined due to the shut-down of the Adamów plant from 2018, while Orlen's share significantly grew with the launch of gas-and-steam units in Włocławek and Płock.

Nearly half of the electricity produced in the country is hard coal-based - and this is a key fuel for PGE Group's competitors.

One-third of the electricity produced in Poland is lignite-based. Aside from PGE Group, ZE PAK also bases its electricity production on lignite. The use of other fuels is of relatively low significance from the viewpoint of the national power system, although it should be noted that an increase in gas-based production is related to Orlen's new assets.

Chart: Share of largest Polish electricity generators in installed capacity and net generation in the first half of 2018.



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Source: own work based on information published by the companies and Agencja Rynku Energii S.A. ("ARE").

The heat production market in Poland is highly dispersed, with the four leading producers accounting for less than 40% of production countrywide, and thanks to the acquisition of EDF's cogeneration assets, PGE Group became the undisputed leader of this market, too with a share reaching almost 18% in the first half of 2018. This market is of a local nature and bears the traits of a natural monopoly, with heating prices being set in an administrative procedure – tariffs approved by the President of the Energy Regulatory Office. The dominant producers focus their production activities in different urban areas therefore sector competition is limited. With this transaction, PGE gained access to district heating markets in the Wrocław agglomeration, Tri-City area, Kraków, Toruń and Zielona Góra. Besides PGE Group, the key producers of heat are PGNiG (focused on production mainly in the Warsaw agglomeration) and Veolia Group (Poznań agglomeration, Łódź).

Energy production from renewable sources is much more dispersed than the conventional generation market. Energy from biomass is produced at both dedicated installations and in a co-firing process with other energy sources across the country. In

previous years wind power sector was the most dynamically developing sector, with PGE Group's leading role. Having delivered four new wind projects in 2015, PGE Group became an entity with the largest installed wind capacity – 550 MW (through PGE EO S.A.). PGE Group has approximately 9% share of total wind capacity in Poland, which reached close to 5.9 GW in 2018. Other notable wind farm operators include: EDP Renováveis Polska sp. z o.o., innogy Renewables Polska sp. z o.o., Vortex Energy Polska sp. z o.o., Polenergia S.A., TAURON Ekoenergia sp. z o.o., ENERGA Wytwarzanie S.A. and E.ON Energie Odnawialne sp. z o.o., ENGIE Zielona Góra sp. z o.o. Competition among the existing wind assets covers competition on the electricity market (given that as of January 1, 2018 the obligation to purchase electricity from renewable energy sources of 500 kW or more was cancelled) and competition related to participation in green certificates scheme. They are subject of free market trade, however, due to significant oversupply this are administrative decisions with regard to the level of obligation to redeem that essentially influence the prices. The competition within new support scheme for RES takes place in auctions via lower offered amount of support.

In the distribution area, the country is divided into regions, with five large distribution system operators (the "DSO") on the market, who are required to carve out distribution activities from their other business. Aside from the above-mentioned energy groups, another significant entity is innogy Stoen Operator sp. z o.o. (formerly RWE Stoen Operator sp. z o.o.), an RWE Group company responsible for electricity distribution in Warsaw, as well as PKP Energetyka S.A. managing the railway electric network throughout the country. A historical division of the distribution areas has substantial impact on the operating conditions of the business, and this specific situation is reflected in the distribution tariffs approved by the URE president. PGE Group operates in an area that is less urbanised and industrialised, meaning that it has 5.4 million clients throughout an area of 122 ths km<sup>2</sup>. For comparison, TAURON has a similar number of clients in an area nearly twice smaller and distributes a larger amount of energy.

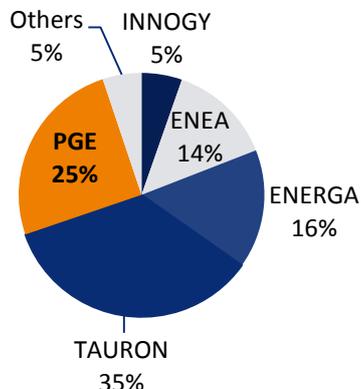
Chart: Areas of operation of Polish distribution system operators.



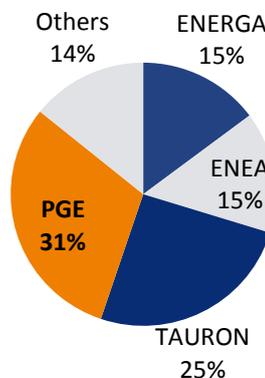
Source: own work.

Chart: Share of particular energy groups in volume of energy distributed and sales of electricity to final off-takers in the first half of 2018.

### Volume of electricity distribution



### Sales to final off-takers



Source: own work based on information published by the companies and ERO.

In the retail segment, which covers sales to end customers – individual, small and medium enterprises as well as large industrial customers – most of the sales are conducted by the four largest energy groups and innogy Polska S.A. (formerly RWE Polska S.A.). PGE Group and TAURON remain the leaders, having approximately 60% of the market. Both PGE and TAURON sell electricity to over five million clients. Despite a growing number of competitors in the segment, including companies for which electricity is not a core product, companies from outside the four largest Polish groups continue to control little market share. The leaders control close to 90% of the market, while other significant player is innogy, based on sales connected with serving as distributor for the Warsaw area, as well as PKP Energetyka.

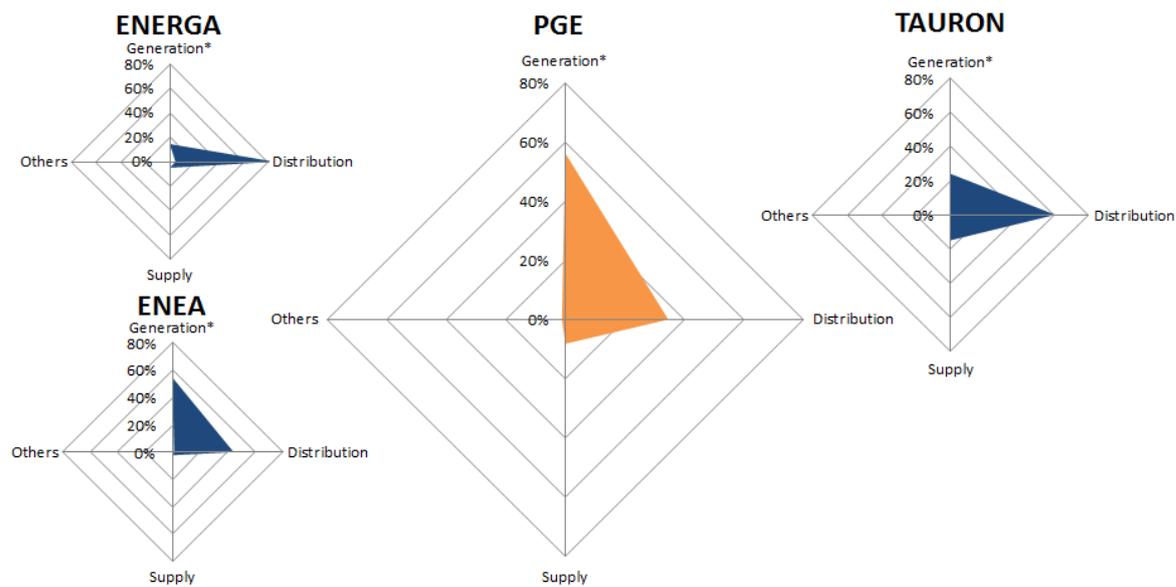
## ENERGY GROUP PROFILES

The electricity sector is divided into segments, what is reflected in the operating segments of the respective energy groups. In contrast to the other energy groups in Poland, whose dominant EBITDA driver is the electricity distribution segment, PGE Group derives much of its operating profit from the generation segment, even though the group is the country's second-largest electricity distributor by volume. This allows to optimally deploy its competences and capitalise on opportunities arising in the generation area (both conventional and renewable) as well as in wholesale energy trade, whilst generating high and stable EBITDA on regulated activities.

With acquisitions of the Bogdanka mine and Połaniec power plant and the launch of a new unit at the Kozienice power plant, Enea increased its share of EBITDA from the generation segment. This brought Enea's profile closer to that of PGE Group.

A key feature of all the groups is a relatively small contribution of retail sales to operating profit, which is a result of low sales margins, driven by strong competition in the segment.

Chart: Profiles of Polish energy groups (size of the chart is proportionate to share in the first half of 2018 EBITDA of respective business segments and the amount of total EBITDA).



\* Generation – conventional generation, generation from renewables, mining and heat generation

Source: own work based on information published by the companies.

## 4.6. Regulatory environment

### DOMESTIC REGULATORY ENVIRONMENT

Segments	Regulation	Regulation objectives	Latest conclusions	Next stage	Impact on PGE
 	Capacity market notification (Act on capacity market).	The Act on the capacity market intends to <b>implement the capacity market</b> , where the commodity will be net available capacity, which can be offered by producers and recipients of energy (DSR), receiving remuneration for readiness to deliver it, with an obligation to deliver during peak capacity balance periods (so called threat periods).	The European Commission did not object to the aid programme specified in the Act on the capacity market (decision of <b>February 7, 2018</b> ).	-	<p>This will make it possible from 2021 to generate income from capacity availability along with revenue from the sale of electricity.</p> <p>It will allow for covering expenses related to the modernisation of generation assets.</p>
	Act on promoting of electricity produced in highly-efficient cogeneration.	<p>This act intends to <b>support units producing electricity in highly-efficient cogeneration</b> in as far as the costs of such production exceed the market price of energy:</p> <ul style="list-style-type: none"> <li>units &lt;50MW - existing and modernised: guaranteed bonus, the level of which is set by the Minister of Energy; new and significantly modernised: bonus set in auctions,</li> <li>units &gt;50MW - existing and modernised: guaranteed bonus, the level of which is set annually by the Minister of Energy; new and significantly modernised: bonus set in selection.</li> </ul>	The law was voted through in <b>December 2018</b> .	<p>It came into force on <b>January 1, 2019</b>, with payments of bonuses and the hosting of auctions and selections suspended until approval from the European Commission is received.</p> <p>Expected European Commission approval - <b>second quarter of 2019</b>.</p> <p>Six regulations must be issued in order to implement the act; their drafts <b>are in progress</b>.</p>	This will secure stable revenue (for up to 15 years) covering the costs of substantial modernisations of existing cogeneration units and the construction of new ones.
 	Updated act on renewable energy sources.	<p>The update introduces arrangements made with the European Commission under the notification procedure and involves <b>a change in the way in which public aid is calculated and a change in the structure of technological baskets in auctions</b>.</p> <p>Moreover, the update removes provisions concerning closed-end distribution systems and energy clusters and clarifies the way in which the support system for installations with less than 1 MW capacity (FIT/FIP) operate as well as support for biomass.</p>	<p>Voted through in June 2018, <b>entered into force in July 2018</b>.</p> <p>European Commission approval received in December 2017.</p> <p>The update is a consequence of arrangements made with the European Commission.</p>	-	<p>As regards biomass - removal of the requirement for local biomass, which increases freedom in purchasing this commodity</p> <p>Greater access to support for wind and PV installations with small capacity (removal of administrative constraints).</p>

## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

Segments	Regulation	Regulation objectives	Latest conclusions	Next stage	Impact on PGE
	Updated act on renewable energy sources concerning change in amount of obligatory redemption of origin certificates.	In 2017, the obligation to redeem origin certificates amounted to <b>15.4%</b> of electricity volume sold, while in 2018 this increased to <b>17.5%</b> .	-	-	In 2017, given the average price of PMOZE_A of PLN 35.6/MWh, the cost for the electricity off-taker reached PLN 5.5/MWh. In 2018, given the average price of PMOZE_A of PLN 97.7/MWh, the cost for the electricity off-taker reached PLN 17.1/MWh. It should be noted that energy contracting for a given year takes place in the preceding year, therefore the cost for end customers of approx. PLN 5/MWh for 2017 materialised in 2018, while the cost for 2018 will show up in energy bills in 2019.
 	Updated water law.	This law intends to make it possible to unequivocally present the value that is to be <b>used in determining the fixed fee</b> in the case of water-law permits or integrated permits issued on the basis of previous regulations.	The Permanent Committee at the Council of Ministers is working on the law (December 2018).	The law is expected to enter into force <b>prior to the end of the 8th term of the Polish parliament.</b>	Removal of existing interpretation inconsistencies concerning payment of fees for water services.
 	Act on electromobility and alternative fuels.	The act aims to create an electromobility market (charging services) and define the <b>rules for developing and operating infrastructure</b> for use of alternative fuels in transport, including technical requirements that the infrastructure must meet.	The law was voted through in <b>January 2018.</b>	-	Introduction of conditions for the development of publicly available charging stations without concession and with simplified procedures for station construction.  Obligation for the Distribution System Operator to build publicly available charging stations if the minimum numbers of charging stations specified in the act are not met.
  	Updated Energy law.	The updated energy law contains a number of changes, including: <ul style="list-style-type: none"> <li>Comprehensive regulation for <b>energy storage.</b></li> <li>Introduction of <b>mandatory remote readings at metering installations</b> and designation of metering information operator.</li> </ul>	Public consultations on the draft act ended in <b>November 2018.</b>	Reconciliation conference (second quarter of 2019).  Work in parliament and senate (third quarter of 2019).  Adoption of the act (fourth quarter of 2019).	Changes for the Distribution System Operator connected with the contemplated introduction of mandatory intelligent metering installations (additional obligation for the DSO) and introduction of a central model for metering data management.  This will make it possible to recover electricity.

## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

Segments	Regulation	Regulation objectives	Latest conclusions	Next stage	Impact on PGE
					Regulating the status of energy storage and introduction of administrative facilitations for their construction.  Introduction of closed-end distribution areas might have an impact on the development of micro-grids.
 	Updated energy law - exchange obligation.	<ul style="list-style-type: none"> <li>Introduction of a <b>100% exchange obligation</b> while maintaining the existing exemptions from the exchange commitment (e.g. renewable energy, cogeneration).</li> <li><b>Regulation of reserve sales.</b></li> </ul>	Voted through in November 2018, <b>entered into force on January 1, 2019.</b>	-	The need to adapt trading strategy to new level of exchange obligation.
 	Act on determining maximum energy prices in 2019.	<ul style="list-style-type: none"> <li>Reduction in excise duty rates for electricity.</li> <li>Reduction in transition fee rates.</li> <li>Introduction of maximum prices for electricity in 2019 (in both trade and distribution) and introduction of compensation for trading companies.</li> </ul>	Voted through in November 2018, <b>entered into force on January 1, 2019.</b>	Regulation of the Minister of Energy, which is to constitute the basis for determining the amount of compensation for trading companies and the distribution system operator expected in the <b>first quarter of 2019.</b>	The act has an impact on trading companies due to the obligation to specify electricity sales and distribution prices in 2019 at the 2018 level and amendments to the existing contracts.
 	Regulation of the Minister of Energy amending regulation on detailed rules for determining and calculating tariffs and settlements in trade of electricity.	The amendments will concern: <ul style="list-style-type: none"> <li>A mechanism that takes into account in <b>regulatory accounts for power system operator tariffs</b> the differences in actual revenue generated in previous years and revenue resulting from their tariffs approved for previous years.</li> <li>Application of <b>quality regulation</b> mechanisms in the tariff process for power system operators .</li> <li>Awarding discounts <b>for failure to meet electricity quality parameters</b> and customer service quality standards.</li> </ul>	The draft has been <b>submitted for public consultations.</b>	Analysis of comments submitted during consultations.	Introducing a regulatory account might result in decreased revenue from distribution in certain years.

## INTERNATIONAL REGULATORY ENVIRONMENT

Segments	Regulation	Regulation objectives	Latest conclusions	Next stage	Impact on PGE
<b>Climate-energy package that sets out greenhouse gas emission reduction targets by 2030</b>					
   	<p>EU ETS directive and implementing and delegated acts</p>	<p>Combating climate change and performance of obligations resulting from the Paris Agreement. Development of appropriate investment incentives through a CO<sub>2</sub> price signal to develop low-emission sources.</p>	<p>On March 19, 2018, Directive (EU) 2018/410 of the European Parliament and of the Council amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, and Decision (EU) 2015/1814, was published in the EU's Official Journal, in connection with which the EU ETS and MSR amendment entered into force on April 8, 2018.</p> <p>Key objectives in the revised EU ETS:</p> <ul style="list-style-type: none"> <li>▪ Increase LRF to <b>2.2% annually from 2021</b>.</li> <li>▪ Doubling of the volumes of allowances for the market stability reserve ("MSR") in 2019-2023 <b>from 12% to 24%</b>, together with the introduction of cyclical cancellations of allowances from 2023 in an amount exceeding the volume of such allowances that was the subject of auctions in the preceding year.</li> <li>▪ Amendment rules for derogation (art. 10c) and the <b>Modernisation Fund</b> (art. 10d), including the exclusion of fossil fuel-based investments from financing under the Modernisation Fund.</li> <li>▪ Continued <b>allocation of free emission allowances</b> for district heating and highly-efficient cogeneration in respect of the production of heat or cooling (art. 10a).</li> <li>▪ <b>Formation of the Innovation Fund</b> in order to support innovations in low-emission technologies in evenly distributed locations throughout the EU.</li> </ul>	<p>Transposition date for most of the directive's provisions into national law - <b>October 9, 2019</b>. The European Commission is working on implementing and delegated acts and guidelines for implementing the revised EU ETS at the EU level.</p> <p>For PGE Group, the following items will be of key significance:</p> <ul style="list-style-type: none"> <li>▪ implementing act setting out the way in which the Modernisation Fund operates,</li> <li>▪ delegated act concerning allocating of free allowances for heating,</li> <li>▪ delegated act specifying operating rules for the Innovation Fund.</li> </ul> <p>The above acts are expected to be adopted in the <b>first half of 2019</b>.</p>	<p>Improvement in the competitiveness of renewable and gas sources to the detriment of hard coal-based and subsequently lignite-based generation assets.</p> <p>Increase in operating costs for conventional generation of electricity.</p> <p>Option to obtain direct investment support from 2021 from the Modernisation Fund or Innovation Fund.</p>

Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

Segments	Regulation	Regulation objectives	Latest conclusions	Next stage	Impact on PGE
<b>„Clean energy for all Europeans”</b>					
    	RED II Directive	Promoting the development of renewable energy sources in the power, district heating and transport sectors, intended for the EU to reach the <b>32% renewables target</b> in overall consumption by <b>2030</b> .	<p>Key adopted issues (the directive came into force on December 24, 2018) include:</p> <ul style="list-style-type: none"> <li>▪ Necessity to <b>declare national contributions</b> - no specific country targets were given.</li> <li>▪ Support system stability.</li> <li>▪ Introduction of simplifications and <b>faster investment processes for renewables</b>.</li> <li>▪ <b>Indicative target</b> for annual increase of renewables in district heating and cooling.</li> <li>▪ <b>Restrictions</b> concerning electricity production at <b>biomass units</b>.</li> <li>▪ Criteria for <b>sustainable development and greenhouse gas emission reductions</b> for biomass fuels.</li> </ul>	Mandatory transposition of the directive to national law - <b>by June 30, 2021</b>	<p>Increase in share of renewables with zero variable cost will cause a change in conventional units' operation profile.</p> <p>Impact on investment programme in generation segment (including renewables) and district heating by necessity to take into account development of renewables units.</p> <p>Impact on supply segment through development of prosumer segment, constituting an alternative for end users to buying energy.</p>
    	Governance regulation	Introduction of framework for implementation of the EU's energy and climate targets by establishing a system for setting and monitoring targets by member states.	<p>Key issues adopted (regulation provisions of importance to the electricity sector went into force on January 10, 2019):</p> <ul style="list-style-type: none"> <li>▪ <b>Need for Poland to submit to the European Commission an Integrated National Plan for Energy and Climate</b>, with a declaration on the trajectory of renewables development and improvement in energy efficiency as well as long-term policy for reduction of CO<sub>2</sub> emissions and development of cross-border connections.</li> </ul>	<p>A draft Integrated National Plan for Energy and Climate has been <b>submitted by Poland</b> to the European Commission.</p> <p>Deadline for final version of the plan - <b>by December 31, 2019</b>.</p>	Regulation's impact the same as Directives RED II and EED. This results from the fact that the regulation's key provisions introduce mechanisms intended to achieve the EU's targets specified in these directives, collectively by EU member states.
    	EED Directive	Promoting improvements in energy efficiency as regards both primary energy consumption and final energy consumption, intended for the EU to reach its target <b>32.5% improvement in energy efficiency</b> by 2030.	<p>Key adopted issues (the directive went into force on December 24, 2018) include:</p> <ul style="list-style-type: none"> <li>▪ Need to declare <b>energy efficiency improvements</b> - targets are not binding.</li> <li>▪ Extension of the obligation to generate savings in final energy consumption (implemented currently mainly through the white certificate system), combined with a change in the way in which the required level of savings is calculated (each year <b>0.8% of final energy consumption</b>).</li> <li>▪ Change in the level of default coefficient for conversion of final energy consumption into primary energy consumption.</li> </ul>	Mandatory transposition of the directive to national law - <b>by June 25, 2020</b> .	<p>Impact on all segments, i.e. reduction of growth in energy consumption by taking energy efficiency actions.</p> <p>Impact on supply segment resulting from costs of white certificate system.</p>

## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

Segments	Regulation	Regulation objectives	Latest conclusions	Next stage	Impact on PGE
  	EMR regulation	Establishment of legal framework for further integration of internal electricity market.	<p>The last trilogue took place on December 18-19, 2018, during which the <b>final wording of the regulation on internal electricity market</b>. The agreement must be accepted by the European Parliament and Council. Key assumptions in the adopted regulation:</p> <ul style="list-style-type: none"> <li>▪ <b>Rules regarding the application of EPS 550 and protection of vested rights:</b> <ul style="list-style-type: none"> <li>▪ The developed solution includes an exemption from the requirements specified in chapter IV of the Regulation (including EPS 550) for contracts executed prior to December 31, 2019, including multiannual contracts executed prior to that date.</li> <li>▪ If capacity contracts are executed after the regulation enters into force: <ul style="list-style-type: none"> <li>▪ for units emitting more than 550 g of CO<sub>2</sub>/kWh (EPS 550) or 350 kg CO<sub>2</sub>/kWh/year (<i>carbon budget</i>) that start commercial production of electricity prior to entry into force of the regulation, a transition period until July 1, 2025 would apply,</li> <li>• for units emitting more than 550 g CO<sub>2</sub>/kWh (EPS 550) and begin commercial production of electricity after entry into force of the regulation, no transition period applies.</li> </ul> </li> </ul> </li> <li>▪ <b>Definition of capacity mechanisms</b> that excludes ancillary services and constraint management measures from the definition.</li> <li>▪ Introduction of <b>ERAA and NRAA</b>, including a prohibition on executing new capacity contracts if these assessments do not identify a capacity deficit.</li> <li>▪ Introduced special rules dedicated to <b>strategic reserves</b>.</li> <li>▪ Introduced obligation for members states with an <b>identified capacity deficit</b> (including those already using capacity mechanisms) to prepare and implement a plan of implementing activities, in which market-type measures will be used first.</li> <li>▪ Share of <b>crossborder capacity</b> in the capacity market.</li> <li>▪ Requirement to make <b>70% of crossborder capacities</b> available for market purposes.</li> <li>▪ Frameworks to develop a <b>European organisation for distribution operators</b> ("EU DSO entity"), which will co-author European grid codes.</li> <li>▪ Retention of priority availability for renewables and high-efficiency cogeneration, as a rule for units with capacity up to 0.4 MW and for existing units regardless of their capacity that meet certain conditions.</li> </ul>	<p>In <b>March 2019</b>, an agreement as to the final wording of the Regulation is to be approved by the European Parliament, following by a formal vote at the Council.</p> <p>The regulation will presumably enter into force in the <b>first half of 2019</b>.</p> <p>The regulation will be in force from <b>January 1, 2020</b>.</p>	<p>Capacity contracts executed by PGE Group in auctions won on the capacity market in 2018 and 2019 will have vested rights protected throughout their entire term.</p> <p>Coal units that exceed the emissions standard 550 g CO<sub>2</sub>/kWh (EPS 550) and 350 kg CO<sub>2</sub> will not participate in the capacity market from July 1, 2025.</p> <p>This means that capacity contracts (mainly annual) for existing units (including units modernised to BAT conclusions that do not meet the CAPEX threshold for multiannual contracts) will be performed until mid-2025 at the latest. In connection with this, the adopted regulations have an impact on re-assessment of the justification for investments intended to adapt large combustion facilities to BAT conclusions.</p> <p>Need to re-assess capacity sufficiency taking into account lack of support for existing generating assets after 2025.</p> <p>Further business consequences will also result from the way in which the solutions included in the Regulation are implemented wherever there is room to act by national authorities.</p>

## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

Segments	Regulation	Regulation objectives	Latest conclusions	Next stage	Impact on PGE
 	EMD Directive	<p>Key goals of EMD directive revision:</p> <ul style="list-style-type: none"> <li>Strengthen the consumer's role on the electricity market,</li> <li>Protect energy-poor and sensitive customers,</li> <li>Ensure decarbonisation, especially by promoting and developing electromobility.</li> </ul>	<p>The last trilogue took place on December 18/19, 2018, during which the final wording of the directive on <b>common rules for internal electricity market</b> was agreed. The agreement must be accepted by the European Parliament and Council.</p> <p>The key agreed issued include:</p> <ul style="list-style-type: none"> <li>Requirement to <b>implement intelligent metres</b>.</li> <li>Restrictions in DSO activities as regards <b>energy storage</b> and servicing <b>EV charging stations</b>.</li> <li><b>New terms for changing electricity sellers</b>.</li> <li>Introduction of exemption from rule of free energy prices, making it possible to <b>temporarily apply regulated prices</b> for households.</li> <li>Introduction of <b>contracts with dynamic pricing</b>.</li> <li>Support for the <b>development</b> of energy communities.</li> </ul>	<p><b>In March 2019</b>, an agreement as to the final wording of the Directive is to be approved by the European Parliament, following by a formal vote at the Council.</p> <p>The Directive will enter into force 20 days after it is published in the EU's Official Journal.</p> <p>Mandatory transposition of the directive to national law - <b>by December 31, 2020</b>.</p>	<p>Impact on the distribution segment, especially as regards restricting activity related to energy storage and operating EV charging stations and imposition of obligation to implement intelligent metering.</p> <p>Impact on supply segment, mainly through imposition of additional information requirements for consumers, reduction of time to replace seller, development of contracts with dynamic pricing.</p>
<b>These regulations concern the EU's Multiannual Financial Framework and financing for sustainable economic growth</b>					
 Polska Grupa Energetyczna	EU's Multiannual Financial Framework	EU's financial framework (income and expenditures) established for 2021-2027.	<p>The European Commission in May and June 2018 presented the key assumptions for the EU's Multiannual Financial Framework (MFF) for 2021-2027 and proposals for several legislative acts.</p> <p><b>In November and December 2018</b>, the European Parliament adopted a position on the MFF's key assumptions (including the proposal to form a fund to support the transformation of coal-dependent countries and regions) and on certain other legislative acts concerning MFF. The European Parliament is working on its position with regard to the regional development fund and cohesion fund.</p> <p>Key issues proposed by the European Commission:</p> <ul style="list-style-type: none"> <li>Increase funding for climate targets from <b>20% (2014-2020) to 25%</b> of the overall EU budget (2021-2027).</li> <li><b>Expand the catalogue</b> of criteria based on which regional development and cohesion funds will be awarded.</li> <li><b>Exclude the following</b> from this funding:             <ul style="list-style-type: none"> <li>investments in emission reductions at units subject to EU ETS,</li> <li>investments in generation, storage and combustion of fossil fuels,</li> <li>funding for the construction of nuclear power plants and scrapping costs.</li> </ul> </li> <li>Establishment of new source of EU funds: up to <b>30% of revenue from the sale of allocated emission allowances</b> under art. 10 sec. 2 letter a of EU ETS directive and up to <b>30% of the market equivalent of allowances allocated free of</b></li> </ul>	<p>Adoption of position by the European Parliament in reference to the other legislative acts concerning MFF - <b>first half of 2019</b>.</p> <p>Work at the Council on adoption of a general approach to MFF and the related specific legislative acts - <b>2019/2020</b>.</p>	Impact of regulation on decrease in funding that can be secured by PGE Group companies for investments.

## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

Segments	Regulation	Regulation objectives	Latest conclusions	Next stage	Impact on PGE
			<b>charge</b> to electricity producers.		
	EU package for funding sustainable economic growth	Implementation of regulations intended to <b>facilitate funding</b> for sustainable economic growth in EU.	<p>The European Commission in March 2018 presented an action plan for financing sustainable economic growth, and in May 2018 presented proposals of the first legislative acts concerning this issue. In December 2018, the European Parliament adopted a position on the regulation concerning information obligations and regulation concerning reference indicators. As regards the two regulations above, the Council adopted a general approach in December 2018.</p> <p>Key issues proposed by the European Commission:</p> <ul style="list-style-type: none"> <li>▪ <b>Involvement of private financial sector</b> in reaching targets by providing funding for sustainable investments.</li> <li>▪ Indication of criteria based on which economic activities will be assessed to determine whether they are <b>environmentally sustainable</b>. In this aspect, activities concerning the shut-down of anthropogenic greenhouse gas emissions, including from sources based on fossil fuels, will be taken into account.</li> <li>▪ Indication of criteria to be used for assessing how <b>harmful activity is to slowing down climate change</b> and whether it does not qualify as environmentally sustainable. These criteria include activities that contribute to a significant increase in greenhouse gas emissions.</li> <li>▪ <b>Establishment of information obligation</b> for institutional participants in financial markets in reference to the way in which risks associated with sustainable development are taking into account in the process of making investment decisions or providing financial advisory.</li> <li>▪ Establishment of <b>reference indicators</b> taking into account CO2 emissions.</li> </ul>	<p>Trilogues concerning the regulation on information obligations and regulation on reference indicators - <b>January 2019</b>. Adoption of these regulations - <b>first half of 2019</b>.</p> <p>The European Parliament is working on a position regarding the regulation for criteria based on which economic activities will be assessed to determine whether they are environmentally sustainable. The European Parliament's position is expected in the first half of 2019. The Council is expected to adopt a general approach in the <b>second half of 2019</b>.</p>	Possible impact of regulation on availability and cost of funding obtained by PGE Group companies for investments.

#### **4.7. Supply markets**

Lignite, hard coal, natural gas and biomass are key fuels used to generate electricity and heat by power plants and heat and power plants belonging to the PGE Group. The cost of fuel procurement constitutes a major share in electricity generation costs. PGE S.A., on the ground of Agreement for Commercial Management of Generation Capacities, secures hard coal, gas and biomass supplies to the companies.

Lignite supplies are carried out within a framework of regular cooperation between branches operating in the structure of PGE GiEK. The KWB Bełchatów mine supplies lignite to the Bełchatów power plant and the KWB Turów mine supplies it to the Turów power plant. The Group set up internal rules with respect to the performance and settlement of lignite supplies between individual branches of PGE GiEK.

The main supplier of the hard coal for the electricity and heat production needs in branches of PGE GiEK and PGE EC S.A. and its subsidiaries is Polska Grupa Górnicza S.A.

Biomass is obtained via procurement procedures mainly from suppliers operating on the Polish biomass market.

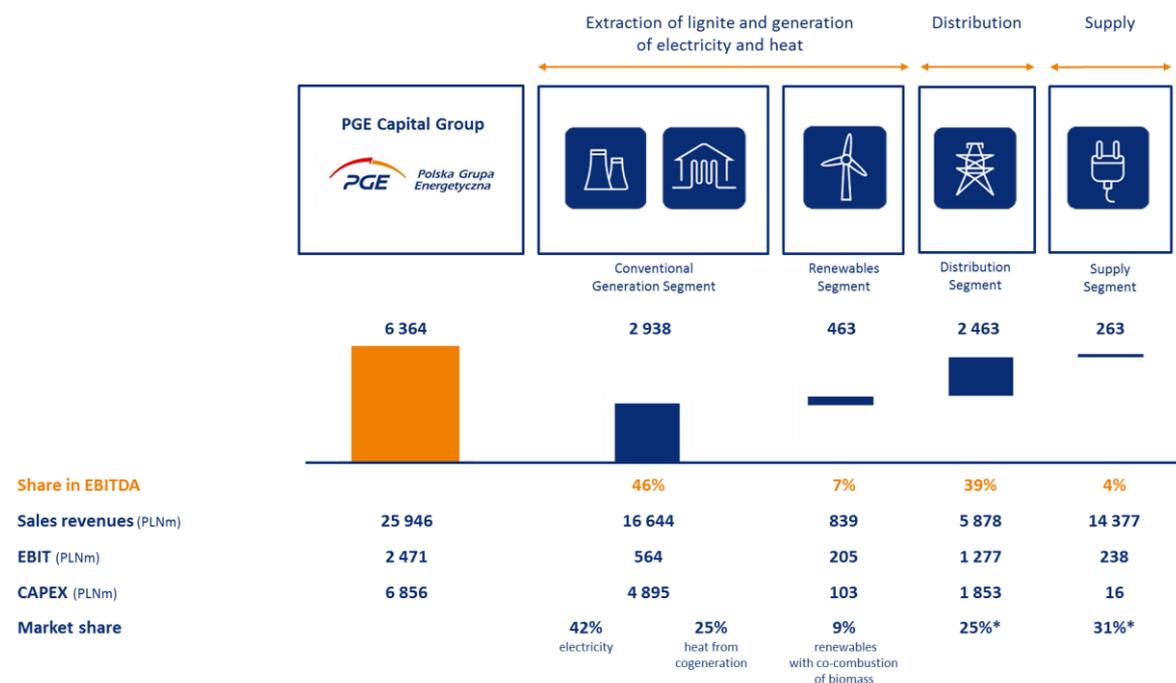
Main supplier of gas for production needs of electricity and heat in the branches of PGE EC and its subsidiaries is PGNiG S.A.

As regards fuel supplies at PGE Group in 2018, no threats were identified such as could have disrupted continuity of the production process.

## 5. Activities of PGE Capital Group in 2018

### 5.1. Business model

PGE Capital Group is Poland's largest vertically integrated producer and supplier of electricity and largest producer of district heating. Operations cover the entire value chain: from lignite extraction through production of electricity at power plants and CHP plants as well as renewables to electricity distributions and sales.



\* Estimated data concerning sales to final off-takers and distribution.

PGE Group generates 43% of the electricity (including Conventional Generation approx. 42%) produced in Poland and 25% of heat from cogeneration. Additionally, 9% of domestic renewable energy comes from our assets. PGE Group's distribution lines cover approx. 40% of Poland's territory and supply electricity to 5.4 million final customers, i.e. 25% of the country's users. We have 5.3 million clients on the retail market, accounting for approx. 30% of the final off-takers in Poland.

In 2018, PGE Group generated EBITDA of approx. PLN 6.4 billion.

The Conventional Generation segment, which includes the conventional generation of electricity and heat, made the largest contribution to revenue and EBITDA. Investment expenditures of approx. PLN 4.9 billion were made in the Conventional Generation segment. Half of these expenditures are incurred in connection with development investments - the construction of high-efficiency conventional generation capacities – 1 800 MW units in Opole and a 490 MW unit in Turów. The other significant investments are intended to raise the efficiency of existing assets and environment-related modernisations.

The Distribution segment is the second largest business line in terms of its share in PGE Group's results. The segment is responsible for providing electricity supply services. Investment expenditures in this segment reached approx. PLN 1.9 billion, mainly related to grid modernisation and replacement and new off-takers connections.

The Renewables segment is responsible for the generation of electricity from renewable sources and management of pumped storage capacities. The Group is actively investing in the development of renewable energy sources. Having won a RES auction in 2018, it is developing a wind farm with capacity of nearly 100 MW. PGE Group pursues one of the Group's strategic development options after 2020, i.e. it's implementing a project to develop offshore wind farms. The Group's plan is to reach 1 GW in 2026 and 2.5 GW by 2030.

The Supply segment focuses on wholesale and retail trade of electricity and related products.

## 5.2. Business segments



### Conventional Generation

### Renewables

### Supply

### Distribution

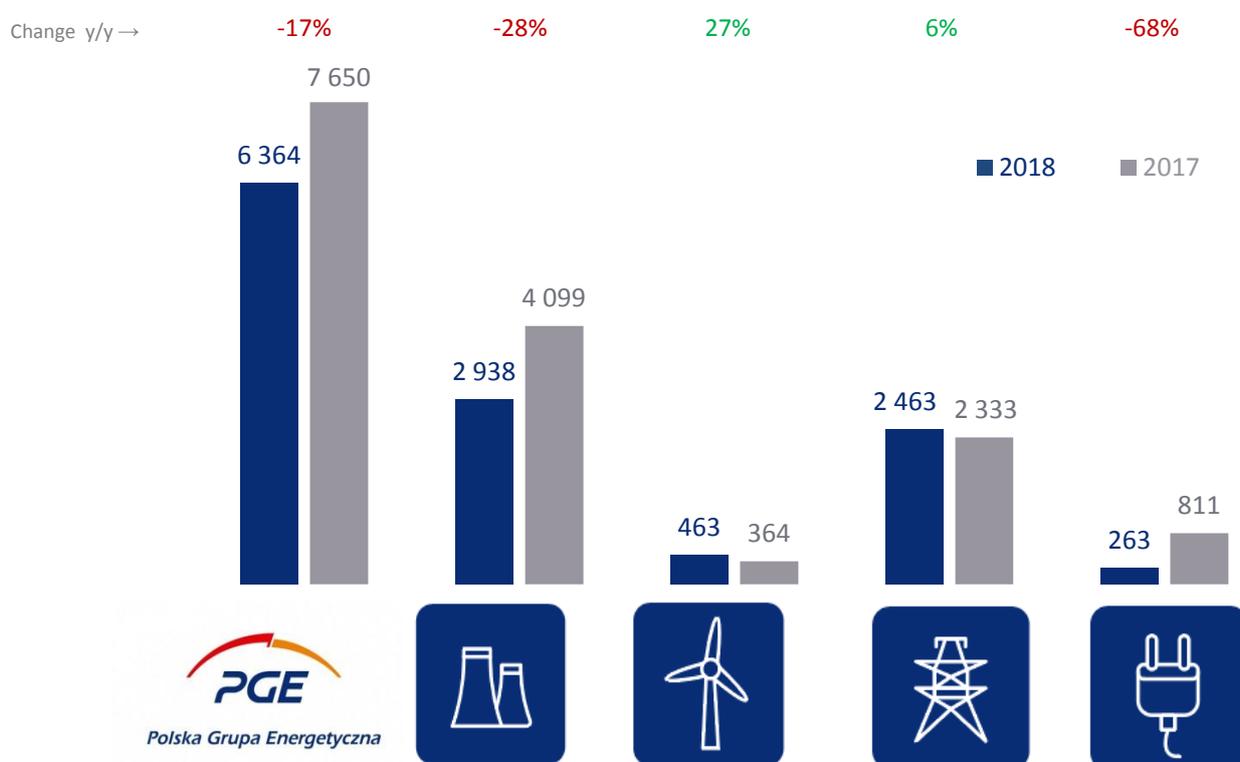
<b>Activities</b>	Extraction of lignite, production of electricity and heat from conventional sources, transmission and distribution of heat as well as supporting services	Generation of electricity from renewable sources and in pumped storage plants	Wholesale and retail trading of electricity on domestic and international markets, trading of related products, fuels and CO <sub>2</sub> allowances	supply of electricity to final off-takers through the grid and HV, MV and LV infrastructure
<b>Key assets of the segment</b>	5 conventional power plants 16 CHP plants 2 lignite mines	14 wind farms 1 photovoltaic power plant 29 run-of-river hydro power plants 4 pumped-storage power plants, including 2 with natural flow	-	290 235 km of distribution lines
<b>Electricity volumes</b>	Net electricity generation 64.09 TWh	Net electricity generation 1.82 TWh	Sales to final off-takers 40.39 TWh	Electricity distribution 36.41 TWh
<b>Market position</b>	PGE Group is the leader of lignite mining in Poland (87%), national leader in electricity and heat generation	PGE Group is the largest electricity producer from RES with market share of approx. ok. 9% (including biomass co-combustion)	One of the leaders in wholesale and retail trading in Poland	Second domestic electricity distributor with regard to number of customers

### 5.3. PGE Group's key financial results

The best way to measure the profitability of energy companies is EBITDA<sup>5</sup>. This is a result before depreciation, amortization, income tax and interest from drawn interest bearing debt. It reflects cash flows from operating activities and makes it possible to compare the results of companies regardless of the value of their assets, level of debt and existing income tax rates.

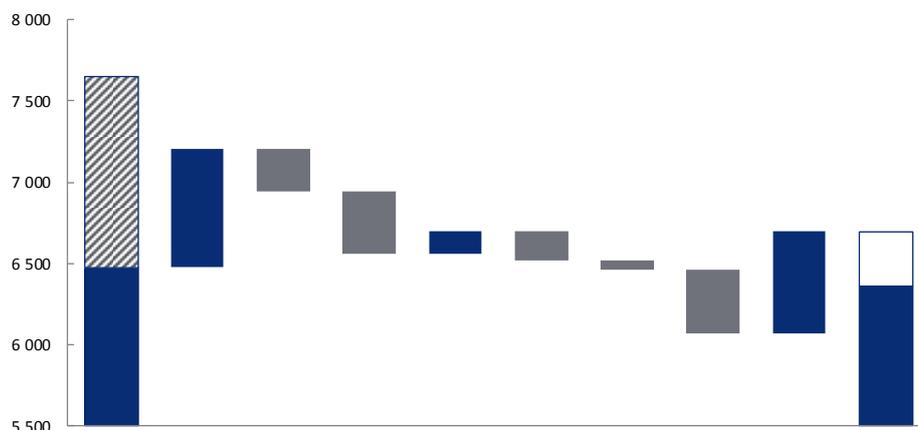
PGE Group's consolidated results are composed of the financial results of each of its operating segments. The Conventional Generation segment made the largest contribution to the Group's result, accounting for nearly half of annual EBITDA. The Distribution segment had the second-largest share, accounting for almost 40% of EBITDA. The Renewables and Supply segments contributed respectively 7% and 4% to the Group's EBITDA.

#### EBITDA of the Capital Group by segments (PLN million)



<sup>5</sup> EBITDA is calculated as follows: operating profit + depreciation & amortisation, liquidation and write-offs (fixed assets, intangible assets, NI and goodwill) recognized in the financial result.

Chart: Key factors affecting recurring EBITDA in PGE Capital Group (in PLN million).



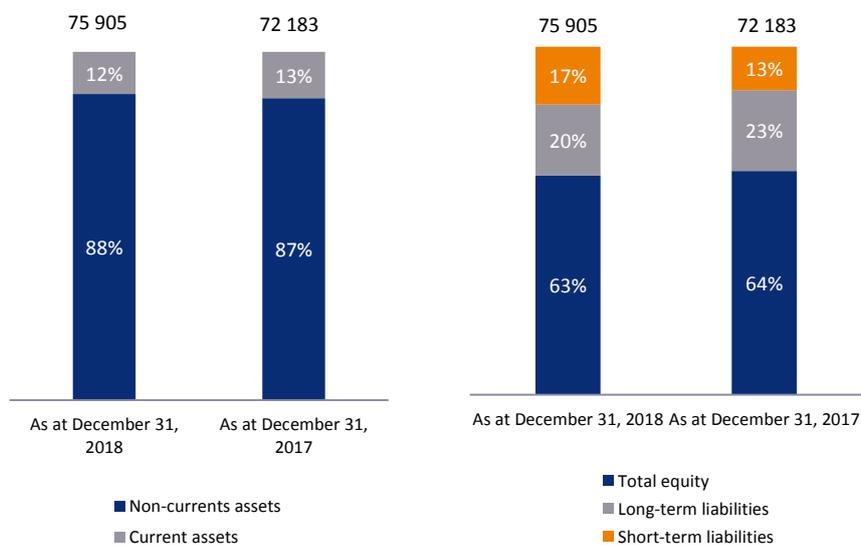
	EBITDA 2017	Higher price of electricity - Conventional Generation segment	Costs of fuel	CO <sub>2</sub> Costs	Result on distribution	Margin on the sale of electricity to final customers	Personnel costs	Other	EBITDA Acquired assets*	EBITDA 2018
<b>Change</b>		<b>730</b>	<b>-262</b>	<b>-389</b>	<b>145</b>	<b>-185</b>	<b>-59</b>	<b>-387</b>	<b>629</b>	
EBITDA reported 2017	<b>7 650</b>									
One-offs 2017	<b>1 171</b>									
Recurring EBITDA 2017	<b>6 479</b>		1 948	1 171	4 262		4 345		193	
Recurring EBITDA 2018			2 210	1 560	4 407		4 404		822	<b>6 701</b>
One-offs 2018										<b>-337</b>
EBITDA reported 2018										<b>6 364</b>

One-offs reducing the reported result  
 One-offs increasing the reported result

\* EBITDA of companies: PGE Energia Ciepła S.A., PGE Toruń S.A., PGE Gaz Toruń sp. z o.o., EC Zielona Góra S.A., Kogeneracja S.A., PGE Paliwa sp. z o.o., PGE Ekoserwis sp. z o.o., Torec sp. z o.o., Zower sp. z o.o.

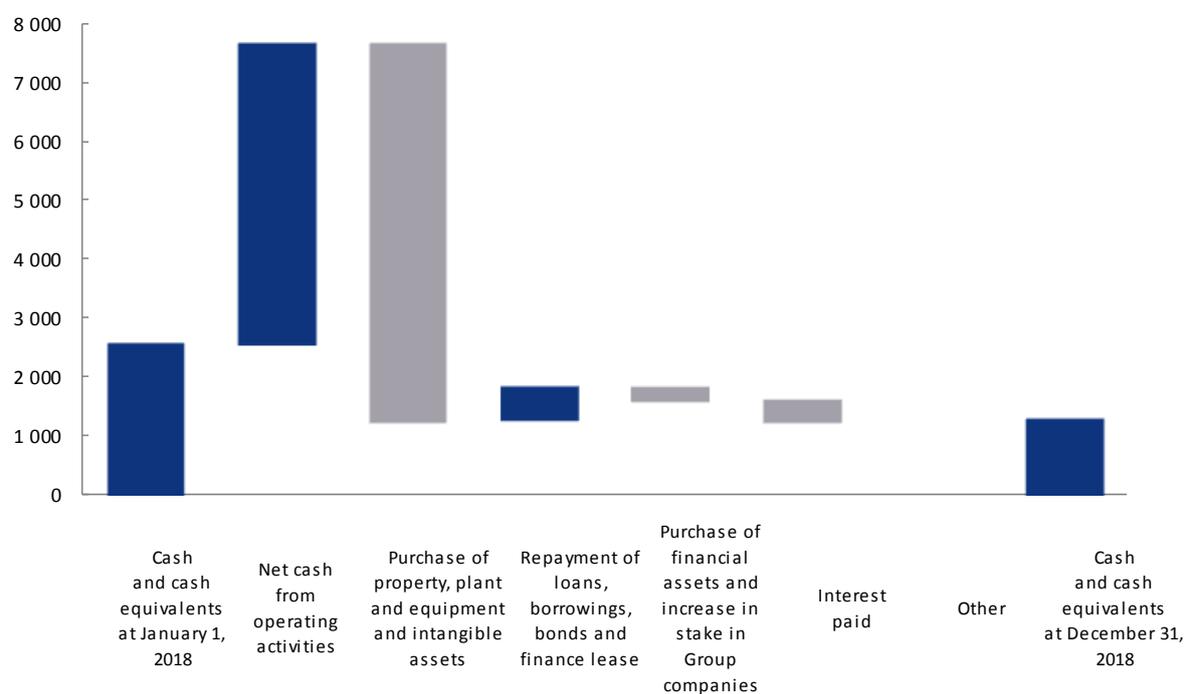
## CONSOLIDATED STATEMENT OF FINANCIAL POSITION

Chart: Structure of assets and equity and liabilities.



## CONSOLIDATED STATEMENT OF CASH FLOWS

Chart: Net change in cash (in PLN million).



**Change in cash**

**5 102**

**-6 368**

**558**

**-225**

**-316**

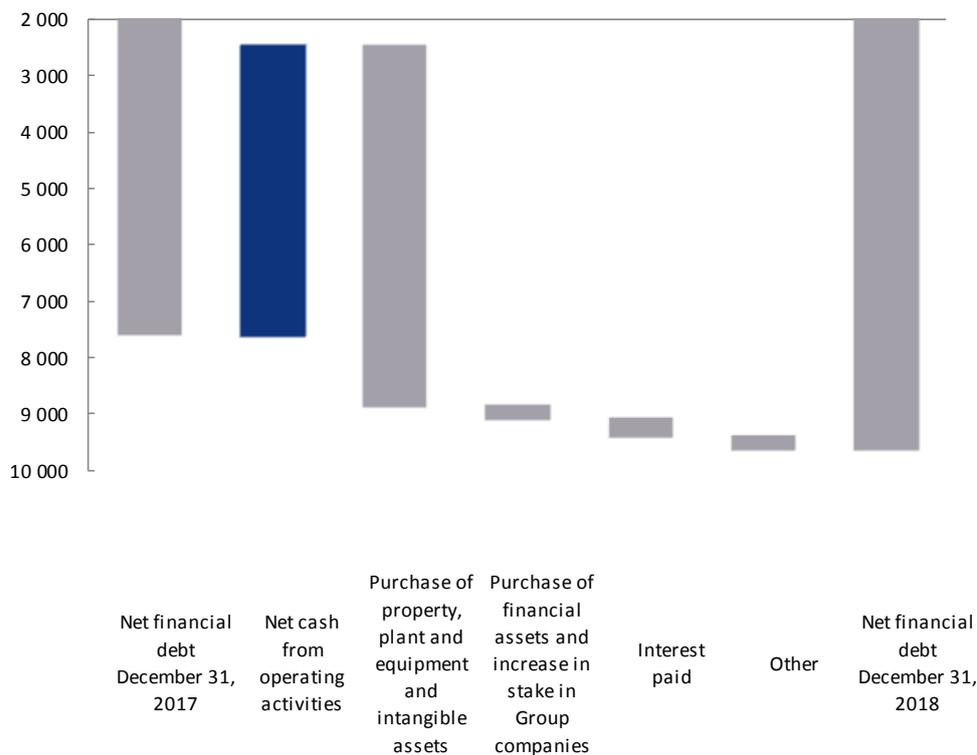
**-23**

Cash and cash equivalents

**2 551**

**1 279**

Chart: Net debt (in PLN million).



**Change in net debt**

**-5 102      6 368      225      316      214**

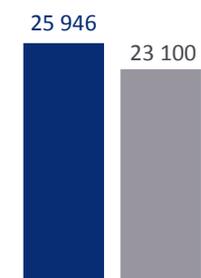
Net financial debt      **7 579**

**9 600**

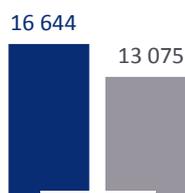
## GEOGRAPHICAL AREAS

The Group earns income mainly in the domestic market. Detailed information on income breakdown by geographic area is presented in note 6.2 to the consolidated financial statements.

KEY RESULTS IN BUSINESS SEGMENTS (IN PLN MILLION)



12% y/y



27% y/y

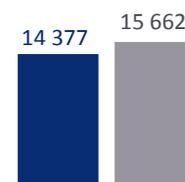
Sales revenues



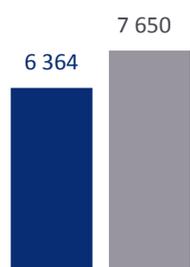
16% y/y



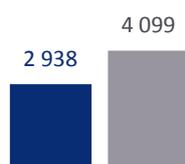
-8%



-8% y/y



-17% y/y



-28%

EBITDA



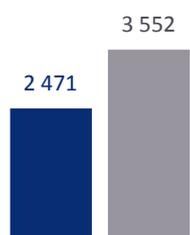
27% y/y



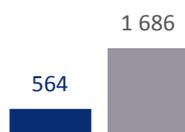
6% y/y



-68% y/y



-30% y/y



-67% y/y

EBIT



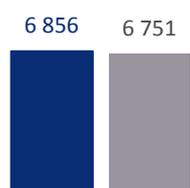
n/a



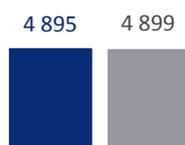
10% y/y



-70% y/y



2% y/y



0% y/y

Capital expenditures



27% y/y



8% y/y



14% y/y

## BALANCE OF ENERGY OF PGE CAPITAL GROUP

### Balance of electricity

Table: Sales, purchase, production and consumption of electricity in the PGE Capital Group (in TWh).

Volume	2018	2017	zmiana %
<b>A. Sales of electricity outside the PGE Capital Group:</b>	<b>76.78</b>	<b>65.78</b>	<b>17%</b>
<i>Sales to end-users*</i>	42.57	40.43	5%
<i>Sales on the wholesale and balancing market</i>	34.21	25.35	35%
B. Purchases of electricity from outside of PGE Group (wholesale and balancing market)	15.17	13.76	10%
C. Net production of electricity in units of PGE Capital Group	65.91	56.79	16%
<b>D. Own consumption DSO, KWB, ESP (D=C+B-A)</b>	<b>4.30</b>	<b>4.77</b>	<b>-10%</b>

\*Sale mainly by PGE Obrót S.A. and PGE Energia Ciepła S.A.

The total volume of purchased and generated electricity is higher than the volume of electricity sold. The difference presented in point D results from the necessity to cover grid losses in the distribution business (Distribution System Operator), consumption of energy at lignite mines and consumption of energy at pumped-storage plants.

The higher volume of sales to end customers resulted from recognition of sales generated by PGE Energia Ciepła S.A. The higher sales volume on the wholesale and balancing market results mainly from placing generation capacity of the newly acquired assets. Additionally, the volume growth was driven by favourable market conditions.

### Production of electricity

Table: Production of electricity (in TWh).

Electricity generation volume	2018	2017	% change
<b>Electricity production in TWh, including:</b>	<b>65.91</b>	<b>56.79</b>	<b>16%</b>
Lignite-fired power plants	38.90	38.95	0%
Coal-fired power plants	16.61	11.11	50%
<i>including co-combustion of biomass</i>	0.14	0.13	8%
Coal-fired CHP plants	4.29	1.47	192%
<i>including co-combustion of biomass</i>	0.02	0.00	0%
Gas-fired CHP plants	4.12	2.87	44%
Biomass-fired CHP plants	0.16	0.20	-20%
CHP plants fuelled by municipal waste	0.01	0.00	0%
Pumped-storage power plants	0.39	0.44	-11%
Hydroelectric plants	0.37	0.47	-21%
Wind power plants	1.06	1.28	-17%
<i>Including Acquired assets *:</i>	<i>10.40</i>	<i>1.58</i>	<i>558%</i>

\* Rybnik power plant, EC Gdańsk, EC Gdynia, EC Kraków, EC Wrocław, EC Czechnica, EC Zawidawie, EC Zielona Góra, EC Toruń.

## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

The main impact on the level of electricity generation in 2018, compared to 2017, was higher generation at hard coal-fired power plants (growth by 5.5 TWh). Out of this value, 4.5 TWh results from inclusion of full year of Rybnik power plant's generation, while in 2017 it included only generation from the period under consolidation, i.e. from November 14, 2017 until December 31, 2017. Higher generation at Opole power plant resulted from larger use of the power plant's units by PSE S.A. and repair-related downtime being lower by 960 hours (unit no. 3 remained in medium overhaul from March 3, 2017 till May 4, 2017). Higher production at Opole power plant compensated for lower output at Dolna Odra power plant, due to lower use of units by PSE S.A.

Hard coal-based CHP plants produced by 2.82 TWh more electricity. Out of this 2.81 TWh results from recognition of full-year production of Gdańsk CHP, Gdynia CHP, Wrocław CHP, Czechnica CHP and Kraków CHP, while in 2017 it included only generation from the period under consolidation, i.e. from November 14, 2017 until December 31, 2017.

The growth in production at gas-fired combined heat-and-power plants is 1.25 TWh. Main reason is the recognition of full-year production of Toruń CHP, Zielona Góra CHP and Zawidawie CHP (up by 1.46 TWh), while in 2017 it included only generation from the period under consolidation, i.e. from November 14, 2017 until December 31, 2017. The decline in electricity production was recorded in the gas-fired CHPs previously owned by the Group.

Production in lignite-based power plants and biomass CHP plants was similar y/y.

The lower output at wind farms results from worse windiness than expected, mainly in February and period May- December 2018.

Output at hydropower plants is lower y/y, resulting from less favourable hydrological conditions (mainly in May, June, August, September, October, November and December 2018) – due to hydrological drought.

Slightly lower production in pumped storage power plants results from the nature of these generation units, which in 2018, were used to a lower extent by PSE S.A.

Table: Production of heat (PJ).

Heat production volume	2018	2017	% change
<b>Heat production in PJ, including:</b>	<b>51.18</b>	<b>29.24</b>	<b>75%</b>
Lignite-fired power plants	0.34	0.11	209%
Coal-fired power plants	2.68	2.76	-3%
Coal-fired CHP plants	36.99	16.25	128%
Gas-fired CHP plants	10.34	9.31	11%
Biomass-fired CHP plants	0.83	0.81	2%
<i>Including Acquired assets*</i>	<i>32.83</i>	<i>10.60</i>	<i>210%</i>

\* Rybnik power plant, EC Gdańsk, EC Gdynia, EC Kraków, EC Wrocław, EC Czechnica, EC Zawidawie, EC Zielona Góra, EC Toruń.

Higher heat production volume in 2018 y/y resulted mainly from the higher generation in the Acquired assets due to the recognition of full-year production of Rybnik power plant, Gdańsk CHP, Gdynia CHP, Kraków CHP, Wrocław CHP, Czechnica CHP, Toruń CHP, Zielona Góra CHP and Zawidawie CHP, while in 2017 it included only generation from the period under consolidation, i.e. from November 14, 2017 until December 31, 2017.

### Sales of heat

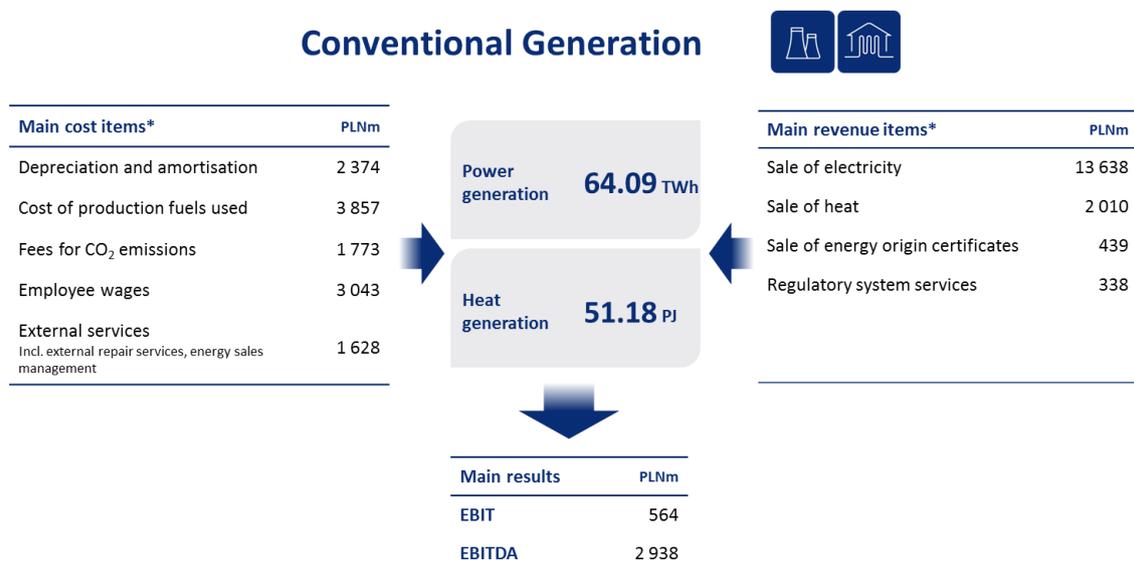
In 2018 the heat sales volume in PGE Capital Group totalled 49.66 PJ and were higher by 24.81 PJ y/y. The above growth includes recognition of full year sales of heat by the Acquired assets from Conventional Generation segment, while in 2017 it included only heat sales from the period under consolidation, i.e. from November 14, 2017 until December 31, 2017 (increase by 25.52 PJ) and lower sales by branches of PGE GiEK S.A. (-0.71 PJ), what resulted largely from decreased demand for heat caused by the higher average outside temperatures.

## 5.4. Operational segments

### CONVENTIONAL GENERATION

#### Segment description and its business model

This segment includes lignite mining, generation of electricity and heat in conventional sources as well as the transmission and distribution of district heating.



\*in accounting terms.

The main source of revenue in the Conventional Generation segment is revenue from the **sale of electricity** on the wholesale market, based on electricity prices that are shaped by supply and demand mechanisms, taking into account the variable costs of generation. At the same time, the segment's key cost items, given their size and volatility, and thus their impact on operating results, are the **cost of production fuels used**, mainly hard coal and natural gas, as well as **fees for CO<sub>2</sub> emissions**. Lignite-based production, which is of key significance for the Group, is based on own mines, therefore its cost is relatively stable and reflected mainly in fixed-cost items, i.e. personnel costs, third-party services and depreciation.

The segment's second source of revenue is **revenue from the sale and distribution of heat**. This is regulated revenue. Energy companies independently set tariffs and present them to the President of the Energy Regulatory Office (URE President) for approval. Heat production at PGE Group takes place in cogeneration units, which offer the opportunity to set tariffs for heat using a simplified approach (compared to tariffs based on a full cost structure), based on reference prices, which are mainly based on the average sales prices for heat generated in units with specific fuel other than cogeneration units. They are published each year by the ERO President. Tariffs for heat production for cogeneration units in a given tariff year thus reflect changes in the costs of heat-generation units (not co-generation units) in the previous calendar year. The cost approach is applied in the case of tariffs for heat distribution, which allows to cover justified costs (mainly the costs of heat losses and property tax) and a return on invested capital, in line with guidelines from the ERO President. Distribution tariffs for heat are in place at branches in Gorzów and Zgierz, as well as by Kogeneracja S.A., PGE Toruń and Zielona Góra CHP.

Electricity production in high-efficiency cogeneration is additionally compensated. Until 2018, CHPs generated revenue from the **sale of energy origin certificates**, i.e. cogeneration certificates (yellow and red). From 2019, due to a change in support model, they will receive support at a level covering increased operating costs related to production. For large units, this will be set on an individual basis. A similar support mechanism is in place for biomass-fired generating assets. This type of production is also additionally compensated by awarding origin certificates, i.e. green certificates, the sale of which generates additional revenue for units in the conventional generation segment.

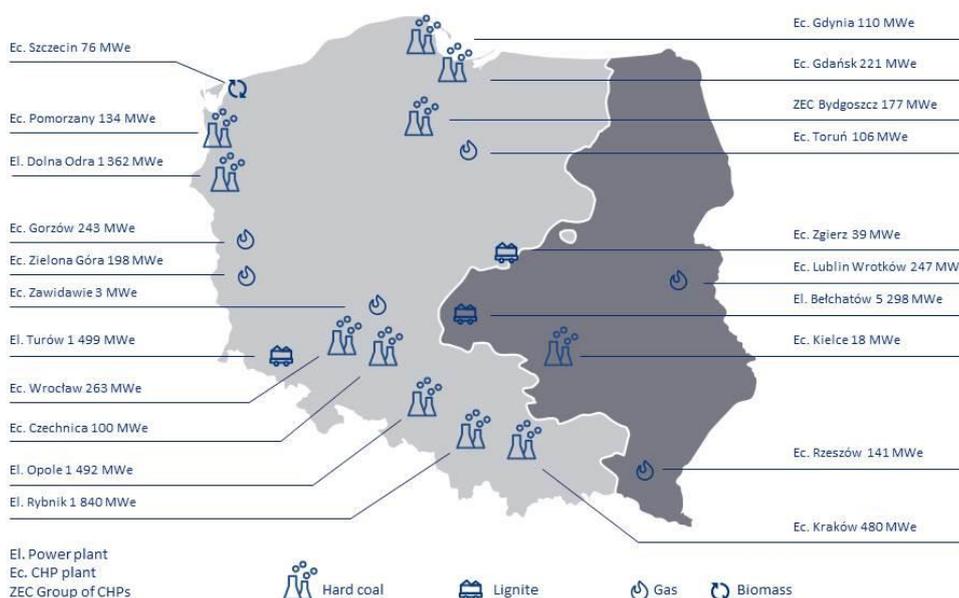
A significant item in the segment's revenue constitutes **revenues from the provision of regulatory system services** based on an agreement with the Polish transmission system operator, PSE S.A. This revenue is in parallel to revenue generated on the electricity market and is related to the need to ensure stable operations for the national power system. Regulatory system services are provided by power plants of PGE GiEK and by Rybnik power plant.

**ASSETS**

Conventional Generation in PGE Capital Group includes PGE GiEK S.A. based in Bełchatów. As at December 31, 2018 the company comprised of 12 branches which are located in nine voivodships. Branches included 2 lignite mines, 4 conventional power plants and 8 CHP plants. From November 14, 2017 Conventional Generation segments included also part of assets acquired from EDF i.e. 5 companies, including 1 conventional power plant and 8 CHP plants. On January 2, 2019 6 CHP plants were separated from PGE GiEK and transferred to PGE EC (see p. 7.1 of this report).

The Group is the leader of lignite mining (its share in the extraction market of this raw material accounting for 87%<sup>6</sup> of domestic extraction), it is also the largest generator of electricity as it generates approx. 43%<sup>7</sup> of domestic gross electricity production (including approx. 42%<sup>8</sup> by Conventional Generation) and largest heat producer. The generation is based on lignite extracted from mines owned by the company as well as hard coal, gas and biomass.

Diagram: Main assets of the Conventional Generation segment.



<sup>6</sup> Own calculations based on data from Central Statistical Office for 2018.

<sup>7</sup> Own calculations based on data from ARE for 2018.

<sup>8</sup> Own calculations based on data from ARE for 2018.

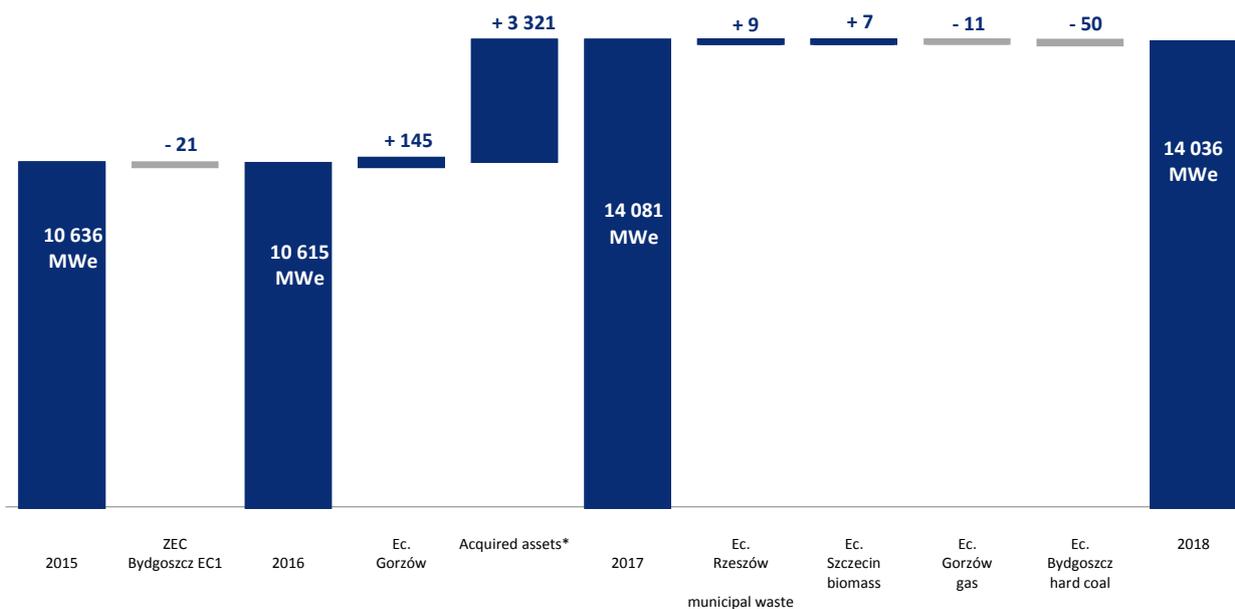
**Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018**

Table: Installed capacity and production in Conventional Generation segment.

Main fuel types	Annual electricity generation (TWh)		Annual heat generation (TJ)		Installed capacity (MWe)	Installed capacity (MWt)
	2018	2017	2018	2017	2018	2018
	Hard coal	11.99	11.02	8.05	8.31	3 176
Lignite	38.98	39.05	3.18	3.20	6 836	726
Gas	2.41	2.62	6.24	6.32	611	1 460
Biomass	0.30	0.33	0.83	0.81	83	179
Municipal waste	0.01	0.00	0.05	0.00	9	28
<b>TOTAL PGE GiEK S.A.</b>	<b>53.69</b>	<b>53.02</b>	<b>18.35</b>	<b>18.64</b>	<b>10 715</b>	<b>3 811</b>
Hard coal *	8.67	10.10	28.78	29.26	3 014	4 267
Gas*	1.71	1.61	4.05	3.58	307	687
Biomass*	0.02	0.04	0.00	0.00	0	0
<b>TOTAL Acquired assets* (full year)</b>	<b>10.40</b>	<b>11.75</b>	<b>32.83</b>	<b>32.84</b>	<b>3 321</b>	<b>4 954</b>
<b>including Acquired assets from November 14, 2017</b>	<b>-</b>	<b>1.58</b>	<b>-</b>	<b>7.00</b>	<b>-</b>	<b>-</b>
<b>TOTAL Conventional Generation</b>	<b>64.09</b>	<b>54.60</b>	<b>51.18</b>	<b>25.64</b>	<b>14 036</b>	<b>8 765</b>

\*The units' volumes for 2017 are on a pro-forma basis and are presented for illustration purposes in order to adequately show the scale of the acquired assets in comparison with PGE GiEK S.A.'s generating units (without the distortion related to proportional recognition in annual results). Acquired assets: Rybnik power plant, Gdańsk CHP, Gdynia CHP, Kraków CHP, Wrocław CHP, Czechnica CHP, Zawidawie CHP, Zielona Góra CHP, Toruń CHP.

Diagram: Change of installed capacity in Conventional Generation.



\*PGE Energia Ciepła S.A., PGE Toruń S.A., PGE Gaz Toruń sp. z o.o., EC Zielona Góra S.A., Kogeneracja S.A.

## LIGNITE MINING

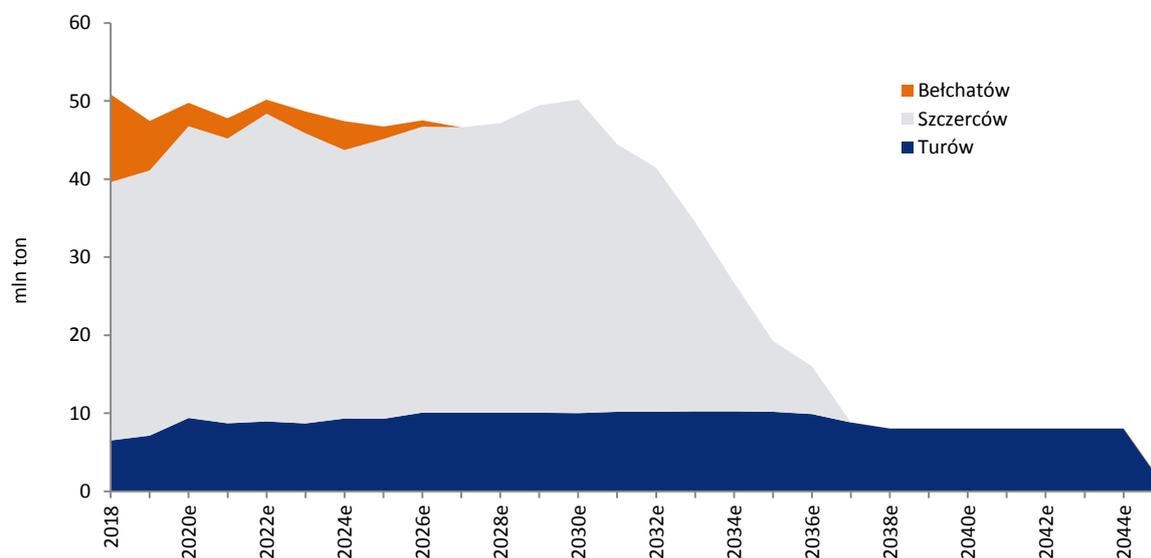
### Lignite resources

Lignite deposit reserves are determined based on a reserves inventory maintained in the reserves register for a given year up to February 28 as at December 31 of a preceding year (art. 101 p. 3 of the Geological and Mining Act). The following table presents lignite reserves as of the end of 2018, together with volumes extracted in 2018.

Table: Lignite resources data as at the end of 2018 and lignite output in 2018.

Deposit	Resources - as at the end of 2018		Output in 2018
		(Mg million)	(Mg million)
Bełchatów – Field Bełchatów	Industrial	24.84	11.23
Bełchatów – Field Szczerców	Industrial	663.81	33.08
Turów	Industrial	294.70	6.53

Diagram: Lignite extraction (tonnes million).



## KEY FACTORS FOR THE RESULTS OF THE SEGMENT

Chart: Key changes of recurring EBITDA in Conventional Generation (in PLN million) – managerial perspective.



	EBITDA 2017	Electricity production difference in price	Electricity production difference in volume	Result on the optimization of the electricity trade	Revenues from agreement with TSO	Costs of fuel	Costs of CO <sub>2</sub>	Cost of repair services	Other	Capitalised costs	EBITDA Acquired assets*	EBITDA 2018
<b>Odchylenie</b>		<b>730</b>	<b>106</b>	<b>-268</b>	<b>-53</b>	<b>-230</b>	<b>-389</b>	<b>-66</b>	<b>-183</b>	<b>100</b>	<b>589</b>	
Reported EBITDA 2017	4 099											
One-offs 2017	1 206											
Recurring EBITDA 2017	2 893	8 514	243	289	1 950	1 171	600			896	181	
Recurring EBITDA 2018		9 350	-25	236	2 180	1 560	666			996	770	3 229
One-offs 2018												-291
Reported EBITDA 2018												2 938

\*PGE Energia Ciepła S.A., PGE Toruń S.A., PGE Gaz Toruń sp. z o.o., EC Zielona Góra S.A., Kogeneracja S.A.

One-offs which reduce EBITDA reported in 2017

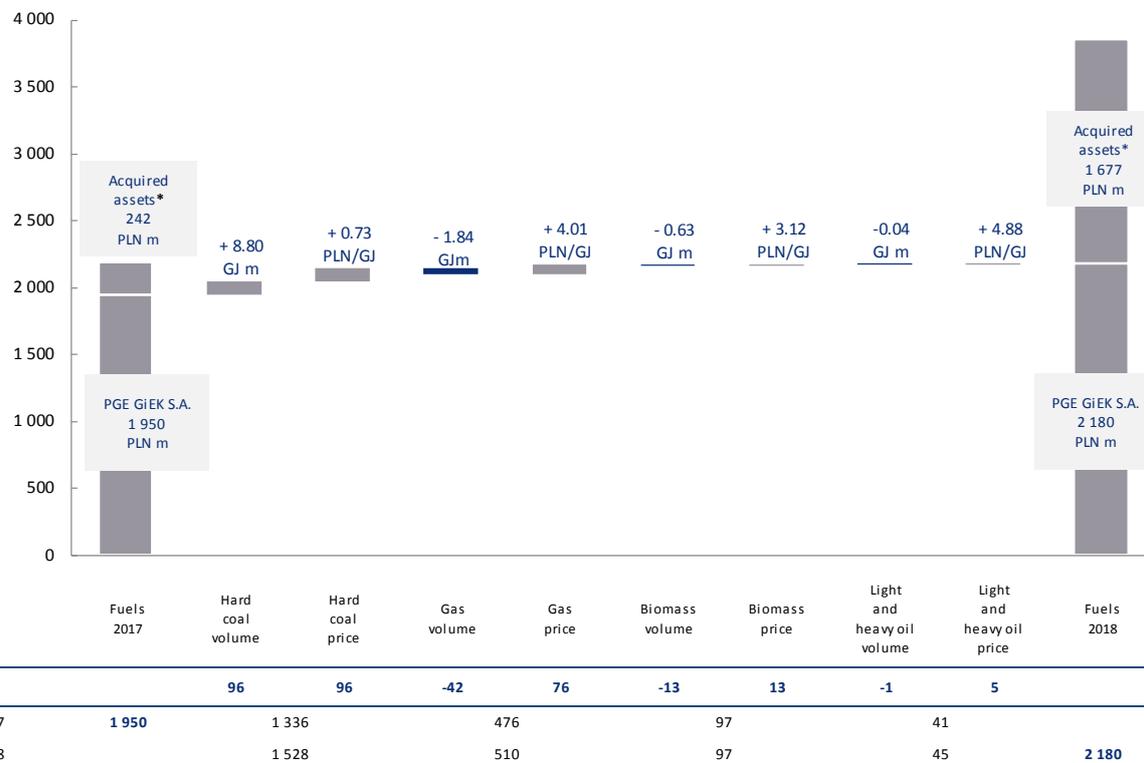
One-offs which increase EBITDA reported in 2018

Key factors affecting the recurring EBITDA result of Conventional Generation segment in 2017 on y/y basis included:

- **Increase in electricity sales prices**, which caused an increase in revenue from sales. (see p. 4.2 of this report).
- **Higher electricity production volume** in PGE GiEK S.A. by 0.66 TWh, due to higher degree of use of units by PSE S.A. resulting from increased demand in NPS and lower wind generation, with lower repairs at centrally dispatched generation units by 8 189h (see p. 5.3 of this report).
- **Lower result on optimisation of electricity portfolio**, due to lower margin realized on electricity trading by PLN 41/MWh as a result of higher purchase price of electricity mainly caused by higher prices of CO<sub>2</sub> emission rights (impact on result PLN -383 million) with the higher volume of electricity trading by 3 TWh (impact on result PLN +115 million).
- **Lower revenues from ancillary control services**, mainly lower revenues from Operational Capacity Reserve (“OCR”) due to lower volume of OCR in Opole and Dolna Odra power plant due to higher trading factor of those power plants.
- **Higher fuel consumption costs**, mainly hard coal, what was caused by the higher prices of that raw material on the domestic and international market, what directly translated into higher contractual prices, and higher production based on this fuel. Main changes on different types of fuel are presented on the chart below.
- **Higher CO<sub>2</sub> costs** as a result of higher price of allowances. This effect was accelerated by unfavourable impact of lower allocation of allowances granted free of charge and higher emission of CO<sub>2</sub> resulting from increased production.
- **Higher repairs expenses** mainly as a result of higher number of tasks pursued.
- **Higher capitalised costs**, mainly as a result of greater involvement of own services into investment execution. The above effect was offset by lower capitalisation of overburden removal costs in mines due to lower N:W ratio (mainly due to significantly higher growth of lignite mined in relation to growth of overburden mining in Szczerców field).
- **Difference on EBITDA generated by the Acquired assets in 2018** as compared to the result achieved in the period subject of consolidation in 2017, i.e. from November 14, 2017 until December 31, 2017.

The reported EBITDA was also impacted by one-offs: LTC compensations, change in reclamation provision and change in actuarial provision.

Chart: Costs of production fuels consumption in Conventional Generation (in PLN million).



\*PGE Energia Ciepła S.A., PGE Toruń S.A., PGE Gaz Toruń sp. z o.o., EC Zielona Góra S.A., Kogeneracja S.A.

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Table: Data on use of production fuels consumption in Conventional Generation.

Fuel type	2018		2017	
	Volume (tons ths)	Cost (PLN million)	Volume (tons ths)	Cost (PLN million)
Hard coal	5 846	1 528	5 565	1 336
Gas (cubic metres ths)	652 015	510	683 985	476
Biomass	421	97	518	97
Fuel oil – light and heavy	27	45	28	41
<b>TOTAL PGE GiEK S.A.</b>		<b>2 180</b>		<b>1 950</b>
Hard coal	5 240	1 321	835	184
Gas (cubic metres ths)	484 671	317	72 865	51
Biomass	38	7	11	2
Fuel oil – light and heavy	17	32	3	5
<b>TOTAL Acquired assets*</b>		<b>1 677</b>		<b>242</b>
Hard coal	11 086	2 849	6 400	1 520
Gas (cubic metres ths)	1 136 686	827	756 850	527
Biomass	459	104	529	99
Fuel oil – light and heavy	44	77	31	46
<b>TOTAL Conventional Generation</b>		<b>3 857</b>		<b>2 192</b>

\*PGE Energia Ciepła S.A., PGE Toruń S.A., PGE Gaz Toruń sp. z o.o., EC Zielona Góra S.A., Kogeneracja S.A. Data for 2017 cover period from November 14, 2017.

Table: Availability and capacity factors in Conventional Generation.

	2018	2017	2016	2015
<b>Availability*</b>				
Power plants - lignite	82.9%	86.9%	85.6%	84.9%
Power plants – hard coal	84.8%	81.0%	89.3%	88.1%
CHP	75.9%	80.6%	89.0%	89.6%
<b>Capacity factor*</b>				
Power plants - lignite	75.5%	75.3%	71.8%	71.8%
Power plants – hard coal	52.0%	47.4%	51.5%	48.3%
CHP	42.8%	45.1%	47.4%	49.3%

\* Without units no. 1-2 in Dolna Odra power plant (cold reserve) and unit no. 1 in Bełchatów power plant (peak reserve unit). Ratios for 2017-2018 include the Acquired assets (full year 2017, i.e. without distortion connected with the proportional recognition in the annual results). Data for 2015-2016 do not include the Acquired assets.

## CAPITAL EXPENDITURES

Table: Capital expenditures incurred in Conventional Generation segment in 2018 and 2017.

PLN million	2018	2017	% change
Investments in generating capacities, including:	3 961	4 238	-7%
■ Development	2 353	2 963	-21%
■ Modernisation and replacement	1 608	1 275	26%
Other	132	127	4%
Acquire assets*	533	168	217%
<b>TOTAL</b>	<b>4 626</b>	<b>4 533</b>	<b>2%</b>
Capitalised costs of overburden removal in mines	269	366	-27%
<b>TOTAL with capitalized costs of overburden removal</b>	<b>4 895</b>	<b>4 899</b>	<b>0%</b>

\*PGE Energia Ciepła S.A., PGE Toruń S.A., PGE Gaz Toruń sp. z o.o., EC Zielona Góra S.A., Kogeneracja S.A. Data for 2017 as from November 14, 2017.

## KEY DEVELOPMENTS IN 2018 IN THE CONVENTIONAL GENERATION SEGMENT

Key development investments:

- Construction of cooling towers for units 5 and 6 at Opole power plant was completed in February 2018.
- In October 2018 an annex no. 9 to the agreement for construction of units no. 5 and 6 in Opole power plant, that extends the construction time, for unit 5 to June 15, 2019 and for unit 6 to September 30, 2019.
- In October 2018, a permit for use was secured for a thermal waste processing installation with energy recovery at the CHP Rzeszów, which was subsequently put into service and received the status of regional installation
- A boiler pressure test was successfully conducted for unit 7 at Turów power plant in November 2018.
- In December 2018, the boiler at unit 5 at Opole power plant was fired up using coal, while in January 2019 the first synchronisation with the national power system took place.

Key modernisation investments related to emission reductions:

- An SCR installation for unit A at the Pomorzany plant was put into service in April 2018.
- In May 2018, agreements were executed with contracts to build sealed lid for flue gas desulphurisation systems at units 2 and 5-11, expand the limestone mill room and adapt units 12 and 14 to BAT requirements as regards mercury and ammonia emissions at the Bełchatów power plant.
- In May-September 2018, agreements were executed with contractors for a limited modernisation of unit 2 at the Bełchatów power plant.
- In June 2018, agreements were executed with contractors to modernise electrostatic precipitators for units 1-4 and reduce NOx emissions to below 150 mg/Nm<sup>3</sup> for units 1, 2 and 4 at the Opole power plant, in order to adapt it to BAT conclusions.
- In June 2018, once modernisation works were completed, unit 2 at the Turów power plant was launched and synchronised with the grid.
- In July 2018, agreements were executed with contractors for flue gas desulphurisation systems for units 3-6 at the Bełchatów power plant.
- In September 2018, an agreement was signed to deliver and assemble a catalytic flue gas denitrification system for OP-650 boilers for units 5, 6, 7 and 8 at the Dolna Odra plant.

## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

### KEY PROJECTS IN 2018

Aim of the project	Budget (net, without costs of financing)	Capital expenditures incurred so far (net, without costs of financing)	Capital expenditures in 2018 (net, without costs of financing)	Fuel/ Net efficiency	Contractor	Expected date of completion	Status
<b>Construction of new units in Opole power plant</b>							
<b>Construction of two power units of 900 MW each</b>	PLN 10.94 billion	PLN 9.19 billion	PLN 0.88 billion	Hard coal/ 45.5%	Syndicate of companies: Rafako, Polimex-Mostostal and Mostostal Warszawa with co-operation of GE as Project manager on behalf of the syndicate	unit 5 – <b>June 15, 2019</b> ; unit 6 – <b>September 30, 2019</b> .	A hot start-up of unit 5 is ongoing. The first coal was fired in the boiler 5 in December 2018. The first synchronisation with the NPS took place in mid-January 2019 and on February 7, 2019 unit no. 5 for the first time achieved 930 MW, exceeding its contracted installed. As regards unit 6, final assembly works are under-way and equipment and systems are being started. General Contractor plans combustion of boiler 6 for the first week of April 2019. Overall work progress on this project at the end of December 2018 was approx. <b>96%</b> .
<b>Construction of new unit in Turów power plant</b>							
<b>Construction of power unit with a capacity of 490 MW</b>	PLN 3.98 billion	PLN 2.59 billion	PLN 1.03 billion	Lignite/ 43.1%	syndicate of companies: MHPSE, Budimex and Tecnicas Reunidas	<b>H1 2020.</b>	<b>In the fourth quarter of 2018</b> , a boiler pressure test was successfully conducted. Assembly works in the machine room and boiler room continue at the construction site. Assembly of steam pipelines and turboset support systems is on-going. Assembly works on installations outside of the unit were continued. Painting the internal surface of cooling tower was completed. Assembly of bays in the coal-feed system was continued. Cable laying is taking place at the unit's control building.
<b>Construction of a Thermal Processing Installation with Energy Recovery at Rzeszów CHP</b>							
<b>Construction of a thermal processing installation with energy recovery at Rzeszów CHP with capacity of approx. 8 MWe in condensation (approx. 4.6 MWe + 16.5 MWt in co-generation)</b>	PLN 293 million	PLN 290.2 million	PLN 172.7 million	Municipal waste/ 86%	TM.E. S.p.A. Termomeccanica Ecologia and Astaldi S.p.A.	According to the contract the installation was to be commissioned in <b>June 2018</b> , finally it was commissioned at the end of <b>October 2018</b> .	The investment is <b>completed. On October 26, 2018</b> , the installation received a use permit and was commissioned. Through a resolution of the Podkarpace Voivodship Assembly, the installation was given the status of a regional communal waste processing installation.

## RESPONSIBLE APPROACH TO NATURAL ENVIRONMENT

Companies in the Conventional Generation segment responsibly use natural resources while conducting operations in accordance with the existing legal regulations and requirements, including environmental protection standards. The Conventional Generation area is constantly improving its environmental performance and is more effective every year.

### The environmental management system

Branches of PGE GiEK and PGE EC have applied Integrated Management System Model, which covers among other things an Environment Management System in accordance with PN-EN ISO 14001. This is an internationally recognised standard that sets out the methods for implementing effective environment management systems. The main objective of the ISO 14001 standard is contributing to protecting the environment and preventing pollution in a manner that takes into consideration both social and economic needs in line with the idea of sustainable development.

The concept of a unified Environment Management System is intended to harmonise documentation and improve effectiveness of managing the environmental protection area. This includes, among other things, central management of environmental aspects across all of the branches of the companies. This documentation is subject to updating during cyclical reviews.

Audits re-certifying the environmental management systems at PGE GiEK and PGE Energia Ciepła branches and companies took place in 2018, confirming compliance with the ISO PN-EN 14001:2015 standard. The audit results showed that both the developed regulations and the actions taken within the environmental management system are compliant with the standard's requirements and represent good practices that raise operational performance.

Additionally at the company's branches: Zespół Elektrowni Dolna Odra and Opole power plant, and at PGE Energia Ciepła S.A. Branch Wybrzeże in Gdańsk, an eco-management and audit system (EMAS PI:2999) is in place, which together with an environmental declaration was subject to review in 2018 by an accredited independent reviewer in accordance with new requirements. Registration in the EMAS system means compliance with the highest standards in environmental management and audit.

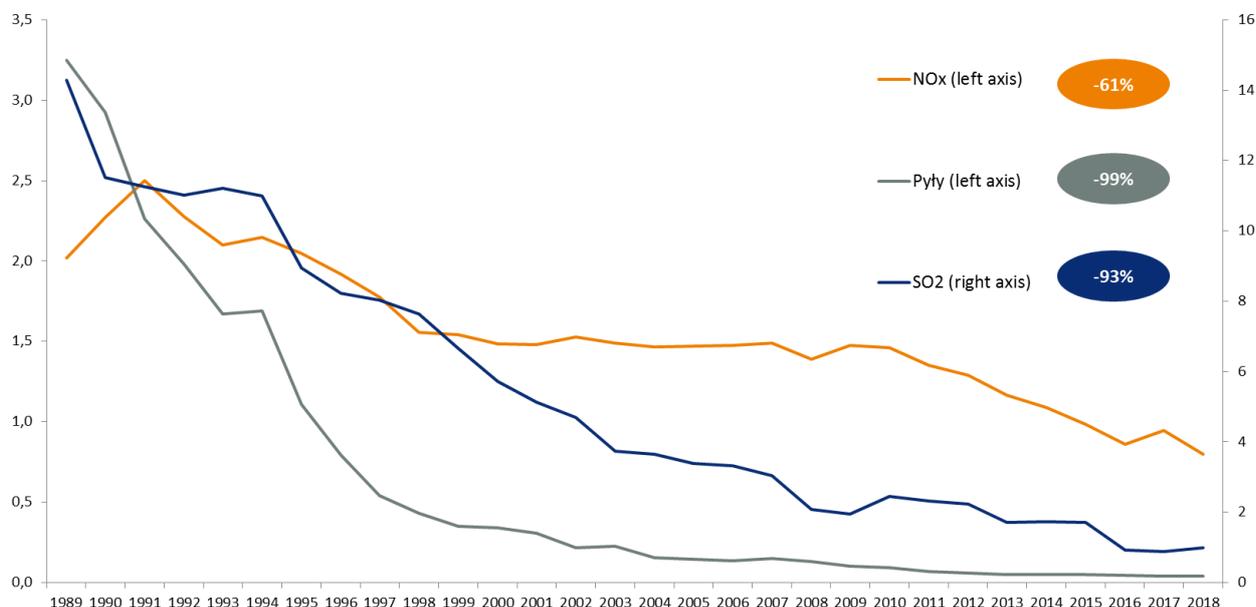
### Air protection

The production of electricity and heat from fossil fuels has an impact on the quality of air, which is why PGE Group places strong emphasis on minimising emissions and avoiding the most harmful ones.

Installations of PGE GiEK and PGE EC operate in line with emission standards set out in the IED Directive or use the derogation mechanisms provided therein. Derogation is intended to give existing installations additional time to technically adapt to the more rigorous emission requirements specified in the IED or exempt them from the requirement to observe these if modernising such a facility would be unjustified due to a limited expected lifecycle. Regardless of the permissible norms, PGE Group strives to meet the highest standards and that's why we began an adaptation programme for BAT standards, taking into account the best available technologies.

Due to consistent pro-environmental investments, the Group's generation assets systematically lower emissions of NO<sub>x</sub>, SO<sub>x</sub> and dust in the air. In 1989-2018, the Group's power plants: Bełchatów, Opole, Turów, Dolna Odra and Rybnik, reduced emissions as follows: SO<sub>2</sub> by 93%, NO<sub>x</sub> by 61 %, particulate matter by 99%.

Diagram: Emission of NO<sub>x</sub>, SO<sub>2</sub> and particulates into the air (in kg/MWh) in the Group's power plants.



### CO<sub>2</sub> emissions

The third settlement period within the EU ETS (Emissions Trading System), covering years 2013-2020, began in 2013. During this period, rules for allocating free allowances for CO<sub>2</sub> emissions to all EU ETS participants changed, in particular for producers of electricity and heat. As a rule, starting from 2013, each subsequent year of the third settlement period is a line decline of the number of free CO<sub>2</sub> emission allowances allocated to installations.

It is estimated that PGE GiEK S.A. installations will receive a total of 145 296 727 allowances during the 2013-2020 period, including:

- 7 301 373 allowances for heat production,
- 137 995 354 allowances for electricity production (without allowances for new capacities).

It is estimated that PGE EC S.A. installations will receive a total of 42 938 820 allowances during the 2013-2020 period, including:

- 10 505 171 allowances for heat production,
- 32 433 649 allowances for electricity production (without allowances for new capacities).

The volume of free allowance in PGE GiEK and PGE EC constitutes approx. 30% of companies' installations needs.

The volume of CO<sub>2</sub> emissions for 2018 in installations of PGE GiEK (not verified yet) amounts to 58 916 246 tons. Based on the balance of allowances and actual CO<sub>2</sub> emissions, a shortage of 46 839 067 allowances exists. This shortage is compensated through the purchase of allowances on the market.

The volume of CO<sub>2</sub> emissions for 2018 in PGE EC S.A. (not verified yet) amounts to 11 269 883 tons. Based on the balance of allowances and actual CO<sub>2</sub> emissions (not verified), a shortage of 9 276 706 allowances exists. This shortage is compensated through the purchase of allowances on the market.

A breakdown of CO<sub>2</sub> emissions in main installations of Conventional Generation is presented in p. 6.7 Selected indicators in environmental issues in PGE Capital Group of PGE Group's report on non-financial data for 2018.

### Management of waste and by-products

Waste is mainly produced directly in combustion processes or in ancillary processes to the generation of electricity and heat.

PGE Group companies are consistently improving and expanding the scale of application for their combustion waste. Very good economic results from the use of these substances are generated as regards ash and slag from hard coal combustion and gypsum from flue gas desulphurisation. The economic effects of ash from lignite combustion may still be increased. The lower share in

industrial use of limestone ash from lignite combustion has to do with its chemical and physical properties and considerable price volatility. The scale of use for such waste is also of significance. The use of such waste is determined also by the use of mainly ash from hard coal combustion, which features much better properties and outperforms combustion waste from lignite firing.

Over 7 million tonnes of combustion waste was generated at PGE GiEK's installations in 2018. Approx. 560,000 tonnes of combustion waste was generated at PGE EC's installations.

Waste from lignite combustion account for more than 90% of all combustion waste produced in PGE GiEK. The specific properties of ashes from lignite combustion and the high variability of their parameters limit the potential for the commercial use of these substances. This results in the necessity to deposit them at storage sites (Bełchatów power plant) or filling unused transformed land therewith. Such recovery process is being applied at Turów power plant, where waste is deposited together with overburden at the landfill of the mine KWB Turów (lignite mine).

Combustion waste from burning hard coal, given their attractive properties, have a range of applications in the cement industry, construction and road building. Some of this waste is deposited at combustion waste landfills or temporarily at waste warehouses. Approx. 600,000 tonnes of hard coal-combustion waste was generated at PGE GiEK's installations and approx. 560,000 tonnes of hard coal-combustion waste was generated at PGE EC's installations.

A significant portion of the ash generating in hard coal and lignite firing as well as part of the synthetic gypsum are generated as a by-product and are not classified as waste. In 2018, PGE GiEK created 1.5 million tonnes of by-product, including approx. 800,000 tonnes of by-product from hard coal firing, approx. 400,000 tonnes of by-product from lignite firing and approx. 300,000 tonnes of by-product from flue gas desulphurisation. PGE EC and Kogeneracja S.A. identified approximately 1.5 million tons of by-products from coal combustion, specifically 1 073 000 tonnes of ash and 225 000 tonnes of slag and 189 000 tonnes of gypsum.

A breakdown of the total weight of waste generated by companies of PGE Group's Conventional Generation segment (PGE GiEK and PGE EC) is presented in p. 6.7 Selected indicators in environmental issues in PGE Capital Group of PGE Group's report on non-financial data for 2018.

#### Management of waste water

Conditions for managing waste water are specified in relevant permits, including in particular integrated permits and water-law permits. In branches of PGE GiEK and PGE EC monitoring is conducted on an on-going basis as regards the quantity and quality of water collected and waste discharged.

For technological purposes, in PGE GiEK water is collected from groundwater. At PGE EC, water for technological purposes is collected from surface waters, groundwater or water-supply networks, depending on location. In order to limit the quantity of raw water consumption, closed-circuits are used, and old technological water and waste water are used in other processes. Waste water created as a result of power plant and heat-and-power plant production activities is subject to a purification process, including multi-stage cleansing, and subsequently discharged to groundwater or transferred to municipal companies.

Mining of lignite in an open-pit mine, which takes place at two PGE GiEK S.A. lignite mines – Bełchatów and Turów, requires the rockmass to be initially dewatered, which has substantial impact on hydrogeological conditions. Water management at lignite plants is related to dewatering both inside the rockmass and at the surface of the pit. Water from the pit is taken out to field reservoirs, the task of which is final purification of water through natural sedimentation of suspensions, assisted by plant filters. Once the water is purified, it is at least class II in purity terms.

A breakdown of the overall volume of waste water generated by companies of PGE Group's Conventional Generation segment (PGE GiEK and PGE EC) is presented in p. 6.7 Selected indicators in environmental issues in PGE Capital Group of PGE Group's report on non-financial data for 2018.

#### Reclamation of adversely transformed land

Post-mining areas that are no longer used for deposit mining and storing overburden are subject to on-going reclamation during the entire period of mining activity in accordance with conditions specified by the proper environment protection authorities. In the light of existing legal regulations (Act on protection of farming and forest land, Geological and mining law), post-mining terrain must be rehabilitated, and the rehabilitation requirement applies to the natural or legal persons who remove such land from production and cause it to lose value.

Reclamation performed at the Conventional Generation segment consists of returning useful and natural values of land (as close to natural as possible). Land reclamation is performed through technical reclamation (land shaping and construction of essential technical infrastructure) and biological reclamation (ground preparations, introduction and maintenance of plants). Rehabilitation

of sites significantly reduces fugitive emissions (for example particulates from landfills or heaps) and improves the quality of water being discharged into surface water reservoirs. Within Conventional Generation segment large-scale reclamations are mainly being conducted within the following open-pit lignite mines: KWB Turów and KWB Bełchatów.

Large-scale production entails substantial obligations towards the natural environment. Years of experience and the implementation of innovative and effective eco-friendly technological solutions allows to significantly mitigate the effects of lignite mining. Reclamations conducted thus far have given rise to vast forest and water complexes where many animal and plant species are present. Already in the near future, the main reclamation task for the KWB Bełchatów will be the reclamation of both end-excavations in the water direction and the creation of a landscape with a large leisure complex. This undertaking will reach the scale of the difficulties which have no equivalent in our country. Targeted reclamation activity of this mine will be determined by need of water filled reclamation of the excavation. Therefore, research, design and implementation works in this direction are carried out well in advance of the end of exploitation date, and in the first place relate to the nearby post-exploitation excavation of the Bełchatów Field, although water reclamation will be possible only for both end excavations at the same time.

#### Mitigation of noise emissions

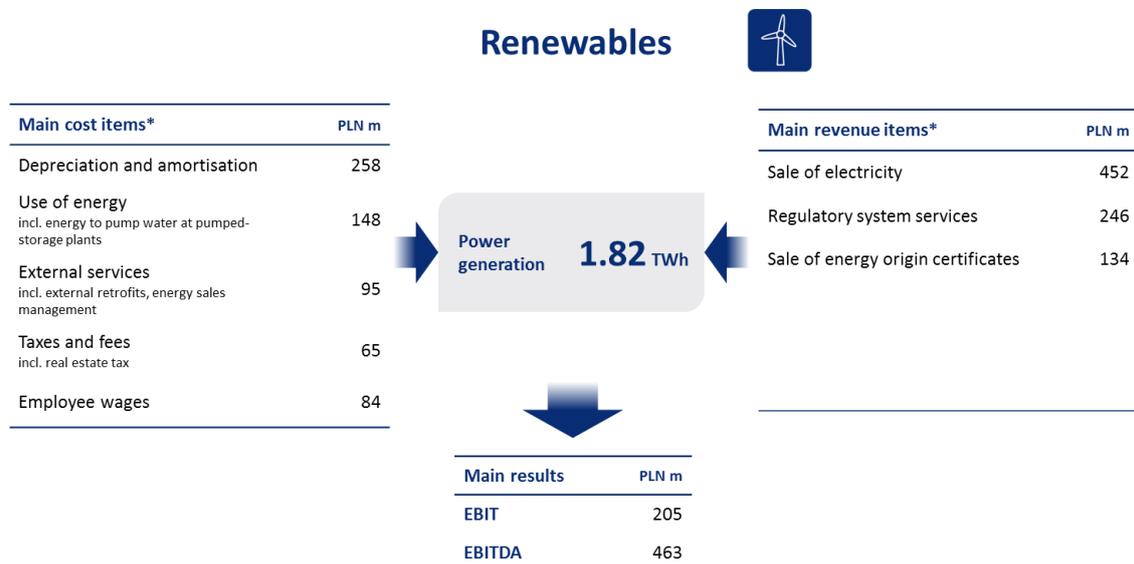
PGE GiEK and PGE EC are in continuous operation. Permitted level of noise emissions to the environment is determined in law and permits issued for the companies. Noise emission measurements are performed every two years or ad hoc upon request or complaint by external entities.

Noise emission measurements taken in 2018 in branches of PGE GiEK (Gorzów CHP, Rzeszów CHP, Zgierz CHP, Bydgoszcz CHPs, Turów power plant, Opole power plant, Bełchatów power plant and ZEDO) and branches and subsidiaries of PGE EC did not show breaches of permissible noise emission levels. Measurements taken in 2018 within the impact areas of lignite mines (KWB Turów, KWB Bełchatów) did not show any larger breaches. In one case at KWB Bełchatów, the terms of a decision regarding permissible noise at night were breached. In order to further reduce noise emissions on the areas of the open pit mines, the steel idlers are continuously being replaced with silent idlers.

## RENEWABLES

### Segment description and its business model

This segment is involved in the generation of electricity from renewable sources and in pumped storage plants.



\* in accounting terms.

The Renewables segment is mainly based on revenue from the sale of electricity, however contrary to production at industrial plants within the Conventional Generation segment, this revenue is subject to a larger degree to changes in weather conditions and prices on the spot market due to the renewables sales model in place. Electricity output volume translates into property rights (green) and revenue from the sale of energy origin certificates obtained by the segment's assets, excluding hydropower plants over 5 MWe.

A stable part of the segment's results is related to the provision of system services using pumped-storage plants, which is performed on the basis of an agreement with the transmission system operator, PSE S.A.

On the cost side, the most important items include: depreciation of segment assets, use of energy to pump water at pumped-storage plants and third-party services, mainly in the form of repair services. Property tax and employee wages also constitute a significant cost item in this segment.

### Assets

The PGE Capital Group's operations in renewable energy are managed by the PGE Energia Odnawialna S.A. Assets in the segment include:

- 14 wind farms,
- 1 photovoltaic power plant,
- 29 run-of-river hydro power plants,
- 4 pumped-storage power plants, including 2 with natural flow.

Diagram: Main assets of the Renewables segment.

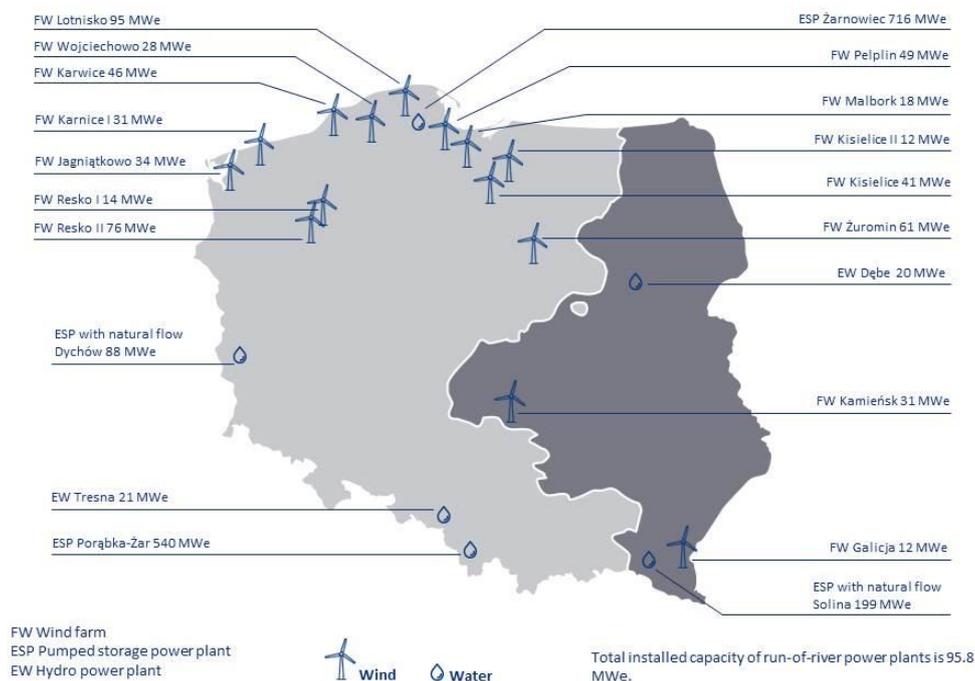
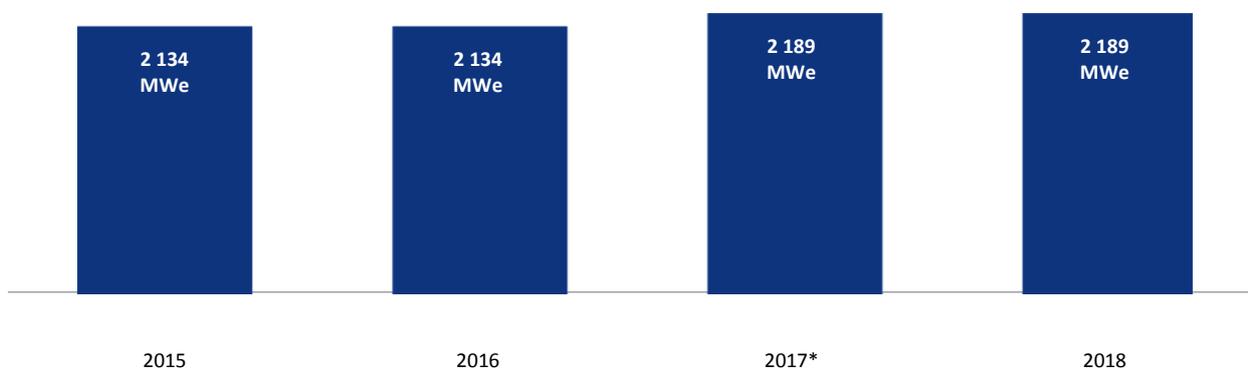


Table: Installed capacity and production in power plants of Renewables segment.

Types of power plants	Annual energy generation (GWh)		Installed capacity (MWe)
	2018	2017	2018
Run-of-river hydro power plant	241.79	330.35	95.76
pumped-storage power plants	388.68	438.84	1 256.00
pumped-storage power plants with natural flow*	134.55	141.73	286.64
Wind farms	1 063.33	1 284.16	549.98
PV	0.58	0.52	0.60

\*including generation from pump-storage cycle of 5.0 GWh and generation from natural flow of 129.5 GWh. Total generation from pump-storage cycle in 2018 amounted to 393.7 GWh and generation from water totalled 371.3 GWh.

Diagram: Change in installed capacity in Renewables segment.



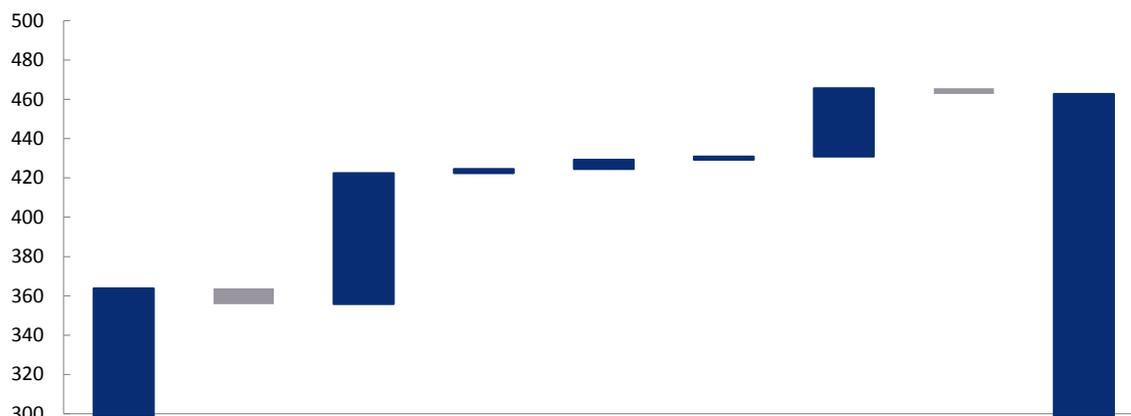
\* Increase of installed capacity in 2017 was caused by the decision of the ERO President changing concessions for electricity. The change consisted of correction of installed capacities of the generation sources.

Table: Availability and capacity factor in Renewables.

	2018	2017	2016	2015
<b>Availability</b>				
Run-of-river hydro power plants	86.2%	92.0%	93.2%	95.7%
Wind farms	97.4%	97.4%	97.8%	97.9%
<b>Capacity factor</b>				
Run-of-river hydro power plants	29.5%	38.1%	36.7%	29.4%
Wind farms	23.7%	29.4%	25.2%	28.9%

## KEY FACTORS FOR THE RESULTS OF THE SEGMENT

Chart: Key changes of EBITDA in Renewables (in PLN million) – managerial perspective.



	EBITDA 2017	Electricity revenues - wind	Certificates revenues - wind	Electricity revenues - hydro	Certificates revenues - hydro	Revenues ancillary control services*	Costs	Other	EBITDA 2018
<b>Change</b>		-8	67	2	5	2	35	-4	
EBITDA 2017	364	214	58	83	4	244	305		
EBITDA 2018		206	125	85	9	246	270		463

\* Excluding revenues and costs relating to Balancing market not affecting EBITDA result.

Key factors affecting the results of Renewables in 2018 y/y were:

- **Decrease in revenues from electricity sales from wind farms** resulting mainly from decreasing electricity sales volume by 273 GWh, connected with less favourable wind conditions in February and in period May-December 2018.
- **The increase of revenues from sales of certificates from wind farms** resulting from: (i) realised sales of certificates and revaluation of inventories, what attributed to the increase of revenues by approx. PLN (+) 35 million; (ii) valuation of certificates at a price approx. PLN 43/MWh higher in 2018, which increased revenue y/y by approx. PLN (+) 32 million, at the same time with the lower production of certificates by approx. 221 GWh due to less favourable wind conditions in February and in period May-December 2018;
- **The increase of sales revenues of electricity from hydro power plants** mainly due to sale price higher by PLN 48/MWh y/y.
- **The increase of revenues from sales of certificates from hydro power plants** resulting from: (i) valuation of ongoing production of certificates at a price higher by approx. PLN 51/MWh in 2018 what attributed to the increase of revenues y/y by approx. PLN (+) 4 million; (ii) realised sales of certificates and revaluation of inventories, what attributed to the increase of revenues by approx. PLN (+) 1 million.
- **Higher sales revenues from ancillary control services** result mainly from valorisation of remuneration for services provided by pumped storage power plants, in accordance with the provisions of the contract.
- **Decrease in costs** results mainly from mainly from a correction of property tax concerning wind farms due to changes in legislation.

## CAPITAL EXPENDITURES

Table: Capital expenditures incurred in Renewables segment in 2018 and 2017.

PLN million	2018	2017	% change
Investments in generating capacities, including:	96	75	28%
■ Development	18	22	-18%
■ Modernisation and replacement	78	53	47%
Other	7	6	17%
<b>TOTAL</b>	<b>103</b>	<b>81</b>	<b>27%</b>

## RESPONSIBLE APPROACH TO NATURAL ENVIRONMENT

PGE Group is the leader in producing electricity from renewable sources in Poland, with an approx. 9% market share. The energy produced in the Renewables segment could not be produced without natural resources: water, wind and sun. Taking this into account, PGE Group in its daily activities follows a responsible approach to the environment, in which segment's assets operate and uses resources in rational way – especially water, that drives the turbines of hydro power plants and pumped storage power plants.

### Segment's generation sources

Investing in renewable sources since 2007, the wind asset portfolio currently has approx. 550 MWe. The renewable energy segment's assets include the largest pumped storage plants in Poland that contribute to system stability during peak demand for electricity as well as numerous run-of-the-river hydro-power plants. Aside from generating clean and ecological energy, PGE Group's hydroelectricity assets, which have their own reservoirs, play a very important role in flood control. They can divert and smooth out flood waves in rivers and thus control their safe discharge in volumes that cause no losses or damages. Water storage at hydro-power plants' reservoirs is also of key significance during draught. By supplying additional water to rivers, they support local fauna and flora. In addition, the operation of turbines adds oxygen to the water, which has a positive impact on the entire ecosystem. All hydro-power assets in the renewable energy segment have modernised installations that have no adverse effect on waters and do not change their physical and chemical properties, e.g. temperature.

PGE Energia Odnawialna runs monitoring of birds and bats on its wind farms. Aim of this research is determination of real impact of wind farm operations on animals. Constructions of towers and wind turbines are also used – they prevent from nesting, and special marking on ends of windmill blades, which allow to see potential obstacles.

Renewables segment companies pursue investments that focus on maintaining riverbeds, participating in the costs being incurred by river administrators and participating in the costs of restocking, which is a way of compensating for making fish migration more difficult on account of damming facilities being built across rivers. In accordance with environmental protection requirements, PGE Energia Odnawialna builds hydro-technical fish ladders at its facilities - their task is to make it possible for fish and invertebrates to safely and comfortably migrate. Another one was built in 2018, at the Krzywaniec barrage.

A breakdown of the data on waste water generated by PGE EO is presented in PGE Group's report on non-financial data for 2018 in chapter 6.7 Selected indicators in environmental issues in PGE Capital Group.

### Environmental development projects

The Renewables segment is also implementing development projects that focus on the use of wind energy, water energy - also offshore - and photovoltaics. According to PGE Group's strategy, PGE plans to achieve a 25% share of the domestic renewables market by 2030. Development investments in this and other areas take into account the present economic situation.

One of PGE Group's strategic options is to build offshore wind farms. PGE aspires to build approx. 2.5 GW of installed capacity in offshore wind farms in the Baltic Sea by 2030. This aim will depend on the final version of Poland's energy policy. This project is to be developed in the southern part of the Baltic Sea, approx. 30 km from the coastal towns of Ustka, Łeba and Władysławowo. This investment will be an important development impulse for Poland. Gdańsk, Gdynia, Szczecin and Świnoujście can become the main construction centres for offshore energy in the southern section of the Baltic Sea, while Łeba, Ustka and Darłowo can become important service hubs.

PGE Group is currently conducting a two-year wind measurement campaign in the Baltic Sea and is awaiting an environmental decision. Subsidiaries Baltica 2 and Baltica 3 have obtained terms for grid connection from PSE (approx. 2.5 GW of installed capacity). Works on securing the connection path on land are also under-way, and rights to properties are being secured. Preliminary geological and geotechnical surveys will be conducted in the nearest future in order to select the optimal type of foundation.

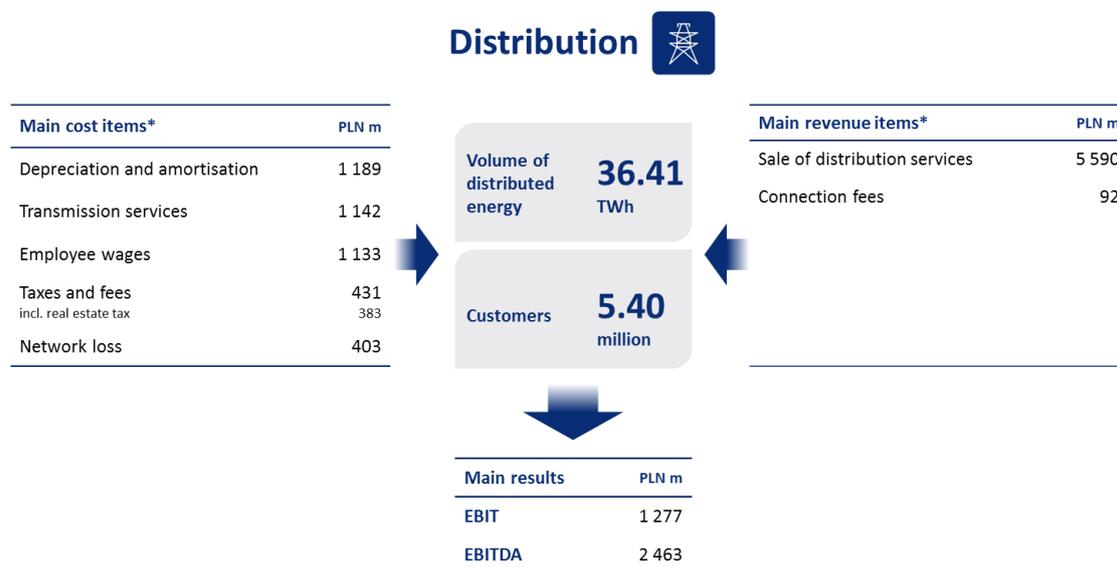
PGE Group also sees potential to further develop onshore wind energy. This is proven by the project to build three wind farms: Starza, Rybice and Karnice II, together with associated infrastructure and power off-take. The investment in the Zachodniopomorskie Voivodship with total installed capacity of approx. 97 MW will bring PGE's total installed wind capacity to nearly 650 MW and strengthen its position as the largest producer of green energy in Poland. Realisation of the project will be possible thanks to the win of Klaster in auction for sale of electricity in RES installations. Auction organized by the ERO was directed to producers of electricity in PV plants and wind farms with a total installed capacity of more than 1 MW.

Also of significance are investments being implemented by companies in the renewable energy segment that focus on maintaining riverbeds, participating in the costs being incurred by river administrators and participating in the costs of restocking, which is a way of compensating for making fish migration more difficult on account of damming facilities being built across rivers.

## DISTRIBUTION

### Segment description and its business model

Core business of the segment includes supply of electricity to final off-takers through the grid and HV, MV and LV infrastructure.



\*in accounting terms.

Segment revenue is based on a tariff for electricity distribution services, which is approved by the ERO President every year at company request and is regulated. The tariff allows costs related to the distribution system operator's on-going activities to be transferred. These are both justified operating costs, depreciation as well as costs related to the necessity to cover grid losses on electricity distribution or the purchase of transmission services from the transmission system operator. At the same time, the tariff reflects the transferred costs in fees such as the RES fee, transition fee or - starting from 2019 - cogeneration fee (see note 5 to the consolidated financial statements).

The key element shaping the distribution segment's result is return on PGE's invested capital. This is based on the Regulatory Asset Base ("RAB"), which is established on the basis of completed investments and taking into account asset depreciation. The Regulatory Asset Base serves as the basis for calculating return on capital, using weighted average cost of capital, which is published by the ERO President in accordance with a set formula and using as the risk free rate the average yield on 10-year State Treasury bonds with the longest maturity during the 18-month period preceding the tariff application submission, as quoted on the BondSpot treasury market. Moreover, the level of return on capital depends on achievement of individual quality targets set by the ERO President for efficiency indicators that cover: interruption time, interruption frequency, connection time and (not yet taken into account) time to provide metering and settlement data.

## VOLUME, CUSTOMERS AND OPERATING DATA

PGE Dystrybucja S.A. operates in the area of 122,433 sq. km and delivers electricity to approximately 5.4 million.

Diagram: Area of PGE distribution grid.



Table: Volume of distributed energy and number of customers in 2018 and 2017.

Tariff	Volume (TWh)*		Number of customers according to power take-off points	
	2018	2017	2018	2017
A tariff group	5.67	5.44	108	109
B tariff group	14.15	13.51	11 739	11 423
C+R tariff groups	7.01	6.89	480 864	480 345
G tariff group	9.58	9.50	4 909 493	4 858 798
<b>TOTAL</b>	<b>36.41</b>	<b>35.34</b>	<b>5 402 204</b>	<b>5 350 675</b>

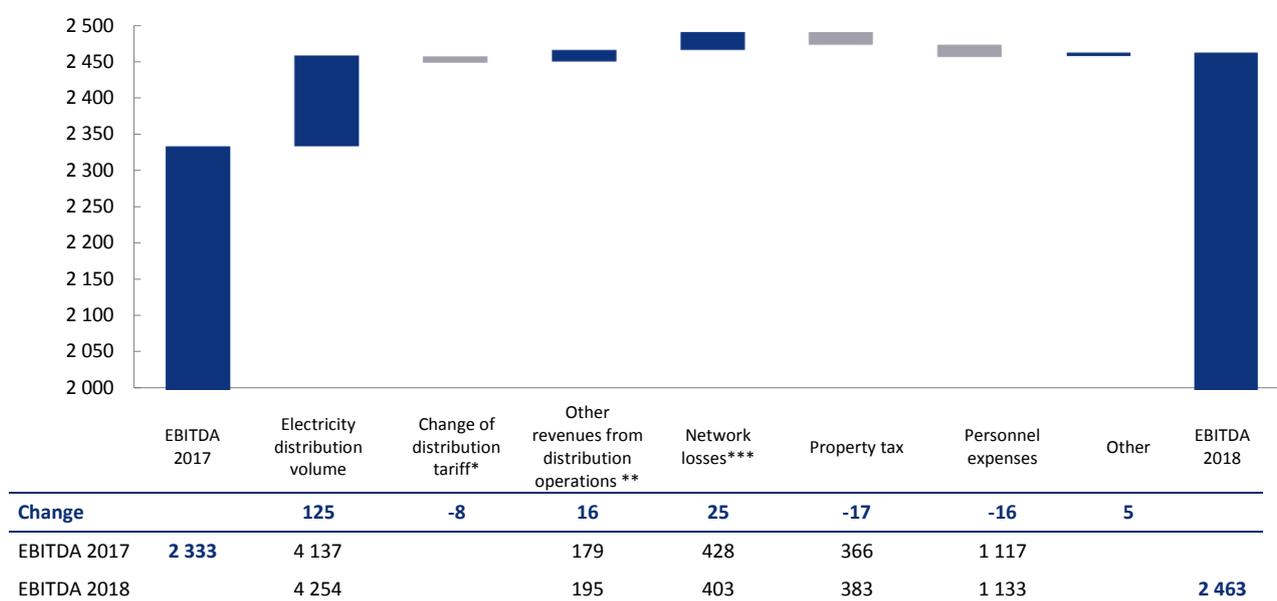
\* with additional estimation of sales.

Table: Key operational data in 2018 and 2017, 2016 and 2015.

Operational data	Unit	2018	2017	2016	2015
Number of stations, including:	pieces	94 198	93 493	92 328	92 258
number of transformer stations	pieces	93 764	93 104	92 474	91 874
MVA power	MVA	31 570	30 826	29 903	29 500
Total length of power lines	km	290 235	287 864	285 701	283 804
HV lines	km	10 282	10 278	10 197	10 143
MV lines	km	112 512	111 588	110 798	109 938
LV lines	km	167 440	165 998	164 706	163 723
Grid loss ratio	%	5.1	5.4	5.8	5.9
SAIDI ratio, including:	minutes	299	557	401	442
Planned	minutes	87	95	119	159
Unplanned with catastrophic	minutes	212	462	282	283
SAIFI ratio, including:	per customer	3.92	5.48	4.49	4.72
Planned	per customer	0.47	0.48	0.61	0.7
Unplanned with catastrophic	per customer	3.45	5.00	3.88	4.02
Connection time	days	211	215	248	291

## KEY FACTORS FOR THE RESULTS OF THE SEGMENT

Chart: Key changes of EBITDA in Distribution (in PLN million) – managerial perspective.



\* Excluding cost of transmission services from PSE S.A.

\*\* Reactive energy, capacity excess, additional services, resumption of supplies.

\*\*\* Adjusted for revenues from the Balancing market.

Key factors affecting the results of Distribution in 2018 y/y included:

- **Increased volume of distributed energy** by 1 071.5 GWh, resulting from – inter alia – higher number of customers measured by power take-off points (by approx. 51.5 thousand) and growth of the economic activity of customers, mainly from groups A and B, in the area of operation of PGE Dystrybucja S.A.
- **A slight drop of the average rate** by approximately PLN 0.2/MWh after decreasing revenues by cost of fees for PSE S.A.
- **Increase of other revenues from distribution activities** mainly from passive power and excessive capacity what results from behaviour of off-takers, whose power consumption is higher than volume contracted in the agreement with PGE Dystrybucja S.A.
- **Lower costs of energy to cover balancing difference** as a result the recognition of electricity estimates for covering the balancing difference.
- **Increase of costs of tax on real estate** in connection with an increase of: (i) grid assets value as a result of investments, (ii) tax rates binding in 2018.
- **Increase in personnel costs**, related to ongoing process to optimise salaries.
- **Change in other** resulting mainly from lower costs of office supplies and office equipment and advisory services.

## CAPITAL EXPENDITURES

Table: Capital expenditures incurred in Distribution segment in 2018 and 2017.

PLN million	2018	2017	% change
Development investments	727	745	-2%
Modernisation and replacement	1 045	903	16%
Other	81	68	19%
<b>TOTAL</b>	<b>1 853</b>	<b>1 716</b>	<b>8%</b>

## RESPONSIBLE APPROACH TO NATURAL ENVIRONMENT

The Distribution segment manifests its responsible approach to the natural environment through compliance with legal regulations and best sector's standards concerning the operation of its power networks and equipment. This also involves investment and repair tasks that are conducted in such a way as to minimise their burden and impact on the surrounding natural environment.

The construction of new power facilities or the conversion of existing facilities is based on decisions on environmental conditions. The matter of environmental decisions was included in the appropriate procedure.

PGE Dystrybucja S.A. has been implementing a project to limit grid losses for years, mainly by replacing transformers with low-loss equipment and by converting and modernising the grid. These investments are contributing to the improvements in quality parameters of electricity supplies and to reducing grid operation costs. In 2018, as a result of a number of efficiency initiatives, the grid loss ratio was reduced from 5.4% to 5.1%.

Distribution segment is subject to mandatory notification of installations that emit an electromagnetic field. New or modernised installations being operated by PGE Dystrybucja S.A. are notified to the relevant environmental protection authorities on an on-going basis.

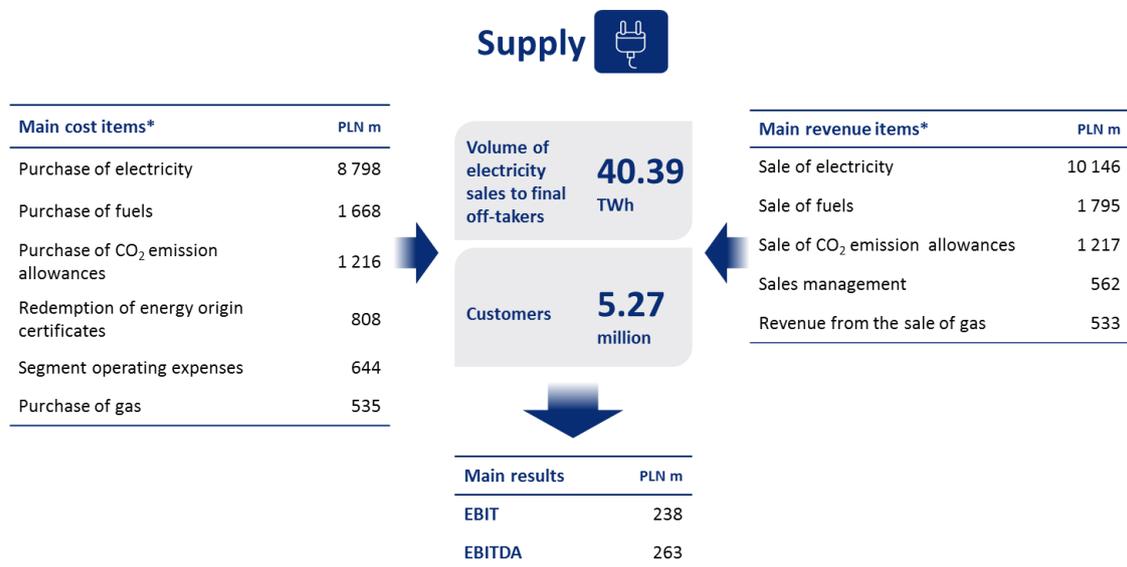
In 2018 PGE Dystrybucja undertook a number of activities intended to maintain the natural character of the environment. The most important activities included:

- conducting environmental impact assessments at the technical design stage of investment processes,
- continuing activities intended to protect the natural environment from insulating oil pollution in the event of an emergency leak from transformers used on 110 kV substations, by constructing sealed containers (basins) under power transformers,
- continuing activities within a programme to protect white stork nests, consisting of installing special structures on low-voltage lines facilitating the set up and protection of stork nests,
- introduction of modern small-format power equipment and grid elements in order to decrease area occupied by infrastructure,
- replacement of transformers in order to limit electricity grid losses.

## SUPPLY

### Segment description and its business model

Supply segment activities include Group's wholesale and retail trading of electricity. Wholesale trading include mainly electricity trading on behalf of and for Conventional Generation segment and Renewables segment.



\*in accounting terms.

As part of retail-market activities, the key source of revenue is **sale of electricity** to final customers. This is sale to business and institutional clients, which constitutes approx. 3/4 of the sales volume, and to retail clients. The segment's revenue also includes the sale of fuels, mainly: pulverised coal and fat coal, which is sold by PGE Paliwa sp. z o.o., and **sale of gas**.

Electricity sales are matched by the **costs to purchase electricity** on the wholesale market and **costs to redeem certificates** as part of the support system for renewable sources, cogeneration and energy efficiency.

The Supply segment also covers costs related to the Group's corporate centre.

## OPERATIONAL DATA

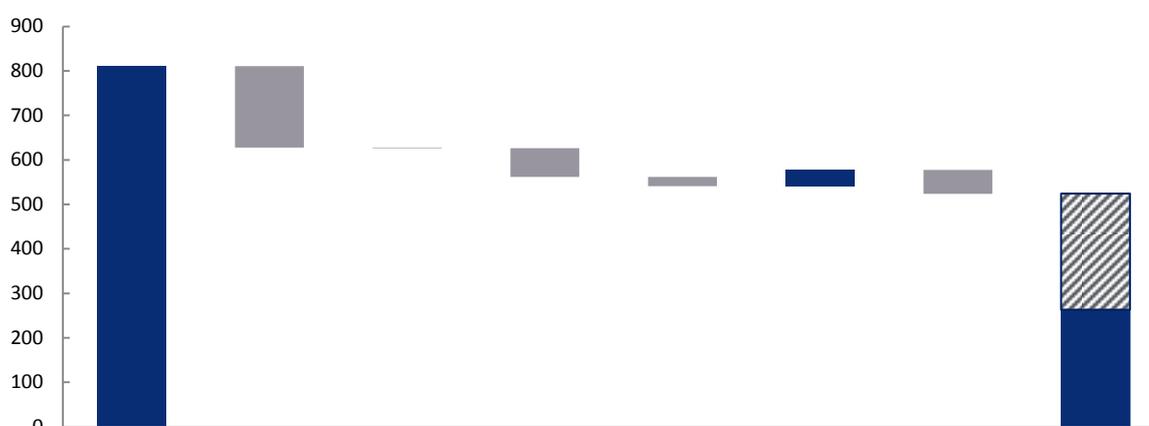
Table: Volume of electricity sales to final off-takers and number of customers in 2018 and 2017.

Tariff	Volume (TWh)*		Number of customers according to power take-off points	
	2018	2017	2018	2017
A tariff group	10.21	9.84	153	167
B tariff group	13.65	14.01	11 718	11 553
C+R tariff groups	6.76	6.90	447 081	435 771
G tariff group	9.77	9.27	4 812 012	4 731 621
<b>TOTAL</b>	<b>40.39</b>	<b>40.02</b>	<b>5 270 964</b>	<b>5 179 112</b>

\*PGE Obrót S.A.

## KEY FACTORS FOR THE RESULTS OF THE SEGMENT

Chart: Key changes of EBITDA in Supply (in PLN million) – managerial perspective.



	EBITDA 2017	Result on electricity – margin	Result on electricity volume	Certificates redemption costs	Result on gas trading	Revenues from services provided to segments of the Group	Other	EBITDA 2018
<b>Change</b>		<b>-183</b>	<b>-2</b>	<b>-64</b>	<b>-21</b>	<b>36</b>	<b>-53</b>	
Reported EBITDA 2017	<b>811</b>	1 479		744	16	554		
Recurring EBITDA 2018		1 294		808	-5	590		<b>524</b>
One-offs 2018								<b>-261</b>
Reported EBITDA 2018								<b>263</b>

 One-offs reducing reported result

Key factors affecting recurring EBITDA of Supply segment in 2018 y/y included:

- **Lower result from electricity** by PLN 185 million resulting mainly from achieving lower unit margin on sale of electricity, related to increase of prices on the wholesale market, particularly on spot market (see p. 4.2 of this report), partly used for balancing of electricity demand resulting from sales to final off-takers.
- **Increase in costs to redeem certificates** mainly as a result of increased demand for certificates stemming from increased obligation to redeem green, yellow and purple certificates higher prices of green certificates redemption.
- **Lower result on gas trading**, mainly due to a decline in gas sale margins as a consequence of higher wholesale market prices having impact on the cost of balancing transactions with the Conventional Generation segment and retail customers' demand on the SPOT market.
- **Increase of revenues from services performed within the Group** resulting mainly from increased revenues from the Agreement for Commercial Management of Generation Capacities ("ZHZW") (PLN (+) 108 million), as a consequence of higher sale and purchase prices of electricity under management and higher trading volume (+ 9.2 TWh including introduction of PGE EC to the agreement + 6.2 TWh) and decreased revenues from so called support agreements (PLN - 72 million) caused by different method of settlements with the companies.
- **Lower result in other** mainly as a result of: (i) lower revenue from wind farm balancing services, (ii) higher operating costs in the segment, (iii) better result on other operations.

Reported EBITDA in 2018 is a consequence of creation of provision for contracts that generate liabilities in PGE Obrót S.A., in the connection with the implementation of the Act of December 28, 2018 on amending the act on excise tax and some other acts (see p. 4.6 of this report).

## RESPONSIBLE APPROACH TO NATURAL ENVIRONMENT

PGE Obrót S.A. is one of the leading electricity sellers in Poland. The company implements a responsible approach to the natural environment through an offering for clients who care about ecology and the origin of their electricity. The "Naturally, it's energy" offering is prepared for all existing and future PGE customers who have eco-friendly activities listed in their strategies. This covers the sale of electricity generated in renewable sources and comes with a guarantee of origin for this energy. Clients who decide to select this offering receive a certificate from PGE Obrót S.A. showing what percentage of the energy purchased in a given year comes from renewable sources.

Until September 2018 "Save on light" offering directed to household segment was continued (in March 2018 the name was changed to "House full of light"). Together with "Save on light for small business" and „Business in good light” PGE Obrót S.A. offered energy-saving solutions to its customers. This deal included electricity sales together with an additional product - a package of LED bulbs / lamps.

One of elements of extensive combat for clean air is "Anti-Smog Offering" introduced in January 2018. This offer is directed to those customers planning to use electricity for heating purposes as well as those who charge electric vehicles, who decide to increase electricity consumption during night hours 22:00 – 6:00. This offer is available for individual customers of PGE Obrót S.A. being consumers from historical market (area of PGE Dystrybucja).

## OTHER OPERATIONS

### Segment description and its business model

Other operations include services, through the subsidiaries, to PGE Group, which includes capital raising and provision of IT, payroll and HR services and transportation services. Its activities also include subsidiaries formed to prepare and implement a project to build a nuclear power plant, to manage investment funds and to invest in start-ups.

Increase in EBITDA of Other Operations segment by approx. PLN 38 million is mainly related to increased EBITDA of: PGE Systemy S.A. by PLN approx. 21 million (due to extended range of services for companies from other segments of PGE Capital Group) and PGE Ekoserwis Sp. z o.o. in amount of approx. PLN 11 million.

### Capital expenditures

Capital expenditures in Other Operations in 2018 amounted to PLN 162 million compared to PLN 126 million in 2017.

Within the above amount, the highest capital expenditures in 2018 were incurred by the following companies:

- PGE Systemy S.A. – for IT infrastructure and software development PLN 76 million;
- PGE EJ 1 sp. z o.o. – for nuclear project development PLN 79 million.

## **5.5. Significant events of the reporting period and subsequent events**

### **TENDER OFFER FOR SHARES OF ZESPÓŁ ELEKTROCIĘPŁOWNI WROCŁAWSKICH KOGENERACJA S.A. AND ITS RESULT**

On February 1, 2018 the Management Board of PGE announced tender offer for sale of 2 383 999 dematerialised ordinary bearer shares issued by Kogeneracja S.A., entitling to 16.00% of votes on the General Meeting of Kogeneracja S.A. The proposed price was PLN 81.80 for each share. The subscription period lasted from February 21, 2018 till March 6, 2018. The tender offer resulted in acquisition of 1 202 172 shares of Kogeneracja S.A., entitling to 1 202 172 of votes on the General Meeting of Kogeneracja S.A. representing 8.07% of total shares and votes on the General Meeting of Kogeneracja S.A.

More information on that issue in current reports of PGE S.A. and in note 1.3 to the consolidated financial statements.

Current reports of PGE S.A.:

- [Tender offer for shares of Zespół Elektrociepłowni Wrocławskich KOGENERACJA S.A. >>](#)
- [Information regarding number of shares purchased during the tender offer for shares of Zespół Elektrociepłowni Wrocławskich KOGENERACJA S.A. and the percent of votes on the General Meeting resulting from the tender offer >>](#)

### **SIGNING OF THE LOAN AGREEMENT OF PLN 4.1 BILLION**

Information on the Signing of the loan agreement was published in the current report:

- [Signing of the loan agreement](#)

### **TENDER OFFER FOR SHARES OF POLENERGIA AND ITS RESULT**

On May 22, 2018 the Management Board of PGE announced a tender offer for sale of 45 443 547 ordinary bearer shares, i.e. all shares issued by Polenergia S.A., entitling to 100% of votes on the General Meeting of Polenergia S.A., at a price of PLN 16.29 for each share. PGE was also the entity acquiring the shares in the tender offer.

PGE has taken decision not to acquire the shares of Polenergia S.A. due to the fact that some of the conditions of the tender were not satisfied.

More information on that issue in current reports of PGE S.A. and in note 33.3 to the consolidated financial statements.

Current reports of PGE S.A.:

- [The decision taken by the Management Board and the Supervisory Board of PGE Polska Grupa Energetyczna S.A. on planned announcement of tender for shares of Polenergia S.A. – disclosure of delayed inside information>>](#)
- [Announcement of a tender offer to subscribe for the sale of shares of Polenergia S.A.>>](#)
- [Information on not meeting some of the conditions of a tender offer to subscribe for the sale of shares of Polenergia S.A. announced by PGE Polska Grupa Energetyczna S.A. >>](#)

### **CHANGE OF COMMISSIONING DATES OF UNITS 5 AND 6 IN OPOLE POWER PLANT**

As a result of negotiations with the General Contractor (syndicate of Polimex-Mostostal S.A., Mostostal Warszawa S.A. i Rafako S.A.) and GE Power, new commissioning dates of units 5 and 6 in Opole power plant have been estimated and remuneration of the General Contractor was confirmed, provided that the commissioning dates for the units, agreed in the annex, are met.

Modified commissioning dates declared by the General Contractor are: May 31, 2019 for unit 5 and September 30, 2019 for unit 6. On October 10, 2018 PGE GiEK, subsidiary of PGE, signed an annex with the General Contractor to the agreement for construction of units 5 and 6 in Opole power plant.

Current reports of PGE S.A.:

- [New commissioning dates of units 5 and 6 in Opole power plant>>](#)
- [Annex to the construction agreement regarding units 5 and 6 in Opole Power Plant>>](#)

## AGREEMENT WITH PGG

On November 20, 2018 PGE has signed the agreement for supplies of hard coal with Polska Grupa Górnicza S.A. Under the agreement, the parties estimated the volume of hard coal supplies for PGE GIEK, KOGENERACJA S.A. and PGE EC S.A. for years 2019-2022.

Current report of PGE S.A.:

- [Agreement with PGG for hard coal supplies >>](#)

## RESULTS OF CAPACITY MARKET AUCTIONS

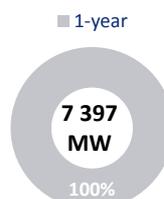
The first three capacity market auctions for delivery years 2021, 2022 and 2023 were held in November and December 2018. As a result, PGE contracted capacities for the Group's existing, modernised and new generation assets. Contracts for the under-construction units at the Opole and Turów power plants are executed for a 15-year period, guaranteeing stable and long-term remuneration for readiness to delivery capacity to the system, which will supplement revenue from the sale of electricity. The auction clearing prices were respectively: PLN 240.32/kW/year (2021), PLN 198.00/kW/year (2022) and PLN 202.99/kW/year (2023). In the case of multiannual capacity contracts, the price will be subject to annual indexation using the weighted average price index for consumer goods and services.

Diagram: PGE's contracts for years 2021-2023.

**2023 auction**

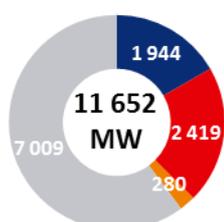


**2022 auction**



■ 15-year ■ 5-year ■ 7-year ■ 1-year

**2021 auction**



ELO-5 ~850 MW\*  
ELO-6 ~850 MW\*  
ELT-7 ~450 MW\*

X  
Availability  
ratio  
91.54%

\* Net achievable capacities.

Current reports of PGE S.A.:

- [Result of main capacity market auction for the year 2021 >>](#)
- [Publication of preliminary results of main capacity market auction for the year 2021 >>](#)
- [Result of main capacity market auction for the year 2022 >>](#)
- [Publication of preliminary results of main capacity market auction for the year 2022 >>](#)
- [Result of main capacity market auction for the year 2023 >>](#)
- [Publication of preliminary results of main capacity market auction for the year 2023 >>](#)

## INITIAL INTEREST IN BUYING ALL SHARES IN THE COMPANY PGE EJ1

On November 28, 2018 the Management Board of PGE expressed initial interest in purchasing all shares in the company PGE EJ1 sp. z o.o. The execution of transaction will be possible after the preparation of valuation by the independent adviser and after obtaining corporate approvals from all concerned parties.

Current report of PGE S.A.:

- [Initial interest in buying all shares in the company PGE EJ1>>](#)

## ANNEX TO THE AGREEMENT WITH POLSKA GRUPA GÓRNICZA S.A. FOR HARD COAL SUPPLIES FOR UNITS 5 AND 6 IN OPOLE POWER PLANT

On November 30, 2018 PGE has received the information that PGG signed an annex to the agreement dated August 13, 2013 concerning hard coal supplies for units 5 and 6 in Opole Power Plant. Parties of the annex adjusted arrangements to meet the current legal and formal requirements and abandoned the determination of hard coal price based on indicators involving the average electricity price, average market price of hard coal and average cost of CO<sub>2</sub> emission allowances. Parties of the agreement set hard coal price for the period till December 31, 2022.

Current report of PGE S.A.:

- [Annex to the agreement with Polska Grupa Górnicza >>](#)

## BEGINNING OF TALKS REGARDING POTENTIAL COOPERATION ON CONSTRUCTION PROJECT OF 1 000 MW UNIT IN OSTROŁĘKA

In response to the invitation from Energa S.A. and Enea S.A., on January 7, 2019 the companies started talks that may potentially result in involvement of PGE in the construction project of 1 000 MW unit in Ostrołęka, which is currently pursued by Energa and Enea.

Current report of PGE S.A.:

- [Beginning of talks regarding potential cooperation on construction project of 1 000 MW unit in Ostrołęka>>](#)

## CHANGES IN THE MANAGEMENT BOARD AND SUPERVISORY BOARD

Changes in the Management Board and Supervisory Board are described in p. 8.3 of this report.

## LEGAL ASPECTS

### [Claims for annulment of the resolutions of the General Meetings of PGE S.A.](#)

Information on claims for annulment of the resolutions of the General Meetings of PGE S.A. are described in note 27.4 to the consolidated financial statements.

### [The issue of compensation regarding the conversion of shares](#)

Information on the issue of compensation regarding the conversion of shares are described in note 27.4 to the consolidated financial statements.

## INFORMATION CONCERNING PROCEEDINGS IN FRONT OF COURT, BODY APPROPRIATE FOR ARBITRATION PROCEEDINGS OR IN FRONT OF PUBLIC ADMINISTRATION AUTHORITIES

Significant proceedings pending in front of courts, competent arbitration authority or public administration authority are described in note 27.4 to the consolidated financial statements.

### [Claims related to agreements for sale of certificates signed with Energa-Obrót S.A.](#)

Information on claims related to agreements for sale of certificates signed with Energa-Obrót S.A. are described in note 27.1 to the consolidated financial statements.

Non-contractual use of property

Information on disputes and claims regarding non-contractual use of property are described in note 27.2 to the consolidated financial statements.

Termination by Enea S.A. of agreements for sale of certificates

Information on termination by Enea S.A. of agreements for sale of certificates are described in note 27.4 to the consolidated financial statements.

**INFORMATION CONCERNING THE GUARANTEES FOR LOANS GRANTED BY THE COMPANY OR A SUBSIDIARY**

Within the Group, in 2018 PGE S.A. and subsidiaries did not grant guarantees to other entities or to a subsidiary, where a value of guarantees constitutes at least 10% of the Company's equity.

**CHANGE OF ACCOUNTING RULES**

Change of accounting rules is described in note 5 to the consolidated financial statements.

**INFORMATION ON ISSUE, REDEMPTION AND REPAYMENT OF DEBT SECURITIES AND OTHER SECURITIES**

Information on issue, redemption and repayment of debt securities and other securities is described in p. 7.1 of the foregoing report and in note 1.3 to the consolidated financial statements.

**TRANSACTIONS WITH RELATED ENTITIES**

Information about transactions with related entities is presented in note 31.2 to the consolidated financial statements.

**SIGNIFICANT OFF-BALANCE SHEET ITEMS**

Significant off-balance sheet items are described in note 27 to the consolidated financial statements.

**ACT ON AMENDING THE ACT ON EXCISE TAX AND SOME OTHER ACTS**

Changes in the act are described in note 33.2 to the consolidated financial statements.

## 5.6. Management of financial resources and financial liquidity

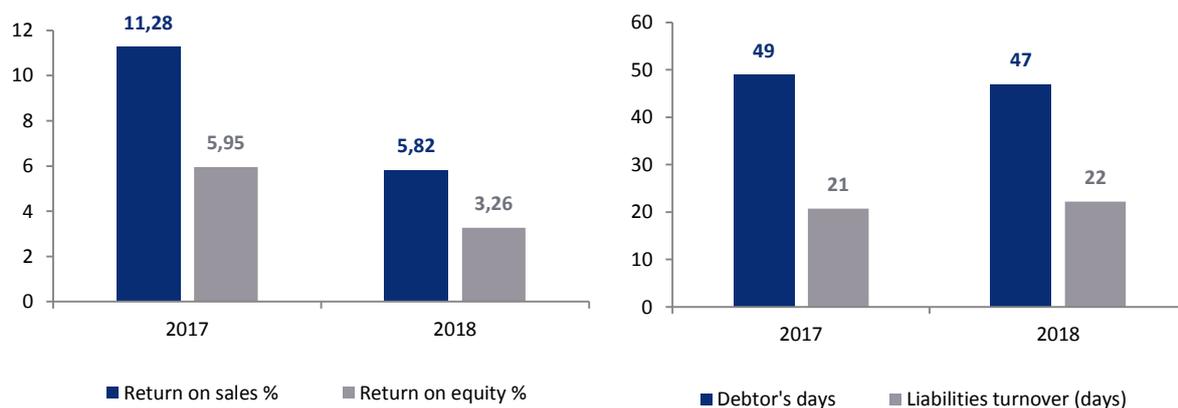
### NET DEBT OF THE GROUP AND MAIN FINANCIAL RATIOS

Table: Group's net debt as at December 31, 2018 and December 31, 2017.

PLN million	As at December 31, 2018	As at December 31, 2017
Cash on hand and cash at bank	1 023	1 309
Overnight deposits	33	34
Short-term deposits	156	1 209
VAT - Split payment	69	-
<b>Cash and cash equivalents</b>	<b>1 281</b>	<b>2 552</b>
Adjustment for restricted cash*	-180	-92
Investments held until maturity date (short-term deposits)	7	6
<b>Cash at PGE Group's disposal</b>	<b>1 108</b>	<b>2 466</b>
Current loans and borrowings	2 273	570
Bonds issued - current	2 186	1 051
Current lease	2	2
Non-current loans and borrowings	5 663	5 788
Bonds issued – non-current	583	2 632
Non-current lease	1	2
<b>Gross financial debt (short and long-term)</b>	<b>10 708</b>	<b>10 045</b>
<b>Net financial debt</b>	<b>9 600</b>	<b>7 579</b>

\* Restricted cash includes collaterals for settlements of the Group entities with Izba Rozliczeniowa Giełd Towarowych S.A. (Warsaw Commodity Clearing House), funds on VAT accounts and security deposits.

Table: Key financial ratios.



PGE's existing financing model takes into account the use of funds from its core activities, debt financing in the form of commercial bank credit facilities and bond programmes, credit facilities from Bank Gospodarstwa Krajowego, credit facilities from multilateral institutions such as the European Investment Bank or the European Bank for Reconstruction and Development as well as in the form of preferential financing. In order to effectively manage liquidity, within the Group we have introduced a cash-pooling system, with participation of 27 Group companies.

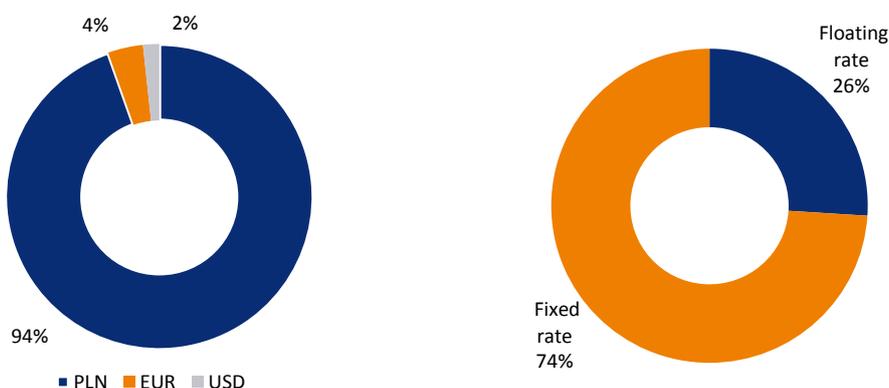
Until 2014, PGE maintained a net cash position and investment expenditures were financed from operating cash flows. However, an ambitious investment programme of approx. PLN 34 billion scheduled for 2016-2020 requires long-term planning and external financing.

The most important available external financing sources for PGE Group are as follows:

- Domestic bond programme of PLN 5 billion.
- Euro Medium Term Note (EMTN) bond programme of up to EUR 2 billion.
- 2 credit facilities from Bank Gospodarstwa Krajowego as part of the "Inwestycje polskie" ("Polish investments") programme, amounting to PLN 1.5 billion in total.
- Syndicated loan of PLN 5.5 billion, including a term facility of PLN 3.63 billion and revolving facility of PLN 1.87 billion.
- PLN 2 billion credit facility from the European Investment Bank - PLN 1.5 billion will be used for projects related to distribution network modernisation and expansion, while PLN 490 million will be used to finance and re-finance the construction of cogeneration units.
- PLN 500 million credit facility from the European Bank for Reconstruction and Development to support implementation of a long-term programme for distribution network development and modernisation.
- Syndicated revolving loan of PLN 4.1 billion intended for financing of the ongoing operations, financing of the investment and capital expenses and refinancing of the financial liabilities.
- Current-account overdraft facilities.

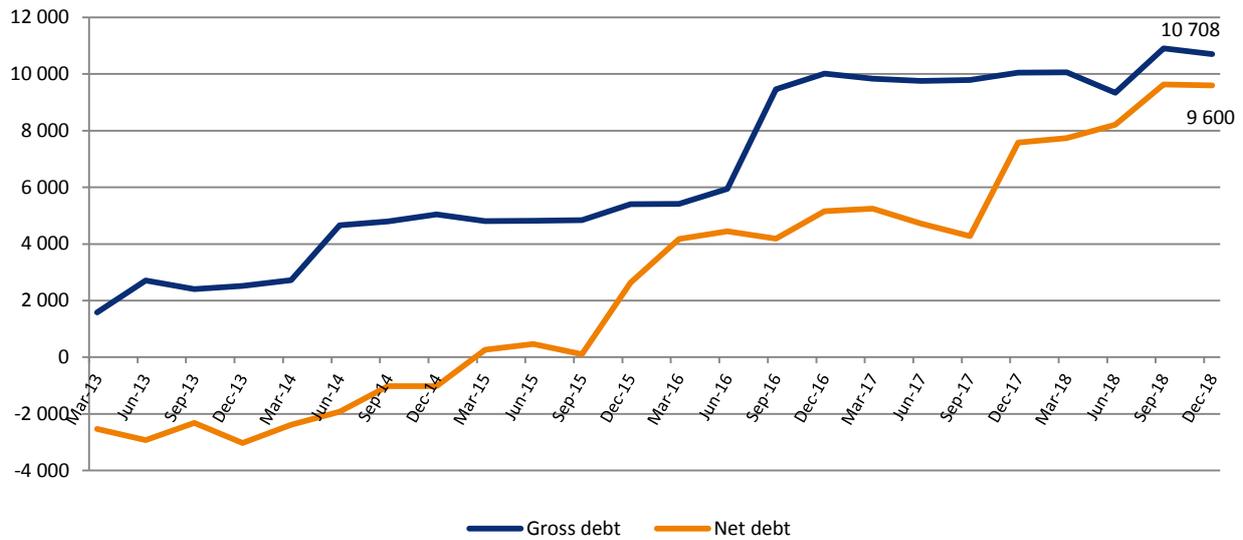
PGE Group's financing policy features diverse maturities for specific financial instruments, which along with the diversification of financing sources, helps the Group to optimise its financing costs. The Group aspires to implement a responsible financial policy, which entails maintaining its net debt to EBITDA ratios at a level that makes it possible to retain investment-grade ratings.

Diagram: Currency profile of the Group's debt (including hedging transactions) and the Group's debt breakdown by fixed and floating rate (including hedging transactions).



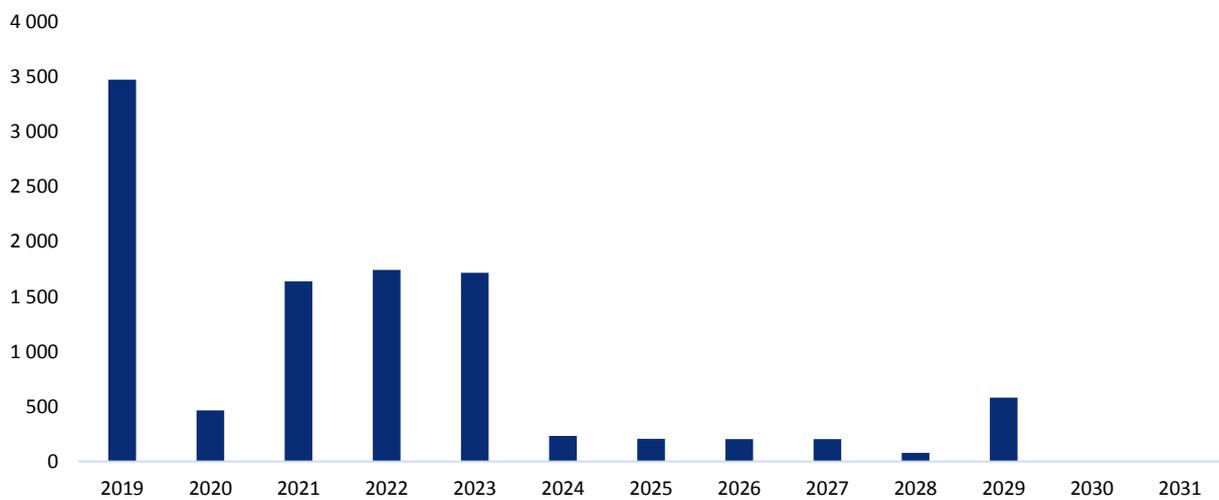
**Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018**

Diagram: Gross debt and net debt (PLN million).



External long-term debt is mainly drawn by PGE S.A. (the parent company) and PGE Sweden AB (Swedish SPV for Eurobonds issues). Some historical investments loans exist in PGE GiEK S.A. From the fourth quarter of 2017 the graph includes debt of PGE EC and its subsidiaries.

Diagram: Debt maturity profile (PLN million) as at December 31, 2018.



## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

### BONDS ISSUED

Company (Issuer)	Party of the agreement	Type of financing	Signing date of the program (yyyy-mm-dd)	Maturity date of the program (yyyy-mm-dd)	Maximum value of the program (million)	Utilisation (million)	Currency	
PGE S.A.	Bank Polska Kasa Opieki S.A. and ING Bank Śląski S.A.	Domestic market bonds	2011-08-29	-	5 000	0	PLN	
PGE Sweden	BNP Paribas, CITIGROUP Global Markets Ltd., ING Bank N.V., London Branch, Nordea Bank Danmark A/S, Powszechna Kasa Oszczędności Bank Polski S.A. and Societe Generale	Eurobonds	2015-05-22	-	2 000	638	EUR	
			Maturity					
			2019-06-09			500	EUR	
			2029-08-01			138	EUR	

### INTRA-GROUP BONDS

Company (Issuer)	Party of the agreement	Type of financing	Signing date of the program (yyyy-mm-dd)	Maturity date of the program (yyyy-mm-dd)	Maximum value of the program (million)	Utilisation (million)	Currency
PGE GIEK S.A.	ING Bank Śląski S.A.	Intra-group bonds	2011-06-20	2025-12-31	11 558	8 180	PLN
PGE GIEK S.A.	ING Bank Śląski S.A.	Intra-group bonds	2010-09-13	2025-12-31	4 091	0	PLN
PGE GIEK S.A.	Powszechna Kasa Oszczędności Bank Polski S.A.	Intra-group bonds	2009-11-30	2025-12-31	3 700	3700	PLN
PGE EO S.A.	ING Bank Śląski S.A.	Intra-group bonds	2013-09-20	2020-12-31	2 000	1 262	PLN

### BANK LOANS AND ADVANCES

Table: Information about most important loans and advances agreements signed in 2018.

Company (Lender)	Party of the agreement	Type of financing	Signing date (yyyy-mm-dd)	Maturity date (yyyy-mm-dd)	Liability limit (million)*	Currency	Fixed/floating rate
PGE S.A.	Consortium of banks	Bank loan	2018-09-17	2023-12-17	4100	PLN	Floating
PGE S.A.	Powszechna Kasa Oszczędności Bank Polski S.A.	Current account credit	2018-04-30	2020-04-29	500	PLN	Floating
PGE S.A.	Bank Gospodarstwa Krajowego	Current account credit	2018-06-01	2021-05-31	500	PLN	Floating
PGE S.A.	Bank Polska Kasa Opieki S.A.	Current account credit	2018-07-05	2021-07-03	500	PLN	Floating

\*Values over PLN 100 million.

## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

### INTRA-GROUP LOANS

Company (Borrower)	Party of the agreement	Type of financing	Signing date (yyyy-mm-dd)	Maturity date (yyyy-mm-dd)	Liability limit (million)*	Currency	Fixed/floating rate
PGE Energia Ciepła S.A.	PGE S.A.	Advance	2018-02-23	2021-02-23	2600	PLN	Fixed
PGE Energia Ciepła S.A.	PGE S.A.	Advance	2018-01-29	2021-01-29	230	PLN	Fixed

\* Values over PLN 100 million.

#### Loans granted

In 2018, PGE S.A. and Group companies granted advances as above.

#### Guarantees

In connection with the establishment of the EMTN Programme, on May 22, 2014 Deed of guarantee was issued by PGE for the liabilities of PGE Sweden AB (publ). Guarantee amounts to EUR 2,500 million and refers to liabilities of PGE Sweden AB (publ) arising from the issue of the Eurobonds under the Programme up to EUR 2,000 million. Guarantee will be valid until December 31, 2041. Financial terms of the guarantee will depend on the terms of Eurobonds issued by PGE Sweden AB (publ) and the remuneration for the guarantee will be reflected in the interest rates applied to loans granted to PGE S.A.

Pursuing the cash management project, on December 22, 2014 PGE S.A. concluded an agreement (valid until December 21, 2017) for the guarantee line in amount of PLN 250 million with Bank Polska Kasa Opieki S.A. Under the agreement PGE S.A. requested issuance of bank guarantees for the liabilities of PGE S.A. and selected companies from the PGE Group. Pursuant to the provisions of the agreement for the guarantee line, the guarantees may be valid for 5 years from the agreement expiry date.

## Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018

Table: Main guarantees granted by the PGE Group companies as at December 31, 2017.

Company	Entity entitled to guarantee (Beneficiary)	Entity whose liabilities are subject to guarantee (Debtor)	Form of security	Validity of guarantee (yyyy-mm-dd)		Value of guarantee (million)	Currency
PGE S.A.	Bondholders	PGE Sweden AB	Guarantee of financial instrument; Guarantee issued for liabilities of PGE Sweden AB resulting from issue of Eurobonds under the Program of up to EUR 2,000 million	2014-05-22	2041-12-31	2 500	EUR
PGE S.A.	Nordic Investment Bank	PGE GiEK S.A.	Guarantee of liabilities of PGE GiEK S.A. towards NIB in connection with the loan agreement of PGE GiEK S.A.	2017-05-24	2024-06-20	109	EUR
PGE Energia Ciepła S.A.	Bank Polska Kasa Opieki S.A.	PGE Paliwa sp. z o.o.	Guarantee of financial instrument	2017-09-21	2020-12-31	48	USD

The total amount of guarantees granted by the companies of the PGE Capital Group and mandatory on December 31, 2018 amounted to more than EUR 2 600 million, approximately PLN 1 800 million and USD 73 million.

Table: Main guarantees in PLN received by the PGE Group companies and valid as at December 31, 2018.

Company	Guarantee issuer	Entity for whose liabilities a guarantee was issued (Debtor)	Typ zabezpieczenia	Validity of guarantee (yyyy-mm-dd)		Value of guarantee (million)*	Currency
PGE GiEK S.A.	Bank Zachodni WBK S.A.	GE Power sp. z o.o.	Performance bond	2018-07-31	2019-06-30	317	PLN
PGE GiEK S.A.	Dusseldorf Mizuho	Mitsubishi Hitachi Power Systems Europe GmbH	Performance bond related to construction of new power unit in Turów power plant	2014-07-10	2020-06-30	238	PLN
PGE GiEK S.A.	PKO BP S.A.	Polimex Projekt Opole sp. z o.o.	Performance bond related to construction of power units no. 5 and 6 in Opole power plant	2014-01-29	2019-07-15	199	PLN
PGE GiEK S.A.	Millennium Insurance Company Ltd	Mostostal Power Development sp. z o.o.	Performance bond related to construction of power units no. 5 and 6 in Opole power plant	2014-01-29	2019-06-30	193	PLN
PGE GiEK S.A.	Bank Zachodni WBK S.A.	GE Power sp. z o.o.	Performance bond	2018-07-31	2019-06-30	187	PLN
PGE GiEK S.A.	MUFG Bank (EUROPE) N.V.	Mitsubishi Hitachi Power Systems Europe GmbH	Advance payments guarantee	2015-01-09	2021-06-01	129	PLN

\* Values over PLN 100 million.

## ***Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group for year 2018***

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The total amount of guarantees received by the companies of the PGE Capital Group and mandatory on December 31, 2018 amounted to more than PLN 2 400 million, more than EUR 32 million and USD 0.6 million. Guarantees were received in connection with investments being pursued and day-to-day operations and include mainly: advance payments guarantees and performance bonds.

### ***Description of structure of main capital deposits or main capital investments made within the Issuer's Capital Group in a given financial year***

Information on PGE Group's structure are presented in note 1.3 to the consolidated financial statements. Investments in associates and entities jointly controlled valued using the equity method are presented in note 12 to the consolidated financial statements. Changes in the Capital Group's structure which took place in 2018 and capital investments related thereto are described in p. 7.1 of this report.

## 6. Parent company of PGE Group – PGE S.A.

Pursuant to art. 55 section 2a of the Accounting Act and § 71 section 8 Regulation of the Minister of Finance on current and periodic information, the Company has prepared the report on activities of PGE S.A. and of the Capital Group in form of one document. Other required elements of the report on activities of the Companies which are not included in chapter 6, are identical with the ones in the report on activities of PGE Capital Group.

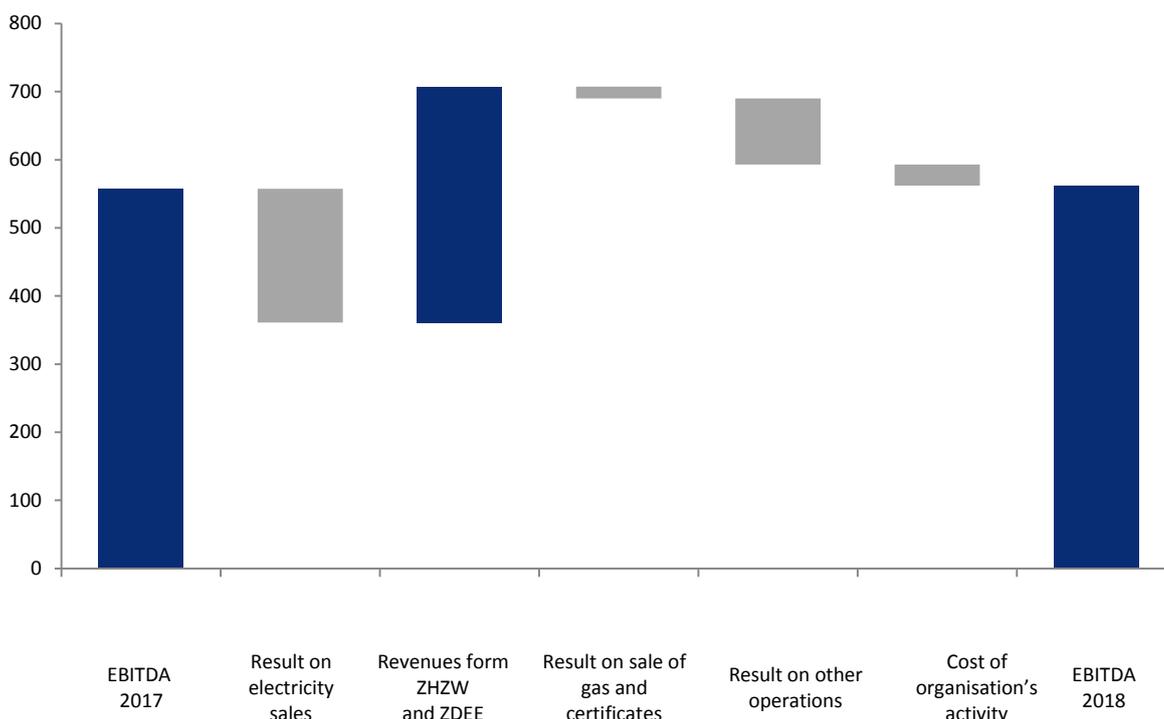
### 6.1. Key financial results of PGE S.A.

Key financial data	Unit	Year ended	Year ended	%
		December 31, 2018	December 31, 2017	change
Sales revenues	PLN million	11 450	9 185	25%
<b>EBIT</b>	<b>PLN million</b>	<b>549</b>	<b>541</b>	<b>1%</b>
<b>EBITDA</b>	<b>PLN million</b>	<b>562</b>	<b>557</b>	<b>1%</b>
EBITDA margin	%	5%	6%	
<b>Net profit/loss</b>	<b>PLN million</b>	<b>-203</b>	<b>4 544</b>	<b>-</b>
Net earnings per share	PLN	-0.11	2.43	-
Net cash from operating activities	PLN million	558	801	-30%
Net cash from investing activities	PLN million	-2 563	-582	340%
Net cash from financial activities	PLN million	407	-318	-
Working capital	PLN million	-660	2 032	-
Shares in subsidiaries	PLN million	32 024	32 568	-2%
<b>Net debt/EBITDA</b>	<b>x</b>	<b>11.34</b>	<b>10.36</b>	

## REVENUES BY GEOGRAPHICAL AREAS

PGE S.A. earns revenue mostly on domestic market (over 99%).

Chart: Key changes of EBITDA in PGE S.A. (in PLN million).



Change	-196	346	-17	-97	-31		
EBITDA 2017	557	199	455	8	135	240	
EBITDA 2018		3	801	-9	38	271	562

Key factors affecting the results of PGE S.A. in 2018 on y/y basis included:

- **The lower result on sales of electricity** is mainly a result of resignation from the margin added to the electricity prices sold to PGE Obrót S.A., and remuneration for securing retail demand results from separate ZDEE agreement, and appears in revenues from ZHZW and ZDEE agreements.
- **Increased revenues from the Group companies** from the services under the agreement for Commercial Management of Generation Capacities **and ZDEE** resulting from agreements signed by PGE S.A.: (i) from January 2018 with PGE Obrót S.A. for Security of Electricity Supply (ZDEE), (ii) from July 2018 with PGE Energia Ciepła S.A. for Commercial Management of Generation Capacities on behalf of PGE Energia Ciepła S.A. (ZHZW). In addition, growth of revenue results also from higher value of electricity under management on behalf of PGE GiEK.
- **Lower result on gas sales** is mainly result of balancing the transactions with PGE Obrót S.A. and Enesta sp. z o.o. through purchase of gas on spot market. Gas delivered to PGE Obrót S.A. and Enesta sp. z o.o. as a consequence of non-balancing of off-taker's demand, was sold to those companies at fixed price.
- **Lower result on other operations** was mainly caused by decrease of revenues from support and licence agreements.
- **Increase in operating costs** due to higher personnel expenses as a consequence of increased (inter alia in July 2018 60 employees were relocated from PGE Energia Ciepła S.A. to PGE S.A.), growing expenses for sponsoring and advertising and higher costs of IT services.

Table: Financial operations.

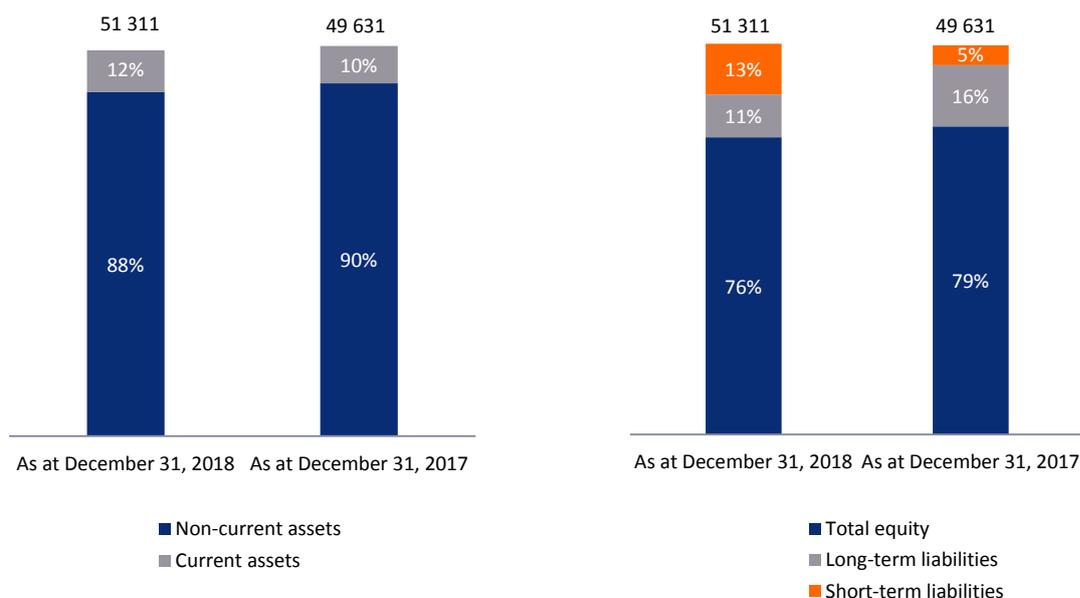
PLN million	Year ended December 31, 2018	Year ended December 31, 2017	% change
<b>Financial revenues</b>	<b>638</b>	<b>4 594</b>	<b>-86%</b>
Dividends from PGE Capital Group companies	46	2 872	-98%
Interest	428	368	16%
Revaluation	161	63	156%
Reversal of impairment losses	0	1 289	-
Other, including: profit from divestment, foreign exchange gains	3	2	50%
<b>Financial expenses</b>	<b>1 336</b>	<b>586</b>	<b>128%</b>
Interest	329	327	1%
Revaluation	204	0	-
Impairment losses	799	253	216%
Other, including: foreign exchange losses and other	4	6	-33%
<b>Result on financial operations</b>	<b>-698</b>	<b>4 008</b>	<b>-</b>

Key factors affecting the results of PGE S.A. in 2018 on y/y basis included:

- **Decreased revenues from dividends** mainly as a result of lack of dividend revenues in 2018 from PGE GiEK and PGE Dystrybucja S.A.
- **Increased revenues from interests** results mainly from higher interests from loans granted to the Group companies and higher interest from purchased bonds issued by the Group companies.
- **Change on impairment loss:** in 2018 it includes impairment loss on expected credit loss related to shares of PGE Obrót S.A. and PGE Sweden AB, and in 2017 PGE S.A. recognised revenues from partial decrease of impairment on shares of PGE Obrót S.A. and costs of impairment loss on shares of Exatel S.A., partial impairment loss on shares in PGE EJ 1 and partial impairment loss on Autostrada Wielkopolska S.A. bonds.
- **Revenues and costs related to revaluation,** include valuation of forward transactions on CO<sub>2</sub> allowances trading, financial instruments trading valuation of option for purchase of shares of Polimex-Mostostal S.A.

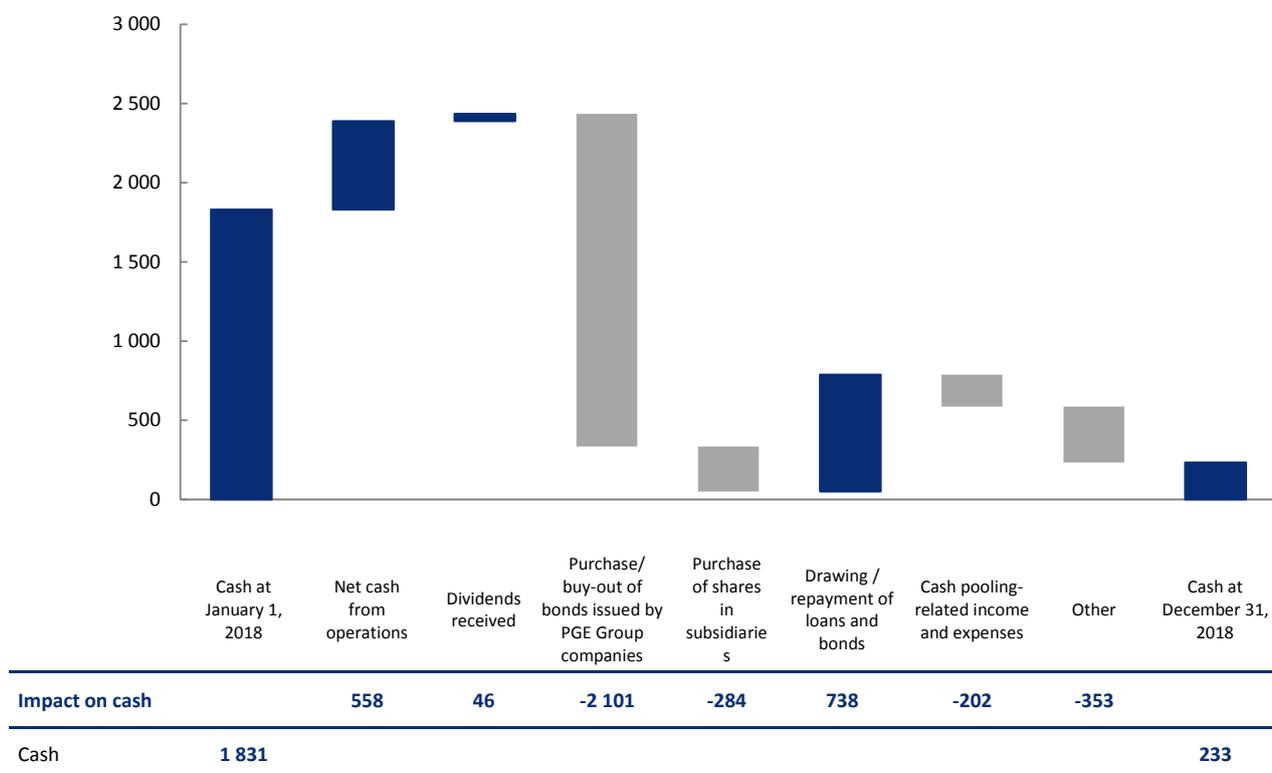
## STATEMENT OF FINANCIAL POSITION

Chart: Structure of assets and equity and liabilities.



## STATEMENT OF CASH FLOWS

Chart: Net change in cash (in PLN million).

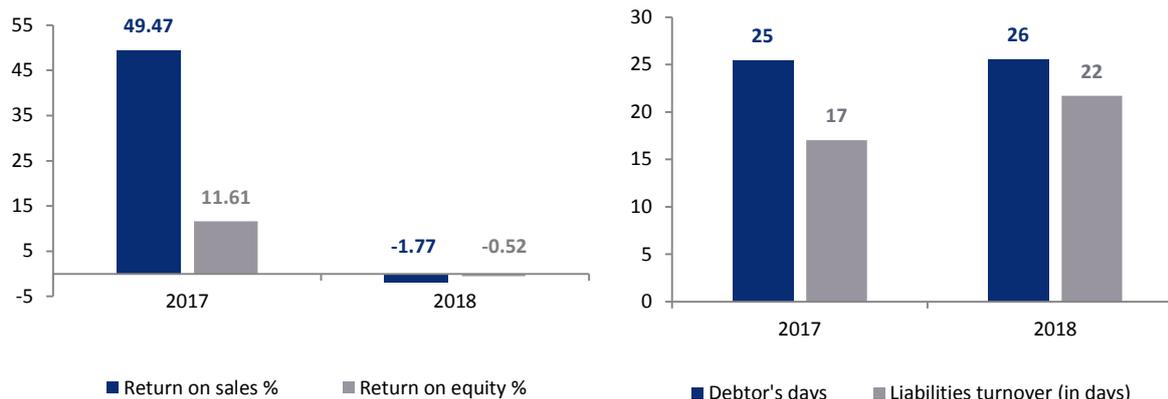


## NET DEBT OF PGE S.A. AND MAIN FINANCIAL RATIOS

Table: Company's net debt as at December 31, 2018 and December 31, 2017.

PLN million	As at December 31, 2018	As at December 31, 2017
Cash on hand and cash at bank	211	732
Overnight deposits	0	1
Short-term deposits	0	1 099
Funds on VAT accounts	24	0
<b>Cash and cash equivalents</b>	<b>235</b>	<b>1 832</b>
Investments held until maturity date (short-term deposits)	0	0
Short-term loans and debt securities (PGE Group)	3 360	1 744
Loans and receivables - cash pooling	1 204	134
<b>Cash at the Company's disposal</b>	<b>4 799</b>	<b>3 710</b>
Current loans and borrowings	4 098	188
Bonds issued - current	0	1 000
Short-term liabilities - cash pooling	1 446	576
Non-current loans and borrowings	5 628	7 714
Bonds issued - non-current	0	0
<b>Gross financial debt (short and long-term)</b>	<b>11 172</b>	<b>9 478</b>
<b>Net financial debt</b>	<b>6 373</b>	<b>5 768</b>

Chart: Key financial ratios.



## 6.2. Key operational figures of PGE S.A.

Table: Volume of electricity sales (in TWh).

Sales volume	2018	2017	zmiana %
Sale of electricity to the Group companies	44.92	38.59	16%
Sale of electricity on the power exchange and in bilateral transactions outside the Group	2.70	4.84	-44%
Sale within the balancing group and on the balancing market	1.27	1.25	2%
<b>Total electricity sales</b>	<b>48.89</b>	<b>44.68</b>	<b>9%</b>

PGE S.A. acts as a wholesale trading competence centre for the PGE Capital Group. Growth of volume of electricity sales in 2018 y/y is a result of increase in trading volumes, mainly in transactions with PGE Obrót S.A. Sales to PGE Obrót S.A. are realised in order to secure the demand of the retail customers for electricity supplies.

Table: Volume of natural gas sales.

Sales volume	2018	2017	zmiana %
Sale of natural gas to the Group	2.99	3.21	-7%
Sale of natural gas outside the Group	2.68	4.31	-38%
<b>Total natural gas sales</b>	<b>5.67</b>	<b>7.52</b>	<b>-25%</b>

Lower sales volume of natural gas y/y is a result of decreasing sales to entities outside the PGE Group and on the exchange. This results from lower competitiveness of PGE S.A. offer, what is caused by the fact that from the second half of 2017 an act on inventories came into force, upon which gas importers are obliged to maintain/ purchase inventory capacities, where PGNiG S.A. is the monopolist on Polish market. Considering the costs of this type of services, PGE S.A. does not import price-competitive foreign gas mainly from Germany, that could be later offered on OTC market to large customers or be actively traded on TGE exchange.

Sales of gas to the Group decreased largely due to lower demand of generating units of PGE GiEK. Supply volume to PGE Obrót S.A. also decreased, what results mainly from decline in sales to large customers from professional segment, an effect of losing two customers with significant gas consumption (Grupa Żywiec and Nida Media), whereas no other high volume consumption customers were not acquired.

## 6.3. Ownership structure

State Treasury is a main shareholder of PGE S.A. State Treasury and holds 1 072 984 098 Company's ordinary shares with nominal value of PLN 10.25 each, representing 57.39% of company's share capital and entitling to perform 1 072 984 098 votes at the general meeting of the Company. State Treasury stake represents 57.39% of the total number of votes.

State Treasury is the only shareholder holding at least 5% of the Company's shares (more information on the ownership structure in p. 8.4 of this report).

### 6.4. Dividend policy

In May 2017 the Management Board decided to recommended to suspend dividend payment from the profit for years 2016, 2017 and 2018 facing the need to finance an ambitious development program and limitation of the debt level increase.

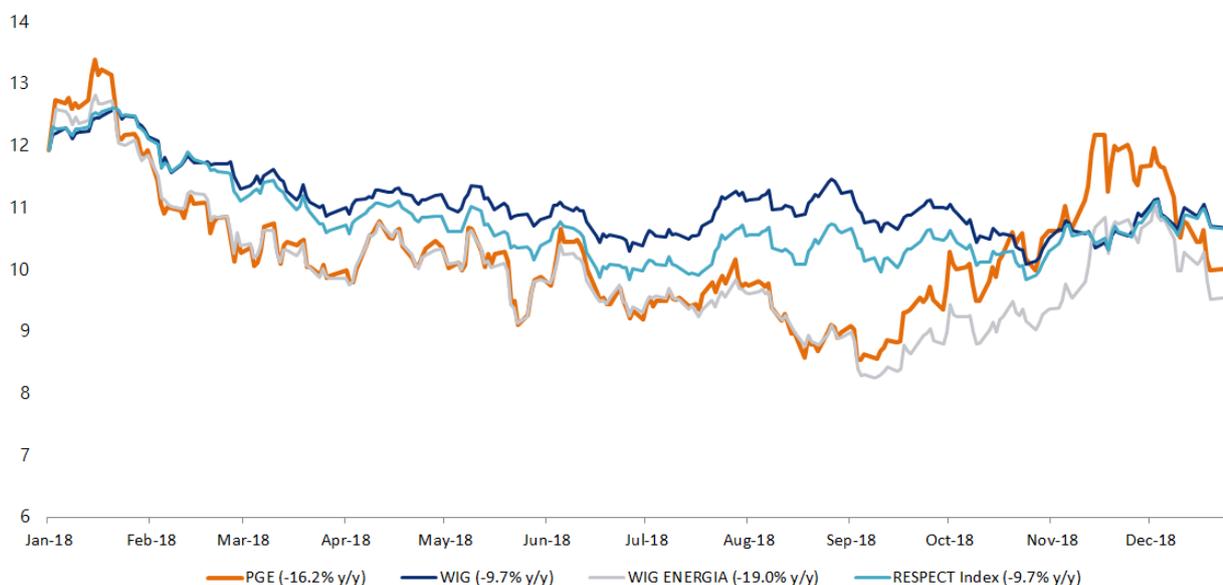
After that period, the Management Board of the Company intends to make a recommendation to the General Meeting of the Company of dividend payment for shareholders at the level of 40-50% of the consolidated net profit attributable to the equity holders adjusted by the value of impairment loss on property, plant and equipment and intangible fixed assets. The dividend policy is subject to reservation that the amount for each individual dividend distribution will depend, in particular, on the Company's overall indebtedness, expected capital expenditures and prospective acquisitions

In accordance with the updated dividend policy, the Ordinary General Meeting on July 19, 2018 adopted a resolution on allocation of net profit of the Company for 2017 in amount of PLN 4.5 billion for the reserve capital of the Company.

### 6.5. PGE S.A. shares on the stock exchange

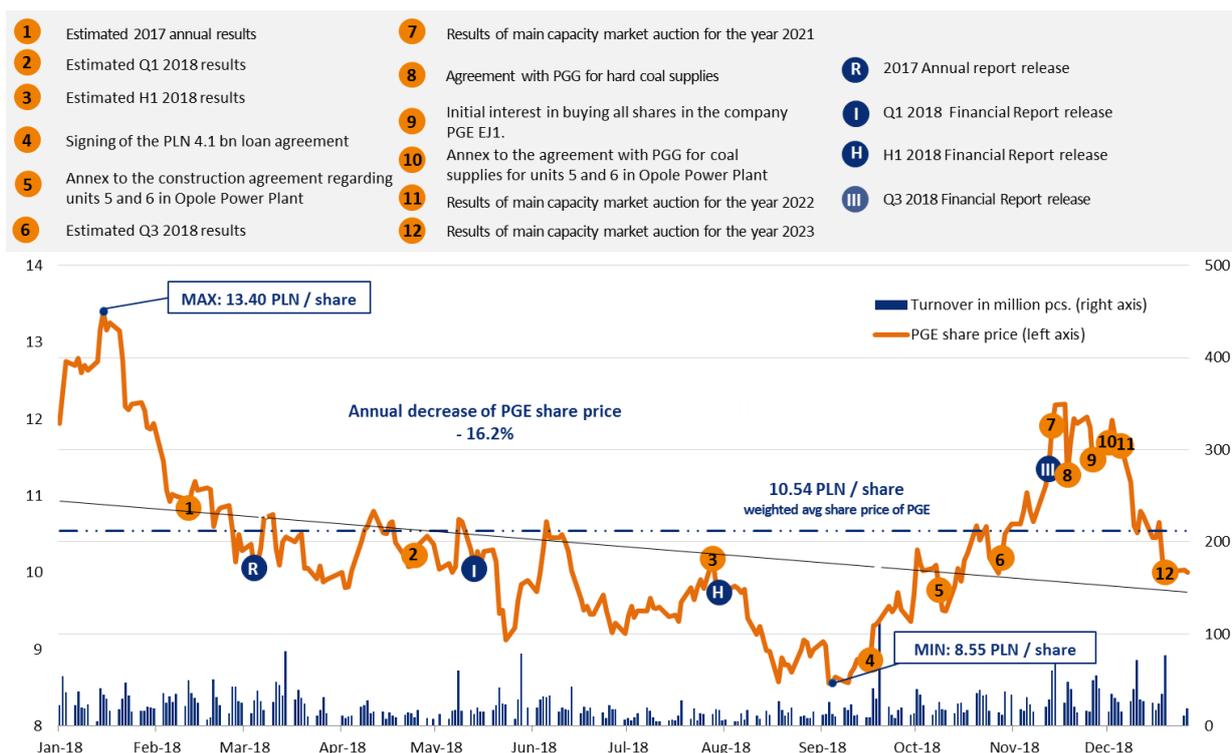
PGE shares are listed in the continuous trading system on the Main Market of Warsaw Stock Exchange ("WSE"). PGE has the largest market capitalization among Polish companies from power sector listed on WSE. PGE shares are included in the most important WSE indexes: WIG20 – the index of the largest and most liquid companies, WIG – the index of all companies from the Main Market, and WIG Energia – the index of power sector companies. Moreover, continuously since 2011, PGE S.A.'s shares are also listed in the RESPECT Index – index including Polish companies operating in compliance with best corporate governance, information governance and investors relations standards and also in adherence to environmental, social and personnel criteria. In 2018 PGE shares quotation were in range PLN 8.55-13.40. Average market capitalisation (value of all shares of the Company) in 2018 amounted to PLN 19.3 billion. Average trading volume amounted to 2.2 million shares per session and average trading amount reached PLN 23 million.

Chart: Quotes of PGE share price (in PLN) in relation to the WIG, WIG - ENERGY and RESPECT Index.



Source: Bloomberg.

Chart: Key events on the background of stock quotes of PGE in 2018 (PLN).



Source: Bloomberg, Company's data.

Table: Key data on PGE shares

	2018	2017
Turnover (PLN)	5 610 112 265	6 908 723 518
Average number of transactions per session (pcs)	2 174 005	2 274 482
Maximum price during the year (PLN) <sup>1</sup>	13.40	14.95
Minimum price during the year (PLN) <sup>1</sup>	8.55	10.04

<sup>1</sup>Stock prices relate to closing.

Source: Bloomberg.

All Company shares are bearer shares. Shares are not privileged, however the Company's Statute provides for special rights for the State Treasury, e.g. with respect to the appointment of members of the Supervisory Board. (more information on special powers for the State Treasury in section 8.4 of this report).

## 6.6. Rating

PGE S.A. holds ratings assigned by two rating agencies: Fitch Ratings Ltd. ("Fitch") and Moody's Investors Service Limited ("Moody's").

	Moody's	Fitch Ratings
Long-term company rating	Baa1	BBB+
Rating outlook	stable	stable
Date of rating assignment	September 2, 2009	September 2, 2009
Date of the latest rating confirmation	November 7, 2018	February 15, 2019
Poland long-term rating	A2	A-
Rating outlook	stable	stable

In 2018 and 2019 both rating agencies: Moody's and Fitch affirmed long-term rating of PGE S.A. at investment grade respectively at Baa1 and BBB+, both with stable outlook. Both agencies underline affirmation results from strong market position of PGE in the Polish electricity sector. Fitch in its latest release dated February 2019 especially underlines projected revenues from the capacity market, transfer of higher prices of CO<sub>2</sub> emission rights into the wholesale electricity prices, advanced stage of construction of power units in Opole and Turów PGE's expansion in more stable district heating sector. Rating acknowledges also high capital expenditures and planned acquisitions, likely return to dividend payment from 2020 and higher average CO<sub>2</sub> emission rate in comparison to the Western European peers. Moody's in its latest release dated November 2018 PGE's emphasises strong position as the largest energy group in Poland, increasing share of revenues from regulated activities following the acquisition of district heating assets from EDF in 2017, as well as strong balance sheet and relatively low net debt/EBITDA ratio. Among risk factors Moody's indicates high emission rate of conventional units in view of rising prices of CO<sub>2</sub> emission rights and lower amount of allowances granted free of charge, as well as high capital expenditures and high exposure to electricity prices volatility.

Ratings assigned by both agencies confirm PGE's long-term credibility on the credit market.

## 7. Other elements of the report

### 7.1. Significant changes in organisation of the Capital Group

Changes which occurred in the PGE Capital Group's structure in the period from January 1, 2018 until the publication date of this report, are presented in note 1.3 to consolidated financial statements and described below.

#### MERGERS

Segment	Acquiring company /acquired company	Date of transaction/ registration in the National Court Register	Comment
<b>Conventional Generation</b>	ELTUR - SERWIS sp. z o.o. /TOP SERWIS sp. z o.o.	February 26, 2018 April 12, 2018 merger registered in the National Court Register	On February 26, 2018 the Extraordinary Assembly of Partners of ELTUR - SERWIS sp. z o.o. (acquiring company) and TOP SERWIS sp. z o.o. (acquired company) adopted resolutions on merger of the companies in mode of art. 492 § 1 p. 1 of the Polish Commercial Companies Code (merger through acquisition), through transferring of all assets of the acquired company to the acquiring company in exchange for the shares, which the acquiring company allotted to PGE S.A. as a sole shareholder of the acquired company. The share capital of the acquiring company was increased by PLN 50 000, i.e. from PLN 34 824 500 to PLN 34 874 500.
<b>Renewables</b>	PGE Energia Odnawialna S.A. /PGE Energia Natury PEW sp. z o.o.	March 27 and 29, 2018 May 2, 2018 merger registered in the National Court Register	The Extraordinary General Meeting of PGE Energia Odnawialna S.A. (acquiring company) and the Extraordinary Assembly of Partners of PGE Energia Natury PEW sp. z o.o. (acquired company) on – respectively – March 29, 2018 and March 27, 2018 adopted resolutions on merger of the companies in mode of art. 492 § 1 p. 1 of the Polish Commercial Companies Code (merger through acquisition), through transferring of all assets of the acquired company to the acquiring company without issue of new shares in exchange for the shares in the share capital of the acquired company, pursuant to art. 516 of the Polish Commercial Companies Code and dissolution of the acquired company without its liquidation. PGE Energia Odnawialna S.A. was the sole shareholder of PGE Energia Natury PEW sp. z o.o.
<b>Conventional Generation</b>	PGE Energia Ciepła S.A./ Investment III B.V.	July 9, 2018 September 4, 2018 merger registered in the National Court Register	On July 9, 2018 an Extraordinary General Meeting of PGE Energia Ciepła S.A. (acquiring company) and an Extraordinary General Meeting of Investment III B.V., based in Amsterdam (the Netherlands) (acquired company) adopted resolutions on a cross-border merger pursuant to art. 492 § 1 point 1 in connection with art. 516 <sup>1</sup> of the Polish Commercial Companies Code (merger through acquisition), through the transfer onto the acquiring company of all of the acquired company's assets without issuing new shares of the acquiring company in exchange for the acquired company's shares, pursuant to art. 515 in connection with art. 516 <sup>1</sup> of the Polish Commercial Companies Code, and on dissolution of the acquired company without liquidation proceedings. PGE EC was the sole shareholder of Investment III B.V.

## DE-MERGERS

Segment	Spun off company /acquiring company	Date of transaction/ registration in the National Court Register	Comment
Conventional Generation	PGE GiEK S.A./ PGE Energia Ciepła S.A.	October 18, 2018 On January 2, 2019 de-merger was registered in the National Court Register	The Extraordinary General Meetings of PGE GiEK and PGE EC adopted resolutions on the division of PGE GiEK (divided company) through a carve out, pursuant to art. 529 § 1 point 4 of the Polish Commercial Companies Code, by way of transfer to PGE EC (acquiring company) of selected PGE GiEK assets in the form of six PGE GiEK branches (Branches), i.e.: (1) Zespół Elektrociepłowni Bydgoszcz, (2) Elektrociepłownia Gorzów, (3) Elektrociepłownia Zgierz, (4) Elektrociepłownia Lublin Wrotków, (5) Elektrociepłownia Kielce and (6) Elektrociepłownia Rzeszów. The Branches constitute an organised part of enterprise and are functionally related to the generation of electricity, generation of electricity and heat in cogeneration and distribution of heat and electricity. The transfer of the Branches to PGE EC was carried out by lowering PGE GiEK's share capital by PLN 406 847 180 and increasing PGE EC's share capital by PLN 763 432 450 through cancelling 40 684 718 shares of PGE GiEK, with nominal value of PLN 10 each, and issue of 76 343 245 new shares of PGE EC, with nominal value of PLN 10 each. As the sole shareholder of PGE GiEK, PGE S.A. acquired all new shares in PGE EC's increased share capital in exchange for the cancelled PGE GiEK shares.

## LIQUIDATION OF COMPANIES

Segment	Company	Date	Comment
Distribution	Centralny System Wymiany Informacji sp. z o.o. based in Poznań	December 4, 2018	On December 4, 2018 the Extraordinary Assembly of Partners of Centralny System Wymiany Informacji sp. z o.o., in which PGE Dystrybucja S.A. holds 4 shares representing 20% in the share capital, adopted a resolution on dissolution of company and commencing of liquidation process.

## **7.2. Significant off-balance sheet items**

Significant off-balance sheet items are described in note 28 to the consolidated financial statements.

## **7.3. Publication of financial forecasts**

PGE S.A. did not publish financial forecasts.

## **7.4. Entity authorised to audit of financial statements**

An entity authorised to audit stand-alone financial statements of PGE S.A. and consolidated financial statements of PGE Capital Group for 2018 is Ernst & Young Audyt Polska sp. z o.o. sp. k. on the ground of the agreement signed on July 17, 2017. More information regarding the co-operation of PGE Capital Group with the auditor is presented in note 32 to the consolidated financial statements.

## **7.5. Information on entity authorised to audit financial statements**

Based on a statement from the Supervisory Board, the Management Board of PGE S.A. announces that the entity authorised to audit separate financial statements and consolidated financial statements, carrying out the audit of the annual financial statements: separate and consolidated, was selected in accordance with the provisions of law, especially as regards audit firm selection and selection procedure:

- the audit firm and members of the team performing the audit met the conditions for preparing an impartial and independent report on audit of annual financial statements in accordance with the existing regulations, professional standards and professional ethics rules,
- the existing regulations concerning audit firm and lead statutory auditor rotation and mandatory grace periods are being observed,
- has a policy for selecting audit firms and a policy for provision of additional non-audit services to the issuer by the audit firm, entity related to the audit firm or a member of its network, including services conditionally exempted from the prohibition concerning audit firm services.

## 8. Statement on implementation of Corporate Governance

This Statement on implementation of corporate governance in PGE S.A. in 2017 was prepared on the basis of § 70 section 6 point 5 of the Regulation of the Minister of Finance dated March 29, 2018 on current and periodic information published by issuers of securities and on conditions under which such information may be recognized as being equivalent to information required by the regulations of law of a state which is not a member state.

### 8.1. Corporate governance principles which the Company was obliged to follow in 2018

In 2018 PGE S.A. was obliged to follow the corporate governance principles described in "Best Practices of WSE Listed Companies" (further: Best Practices). Best Practices were adopted with the Resolution of the Board of the Warsaw Stock Exchange ("WSE") no. 26/1413/2015 on October 13, 2015, which came into force on January 1, 2016 and should be obliged by PGE starting from that date.

Management Board of PGE S.A. approved Best Practices for application in the Company by the resolution no. 19/03/2016 of January 19, 2016. The Management Board of the Company acts with due diligence to obey the principles of Best Practices.

For the full text of the Best Practices, see the official corporate governance website of the Warsaw Stock Exchange: <https://www.gpw.pl/best-practice>.

### INFORMATION ON EXCEPTIONS IN APPLICATION OF THE CORPORATE GOVERNANCE PRINCIPLES

In 2018 the Company was applying the Best Practices with the exception of 2 recommendations IV.R.2, VI.R.1.

Recommendation IV.R.2 in Chapter IV „General Meeting, Shareholder Relations” on enabling its shareholders to participate in a General Meeting using electronic communication means.

The Management Board of PGE twice proposed to shareholders introduction to the Statute and to the Regulations of the General Meeting provisions enabling organization of general meetings in the way prescribed in Code of Best Practices. Such proposal was not approved by shareholders during Ordinary General Meeting of May 30, 2012 and during Extraordinary General Meeting of June 27, 2013. The Management Board of PGE does not exclude adoption of the above-mentioned rule in future.

In opinion of PGE's Management Board, non-compliance with the above rule will not affect the reliability of the information policy and does not cause a risk of limitations or difficulties for shareholders to participate in general meetings. The Company provides real-life broadcast of the general meeting.

Recommendation VI.R.1 in Chapter VI „Remuneration” on having remuneration policy and principles of determining remuneration for company's governing bodies and key managers.

In 2018 the Company did not have an uniform remuneration policy and principles determining the remuneration. The Company and its subsidiaries are bound to apply the provisions of various collective agreements, which significantly restricts the freedom of designing the remuneration policy. At the end of June 2017 the uniform rules were implemented with regard to remunerations of management boards and supervisory boards in companies being part of the Group, consistent with the rules determined in the Act of June 9, 2016 on the principles of determining the amount of remuneration for persons managing certain companies. From November 14, 2017 companies acquired from EDF Polska S.A. were included in the Group, in which the rules for remuneration of corporate bodies were adapted to those binding in PGE Group during 2018.

### INFORMATION ABOUT THE DIVERSITY POLICY

PGE Polska Grupa Energetyczna S.A. has not developed a diversity policy applicable to the Company's governing bodies and key managers. Recruitment process for the managing positions includes such elements as proper education, professional experience, qualifications and competences of the candidates and does not disqualify any candidates in terms of elements of the diversity policy that are indicated in the principle.

## DESCRIPTION OF THE BASIC CHARACTERISTICS OF INTERNAL CONTROL SYSTEMS AND RISK MANAGEMENT SYSTEMS USED IN THE COMPANY DURING PREPARATION OF THE FINANCIAL STATEMENTS AND CONSOLIDATED FINANCIAL STATEMENTS

The Company applies the following mechanisms of internal control and risk management during preparation of the financial statements: internal procedures which regulate the process, management mechanisms for information system used for transaction recording and financial reporting with protection mechanisms, principles of supervision over preparation of financial statements, principles of verification and evaluation of reports, internal audit, corporate risk management and other elements of control.

EU IFRS-compliant accounting policy of the PGE Capital Group is binding for the Group companies using IFRS for preparation of their statutory financial statements and at preparation of the IFRS-compliant reporting packages for the consolidation. Before every reporting period the companies subject to consolidation receive detailed guidelines from PGE S.A. with regard to method and closing date of the accounting books, preparation and submitting the reporting packages and template updated for a given period.

The Company keeps accounting books in the integrated information system. The system ensures division of competencies, coherent entries in the books and control between the general ledger and subsidiary ledgers. The system can be modified to ensure adequacy of the technical solutions to the changing accounting principles and legal standards.

Director of the Reporting and Tax Department of the Company is responsible for the preparation of stand-alone and consolidated financial statements. The management of the particular companies are responsible for preparation of the reporting packages under consolidation.

Statutory auditors perform an independent assessment of reliability and correct preparation of the financial statements of PGE S.A. and financial statements of companies subject to consolidation.

The PGE Group has implemented a multi-stage process of approving financial statements with the participation of Supervisory Boards. Stand-alone and consolidated financial statements of PGE S.A. are evaluated by the Supervisory Board. The Audit Committee operates within the Supervisory Board and is responsible, among others, for: monitoring the independence of the statutory auditor, monitoring the effectiveness of internal control systems, reviewing interim and annual financial statements of the. Stand-alone financial statements of the companies subject to consolidation are evaluated by the Supervisory Boards of such companies. The financial statements are approved by the General Meetings of the companies.

PGE S.A., as a company listed on the Warsaw Stock Exchange, complies with the guidelines included in the Best Practices of WSE Listed Companies concerning maintaining efficient internal audit, according to the size of the company and the type and scale of the business. In PGE S.A. and in the Capital Group internal audit is pursued by own structures, introduced and developed with the use international standards of professional internal auditors promoted by Institute of Internal Auditors (IIA). Audit structures cover all key companies of the Group, with the leading role of internal audit unit in PGE, including realisation of audit in the Group and co-ordination and supervision over audit structures in the Group companies.

Internal audit in PGE S.A. operates based on formally adopted Internal Audit Regulations, which defines audit as „activities independent and objective, which aims to increase value of PGE Capital Group and streamlining its operational activity. It includes systematic and harmonised method of assesment of processes: risk management, mechanism o internal controls and corporate governance and attributes to their improvement. It helps organization in achieving its goals, by delivering information on efficiency of those processes, as well as through advisory.” Internal audit covers all organisational units and business areas of PGE Group, excluding protection of classified information, which is regulated by act of February 9, 2018 on protection of classified information (Journal of Laws 2018, item 412). The results of the audits are presented to the Management Board and the Audit Committee.

## SHAREHOLDERS WITH A SIGNIFICANT STAKE

Shareholders holding directly or indirectly by subsidiaries at least 5% of the total votes at Company's General Meeting are presented in p. 8.4 of the foregoing report.

## SHAREHOLDERS WITH SPECIAL CONTROL POWERS

Company shares are ordinary, bearer shares listed at the regulated market of the Warsaw Stock Exchange. Company shares are not privileged.

Despite the fact that the Company shares are not privileged, the Statutes provides for special powers for the State Treasury as long as it is the shareholder of the Company. In accordance with statutory provisions, the State Treasury may demand in writing that the Management Board convene the General Meeting, demand that certain matters be placed on the agenda, submit draft resolutions pertaining to matters placed on the agenda of the General Meeting or matters which may be placed on the agenda.

The State Treasury is authorised to appoint one member of the Supervisory Board by means of a written statement submitted to the Management Board of the Company. Such nomination or dismissal takes effect from the date on which the relevant notification is delivered to the Management Board and does not require a General Meeting resolution. The State Treasury may exercise this power regardless of the voting right when appointing other members of the Supervisory Board.

On the ground of the Statutes, the State Treasury holds special right with regard to selection of the Supervisory Board members. Selection of half of members of the Supervisory Board, appointed by the General Meeting, shall be elected from among persons indicated by the State Treasury. The Supervisory Board selects the Chairperson of the Supervisory Board from among its members wherein the Chairperson of the Supervisory Board shall be elected from among persons indicated by the State Treasury. This State Treasury's right is valid until its stake in the Company falls below 20%.

## LIMITATIONS REGARDING EXERCISE OF THE VOTING RIGHTS FROM THE EXISTING SHARES

As from June 29, 2011 the Statutes of the Company provide the limitations regarding exercise of the voting rights in shares. The voting right of shareholders shall be limited in such manner that at the General Meeting, none of them may exercise more than 10% of the total number of votes existing in the Company as at the date of holding the General Meeting, subject to the provision that for the purposes of determining the obligations of entities acquiring considerable blocks of shares as provided for in the Act on public offerings, conditions for introducing financial instruments to an organised trading system and public companies of July 29, 2005, such limitation of the voting right shall be regarded as non-existent.

The above limitation does not apply to the State Treasury and shareholders acting with the State Treasury on the basis of agreements concerning the joint exercise of the voting right related to shares.

In addition, for the purposes of limiting the voting right, votes belonging to shareholders between whom there exists a relationship of domination or dependence (Shareholders Group) shall be cumulated; in the event that the cumulated number of votes exceeds 10% (ten per cent) of the total number of votes in the Company, it shall be subject to reduction.

The accumulation of votes shall consist in the summing of the number of votes remaining at the disposal of shareholders belonging to a Shareholders Group.

The reduction of votes shall consist in decreasing the total number of votes in the Company to which shareholders belonging to a Shareholders Group are entitled at the General Meeting to the threshold of 10% (ten per cent) of the total number of votes in the Company.

The accumulation and reduction of votes together with the detailed description of the shareholders between whom there exists a relationship of domination or dependence are governed by the principles included in the Company's Statutes.

Moreover, each shareholder who intends to participate in the General Meeting, directly or by proxy, shall be obliged, without a separate call, to notify the Management Board or the Chairperson of the General Meeting of the fact that he holds, directly or indirectly more than 10% (ten per cent) of the total number of votes in the Company. This obligation does not apply to the State Treasury. A person who has failed to comply or has complied improperly with that obligation to provide information may exercise the voting right exclusively from one share until the remedy of such failure to. The exercise of the voting right from the other shares by such person shall be ineffective.

Irrespective of the above provision, in order to establish a basis for the accumulation and reduction of votes, a shareholder, the Management Board, the Supervisory Board and the particular members of these bodies may demand that a shareholder provide information whether he is a person having the status of a dominant or dependent entity with respect to another shareholder. The right referred to in the preceding sentence shall also cover the right to demand that a shareholder disclose the number of votes that such shareholder holds independently or together with other shareholders.

At the time when the share of the Company's share capital held by the State Treasury falls below 5%, the limitation of the above voting right shall expire.

## LIMITATIONS REGARDING THE TRANSFER OF OWNERSHIP OF THE COMPANY'S SECURITIES

There are no limitations regarding the transfer of ownership of the Company's securities, that the Company is aware of, apart from the limitations regarding the shares of the Company that belong to the State Treasury, resulting from the Act of December 16, 2016 on rules of management of the state assets. Disposal of shares in violation of this prohibition is invalid.

### 8.2. Rules for amendments to the Company's Statutes

In accordance with provisions of the Code of Commercial Companies, any amendments to the Company's Statutes require a resolution to be passed by the General Meeting and an entry to the register of entrepreneurs. A resolution on amendments to the Company's Statutes is made with a majority of three fourth votes. The General Meeting of the Company may authorise the Supervisory Board to agree on the uniform text of the amended Company's Statutes or introduce other editing changes as specified in the resolution of the General Meeting. Amendments to the Company's Statutes shall be valid from the day an entry is made to the register of entrepreneurs.

## MODE OF OPERATION OF THE GENERAL MEETING OF THE COMPANY, ITS KEY POWERS AND THE RIGHTS OF SHAREHOLDERS AND THE MANNER OF THEIR EXECUTION

Rules of the General Meeting are determined in the Code of Commercial Companies and the Company's Statutes. The additional issues related to the activities of the General Meeting are regulated by the Rules of the General Meeting approved on March 30, 2010 by the Extraordinary General Meeting.

The Company's Statutes and the Rules of the General Meeting are available on the PGE's website at [www.gkpgge.pl](http://www.gkpgge.pl).

## CONVENING AND CANCELLING THE GENERAL MEETING.

The General Meeting is convened in the manner and in circumstances described in the Code of Commercial Companies and the Company's Statutes. The detailed method of convening and cancelling the General Meeting is defined in the Rules of the General Meeting.

Pursuant to the Statutes of the Company, the Management Board shall convene the General Meeting on its own initiative, at the written demand of the Supervisory Board or demand of the shareholder or shareholders representing at least one twentieth of the share capital or at the written demand of the State Treasury as long as the State Treasury remains a shareholder of the Company.

The General Meeting should be convened within two weeks of the demand, by the Supervisory Board, shareholder or the State Treasury. If the General Meeting is not convened within two weeks of the demand, the registry court may authorise the shareholder or shareholders making such a demand to convene the Extraordinary General Meeting. Announcement about the convening of the general Meeting of the Company and Materials issued to shareholders in connection with the General Meeting, in particular draft resolutions proposed for voting by the General Meeting and other essential materials are provided by the Company at least 26 days before the date of the General Meeting of the Company on the corporate website [www.gkpgge.pl](http://www.gkpgge.pl), in the manner specified for submitting current information pursuant to regulations on public offering and conditions governing the introduction of financial instruments to organised trading, and public companies.

Cancelling of the General Meeting or changing the date of the Meeting supervenes through announcement on the company's website. The Company makes efforts to ensure that cancelling of the General Meeting or changing the date of the Meeting creates the least negative results for the Company and the shareholders.

Cancelling of the General Meeting is possible only on the petitioners' permission or when holding of the meeting faces extraordinary obstacles or is nonrepresentational.

Cancelling of the General Meeting and changing the date of the Meeting shall occur promptly after occurrence of rationale justifying the cancelling or change of date, but not later than seven days before the date of the General Meeting, except when it is not possible or excessively difficult under the given circumstances, then the cancelling or change of date may occur at any time before the General Meeting date.

## COMPETENCIES OF THE GENERAL MEETING OF THE COMPANY.

According to the provisions of the Code of Commercial Companies and Company's Statutes the General Meeting's main competences include adoption of resolutions on the following matters:

- review and approval of the report of the Management Board on the activities of the Company, financial statements and the consolidated financial statements for the past financial year,
- granting approval of fulfilment of duties by the Members of the Supervisory Board and Members of the Management Board,
- decision on the distribution of profit or covering the loss,
- appointment and recall of Members of the Supervisory Board and determination of rules of remuneration for the Members of the Supervisory Board,
- acquisition and lease of the undertaking or its organised part and placing a limited material right thereon,
- concluding credit, loan, suretyship or similar agreement with a member of the Management Board, Supervisory Board, proxy, liquidator or in the name of any of such persons,
- increase and reduction of the share capital of the Company,
- issue of convertible bonds or preferential bonds, issue of subscription warrants,
- decisions regarding claims for repair of damage caused during founding of the company and management or supervision over the company,
- merger, transformation and division of the Company,
- redemption of shares,
- amendment to the Statutes and change of the subject of activities of the Company,
- dissolution and liquidation of the Company.

The sale and purchase of real property, perpetual usufruct or share in real properties does not require a resolution of the General Meeting.

In accordance with the changes adopted by the Extraordinary General Meeting in November 2018, the consent of the General Meeting is required for:

- the Company's disposal of shares/interests in a company with respect to which frequencies from the ranges 452.5-457.5 MHz and 462.5-467.5 MHz have been reserved pursuant to a decision on frequency reservation to be issued, after consultations with the minister competent for energy-related matters, by the President of the Electronic Communication Office,
- the determination of the manner of voting at the General Meeting of a company with respect to which frequencies from the ranges 452.5-457.5 MHz and 462.5-467.5 MHz have been reserved pursuant to a decision on frequency reservation to be issued, after consultations with the minister competent for energy-related matters, by the President of the Electronic Communication Office, on matters concerning amendments to such a company's statutes / agreement.

The General Meeting of Shareholders may vote on resolutions pertaining only to matters included on the detailed agenda, with reservation to art. 404 of the Code of Commercial Companies.

## PARTICIPATION IN THE GENERAL MEETING OF THE COMPANY

The right to participate in the General Meeting is available only to persons who are shareholders of the Company sixteen days before the date of the General Meeting (date of registration of participation in the General Meeting). Lienors and users, who have the voting right, may participate in the General Meeting, if they are registered in the stockholders' ledger as at the date of registration of participation in the General Meeting.

A shareholder may participate in the General Meeting provided that the shareholder presents a personal certificate confirming the right to participate in the General Meeting issued by the entity which keeps the securities account.

A shareholder participates in the General Meeting and exercises the right to vote in person or through the Proxy. Proxy to participate in the General Meeting and exercise the right to vote must be granted in writing or in electronic form. Proxy granted in electronic form should be sent to the e-mail address of the Company stated in the announcement on the General Meeting. From the date the General Meeting is convened, the Company provides a form with a specimen of proxy in electronic form on its website. The Proxy of a shareholder exercises all the rights of the shareholder unless proxy provides otherwise. If the shareholder has shares recorded in more than one securities account, the shareholder may appoint a Proxy to exercise rights in shares recorded in each account.

## VOTING AT THE GENERAL MEETING OF THE COMPANY

Resolutions of the General Meeting are passed with the absolute majority of votes, subject to other provisions of the Code of Commercial Companies and the Company's Statutes.

One Company share carries the right to one vote at the General Meeting of Shareholders.

Subject to governing provisions of the law and of the Statutes, the voting shall be open. A secret voting is administered during appointments of members of Company's authorities or liquidators, and motions for recalling or prosecuting and during voting on other personal matters. A secret voting should be also administered when requested by at least one of the shareholders present or represented at the General Meeting. The General Meeting may pass a resolution to override secret voting for matters pertaining to founding of a commission appointed by the General Meeting.

### 8.3. Composition and the description of operations of the management and supervisory bodies of the Company and committees of the supervisory body

#### MANAGEMENT BOARD

##### Management Board members

As at December 31, 2018 the Management Board consisted of:

Name and surname of the Management Board	Position
Henryk Baranowski	President of the Management Board
Wojciech Kowalczyk	Vice-President for Capital Investments
Marek Pastuszko	Vice-President for Corporate Affairs
Paweł Śliwa	Vice-President for Innovations
Ryszard Wasilek	Vice-President for Operations
Emil Wojtowicz	Vice-President for Finance



#### **Henryk Baranowski – President of the Management Board**

Mr. Henryk Baranowski is a graduate of Faculty of Electrical Engineering at the Warsaw University of Technology with specialty of power engineering. He also completed postgraduate studies in business management of power utilities on the energy market at the Warsaw University of Technology and postgraduate studies in financial management of companies at the Warsaw School of Economics. He also completed Executive MBA program at Business School of the Warsaw University of Technology, HEC School of Management, London Business School and Norwegian School of Economics and Business Administration.

In years 2013-2015 employed as the Director for Business Development, and later as the Director for Sales and Marketing of Energy Sector at Alstom Power Polska. From 2006 to 2008 held a position of the Vice-President of the Management Board in PGE, and in years 2001-2006 the President of the Management Board in PSE-Info Sp. z o.o. In period 1990-2001 associated with PSES.A., where he held a position of, among others, ICT Director. From November 2015 till March 2016 he held a position of the Undersecretary of the State in the Ministry of State Treasury supervising works of Key Companies Department and Corporate Governance Department.



**Wojciech Kowalczyk** – Vice-President for Capital Investments

Mr. Wojciech Kowalczyk graduated from the Foreign Trade Faculty of the Main School of Planning and Statistics (currently named Warsaw School of Economics).

Since March 2016 Mr. Wojciech Kowalczyk was the Undersecretary of the State in the Ministry of Energy. Between November 2014 and March 2016 he was the Secretary of the State and the Government Plenipotentiary for the restructuring of coal mining within structures of the Ministry of Economy, subsequently the Ministry of State Treasury and the Ministry of Energy.

In years 2012-2014 Mr. Wojciech Kowalczyk was the Undersecretary of the State in the Ministry of Finance, where he supervised the development of financial market, banking, insurance and capital sector and public debt. In years 2011-2012 he worked at Bank Gospodarstwa Krajowego, inter alia, as a Vice-President of the Management Board, responsible for financial markets, bank products and investment projects.

In years 1995-2001 and 2004-2010 Mr. Wojciech Kowalczyk was employed in Bank Handlowy, where he was responsible for bank's activities at the debt securities market. In years 2001-2004 he worked as a Director of Debt Securities Market at Merrill Lynch International in London.



**Marek Pastuszko** – Vice-President for Corporate Affairs

A legal counsel, graduated from Law and Administration Faculty at the University of Warsaw and from postgraduate studies on European Substantive Law at the University of Finance and Management in Warsaw.

Between October 2006 and July 2008 he was the President of the Management Board at PGE Energia S.A. As a Director of Law Section at the Organisation Department and as a Task Manager of the PGE's IPO Project he participated in the preparations of the Company for the IPO on the Warsaw Stock Exchange. For two years he worked as a legal counsel at the international law firm Bird & Bird. Since May 2010 Mr. Marek Pastuszko held a position of Deputy Director of Legal Department at the Gas Transmission Operator GAZ-SYSTEM. Earlier he was associated with the finance and insurance market. He was employed at Towarzystwo Ubezpieczeń i Reasekuracji Polisa and Towarzystwo Ubezpieczeń na Życie Polisa (insurance companies) inter alia as a Director of Law and Organization Department. He acted as a legal counsel at PTE Kredyt Banku S.A. (General Pension Society) and at the law firm Hunton & Williams, T. Kacymirow, J. Michalski, Z. Mrowiec. He was also employed in Telekomunikacja Polska as Director of the Department of Agreements Verification. In years 2003-2006 he was hired in Art Marketing Syndicate S.A. as a legal counsel and Coordinator of Legal Department.

He was also a Supervisory Board member in companies from power market (PSE-Operator, Agencja Rynku Energii, BOT Górnictwo i Energetyka and PGE RZE Dystrybucja).



**Paweł Śliwa** – Vice-President for Innovations

Mr. Paweł Śliwa graduated from Law and Administration Faculty at the Maria Curie-Skłodowska University in Lublin, branch in Rzeszów. He completed PhD studies on the Cardinal Stefan Wyszyński University in Warsaw. Completed attorney apprenticeship in Regional Bar Council in Rzeszów.

From March 1, 2016 till March 22, 2016 he held a position of the Supervisory Board member of PGE. Since November 2011 a judge at the Court of State. Since 2002 Mr. Paweł Śliwa has run a Law Firm in Gorlice. Since October 2010 a councilor in the legislative assembly of Małopolskie voivodship. In years 2005-2012 run a Solicitor's Partnership in Gorlice. In years 2006-2007 he held the position of the Vice-Chairman of the Supervisory Board of Ruch S.A



**Ryszard Wasilek** – Vice-President for Operations

Mr. Ryszard Wasilek graduated from the Faculty of Mechanical Engineering at the Szczecin University of Technology, and completed postgraduate studies District Heating and Heating of the Warsaw University of Technology, Faculty of Environmental Engineering.

From 2003 till 2016 he was the President of the Management Board of a district heating company Przedsiębiorstwo Energetyki Ciepłej Sp. z o.o. in Stargard. In years 1990-1994 Mr. Ryszard Wasilek served as the Deputy President of Stargard, responsible for economic policy and in years 1994-2003 worked at KielArt Sp. z o.o. in Szczecin as CEO – Chairman.

He's been a Member of the Council of the Stargard Chamber of Commerce (since 2004), a Member of the Regional Council of the Polish Chamber of District Heating – North-Western Region (since 2010), a Member of the National Council of the Polish Chamber of District Heating (since 2014). In years 1993-1994 Ryszard Wasilek was also the President of the Western Pomerania Municipal Community "Euroregion Pomerania".



**Emil Wojtowicz** - Vice-President for Finance

Mr. Emil Wojtowicz is a graduate of Warsaw School of Economics (Finances and Banking).

In years 2009-2016 Partner and Vice-President of the Management Board in SmartCon Sp. z o.o. – independent IT advisory company, specializing in implementation of Enterprise Performance Management (EPM) systems offered by Oracle and SAP. In years 2007-2008 he held the position of Vice-President of the Management Board in PGE, supervising finance department, including accounting, controlling and treasury areas. Mr. Emil Wojtowicz was also responsible for the preparatory process for the IPO of PGE.

In years 2001-2007 he was employed in Deloitte and was responsible for valuations, due diligence and economic fraud investigation. In years 2006-2007 he was responsible for financial advisory to the power sector companies, including among others PGE, PKN Orlen and Grupa Lotos. In years 1998-2001 employed at Ernst & Young Management Consulting Services (later Cap Gemini Ernst & Young) and was responsible for due diligence, valuations, business plans and advisory projects.

## RULES OF APPOINTING AND RECALLING THE MANAGEMENT PERSONNEL

The Management Board of the Company consists of from one to seven members, including President. The remaining members fulfil the functions of Vice-Presidents. Members of the Management Board are appointed for a joint three-year term of office.

The Management Board or individual members of the Management Board are appointed and recalled by the Supervisory Board, following a competitive procedure intended to test and evaluate the candidates' qualifications and to select the best candidate for the position of Management Board member, with the stipulation that candidates for this post must meet the conditions specified in § 15 sec. 3 and 4 of PGE's Articles of Association. In addition, each member of the Management Board may be recalled or suspended by the General Meeting or, for major reasons, suspended by the Supervisory Board. A resolution of the Supervisory Board on the suspension of a member of the Management Board must include a justification. The Supervisory Board may delegate members of the Supervisory Board to perform activities of the members of the Management Board on a temporary basis. A member of the Management Board submits his/her resignation in writing to the Supervisory Board at the address of the registered office of the Company.

## COMPETENCIES OF THE MANAGEMENT BOARD

The Management Board administers affairs of the Company and represents the Company in all court and out-of-court affairs. The Management Board deals with all the matters related to managing the affairs of the Company, not reserved by the law or Statutes for the General Meeting or the Supervisory Board.

Co-operation of two Members of the Management Board or one member of the Management Board with a proxy is required to make statements on behalf of the Company. In the event that the Management Board comprises one member, declarations of intent on behalf of the Company may be made by the sole Management Board member.

The modus operandi of the Management Board and internal division of competence among Management Board members as regards managing the Company's affairs are specified in regulations of the Management Board.

Pursuant to the Statutes of the Company, resolutions of the Management Board are required for all matters that go beyond the scope of ordinary acts of the Company.

In accordance with the PGE's Statutes, resolutions of the Management Board are required particularly for the following:

- the Company's acquisition or disposal of the following components of assets: real property, perpetual usufruct, interest in real property or perpetual usufruct, shares, interests or other participation rights,
- incurring credits and loans,
- granting sureties and guarantees by the Company and issuance of promissory notes,
- making donations and releasing from debts,
- concluding agreements not related to the Company's business activities specified in § 3 clause 1 of the Statutes,
- appointing commercial proxies,
- appointing Company proxies authorised to incur liabilities with a value exceeding EUR100,000, excluding (i) the powers of attorney to conclude agreements or incur liabilities related to trade in electricity and gas, related products and rights related thereto, and related to the purchase and sale of fuels and raw materials (ii) powers of attorney ad litem,
- adopting the Regulations of the Management Board,
- approving the Company's Organisational Regulations,
- establishing and closing branches,
- establishing of another company,
- adopting the Company's yearly and long-term financial plans, including investment, marketing and sponsorship plans,
- approving the rules of conducting sponsorship activity,
- adopting the Company's development strategy,
- determining the method of exercising the voting right at general meetings or general meetings of the companies in which the Company holds shares or interests,
- making advanced payments towards planned dividends,
- approving the materials submitted by the Management Board to the Supervisory Board.

Regardless of the above mentioned matters, resolutions of the Management Board are required for any matter referred by the Management Board to the Supervisory Board or the General Meeting.

The Statutes does not provide for detailed regulations which authorise Members of the Management Board to decide on the issue or buy-out of shares.

## ACTIVITIES AND ORGANISATION OF WORK OF THE MANAGEMENT BOARD

The Management Board manages Company's affairs in a transparent and effective manner based on and within the limits of the governing provisions of the law, including the Code of Commercial Companies, provisions of the Company's Statutes, Rules of the Management Board and other internal regulations governing in the Company.

The works of the Management Board are headed by the President of the Management Board. Meetings of the Management Board are convened by the President of the Management Board on his/her own initiative or on the motion of a member of the Management Board. Management Board meetings may take place without having been formally called, provided that all Management Board members were effectively notified about the meeting and none of the Management Board members object to the meeting taking place and to the proposed meeting agenda.

Minutes are taken for each meeting of the Management Board and signed by the members of the Management Board, not excluding persons who filed a dissenting opinion or were temporarily absent when adopting any of the resolutions. The minutes are stored in the Book of Minutes. Resolutions of the Management Board are passed with an absolute majority of votes in an open voting. In case of voting parity, the President of the Management Board has the decisive vote. A secret voting is administered by a member of the Management Board. All members of the Management Board must be properly notified of the scheduled meeting for the resolutions to be valid. A member of the Management Board may present an opposing opinion with a justification to be included in the minutes.

Resolutions may be made in writing or using means of direct remote communications.

Competencies of members of the Management Board regarding the ordinary management to operating areas in which individual members of the Management Board perform the leading role. For the functions performed, each member of the Management Board is assigned appropriate scope of responsibilities for the Company's affairs.

## SUPERVISORY BOARD

### Supervisory Board members

Until July 9, 2018 the Supervisory Board consisted of:

Name and surname	Position
<b>Anna Kowalik</b>	Chairman of the Supervisory Board
<b>Artur Składanek</b>	Vice-Chairman of the Supervisory Board – independent
<b>Grzegorz Kuczyński</b>	Secretary of the Supervisory Board - independent
<b>Janina Goss</b>	Supervisory Board Member - independent
<b>Tomasz Hapunowicz</b>	Supervisory Board Member - independent
<b>Witold Kozłowski</b>	Supervisory Board Member - independent
<b>Mieczysław Sawaryn</b>	Supervisory Board Member - independent

On July 9, 2018 Mr Witold Kozłowski resigned from the Supervisory Board.

From July 10, 2018 until July 19, 2018 the Supervisory Board consisted of:

Name and surname	Position
<b>Anna Kowalik</b>	Chairman of the Supervisory Board
<b>Artur Składanek</b>	Secretary of the Supervisory Board - independent
<b>Grzegorz Kuczyński</b>	Supervisory Board Member - independent
<b>Janina Goss</b>	Supervisory Board Member - independent
<b>Tomasz Hapunowicz</b>	Supervisory Board Member - independent
<b>Mieczysław Sawaryn</b>	Supervisory Board Member - independent

Due to the expiry of the 10th term of the Supervisory Board, on July 19, 2018 the Ordinary General Meeting of the Company appointed eight members to the Supervisory Board of the 11<sup>th</sup> term as from July 20, 2018: Anna Kowalik, Artur Składanek, Grzegorz Kuczyński, Mieczysław Sawaryn, Janina Goss, Tomasz Hapunowicz, Jerzy Sawicki and Artur Bartoszewicz.

In connection with the above, from July 20, 2018 until November 14, 2018 the Supervisory Board consisted of:

Name and surname	Position
Anna Kowalik	Chairman of the Supervisory Board
Artur Składanek	Vice-Chairman of the Supervisory Board – independent
Grzegorz Kuczyński	Secretary of the Supervisory Board - independent
Artur Bartoszewicz	Supervisory Board Member - independent
Janina Goss	Supervisory Board Member - independent
Tomasz Hapunowicz	Supervisory Board Member - independent
Mieczysław Sawaryn	Supervisory Board Member - independent
Jerzy Sawicki	Supervisory Board Member - independent

On November 14, 2018 the Extraordinary General Meeting of the Company recalled Mr Artur Bartoszewicz from the Supervisory Board.

On November 14, 2018 the Extraordinary General Meeting of the Company appointed Mr Radosław Winiarski to the Supervisory Board.

As at the publication date of this report, the Supervisory Board of the Company consists of:

Name and surname	Position
Anna Kowalik	Chairman of the Supervisory Board
Artur Składanek	Vice-Chairman of the Supervisory Board – independent
Grzegorz Kuczyński	Secretary of the Supervisory Board - independent
Janina Goss	Supervisory Board Member - independent
Tomasz Hapunowicz	Supervisory Board Member - independent
Mieczysław Sawaryn	Supervisory Board Member - independent
Jerzy Sawicki	Supervisory Board Member - independent
Radosław Winiarski	Supervisory Board Member

## RULES OF APPOINTING AND RECALLING OF THE SUPERVISORY PERSONNEL

According to the valid Statutes, Members of the Supervisory Board are appointed for a joint term of office of three years. The Supervisory Board consists of five to nine members appointed and recalled by the General Meeting. The Supervisory Board elected by way of group voting shall consist of five members. Member of the Supervisory Board may be appointed and dismissed by the General Meeting at all times, with the exception of the Supervisory Board member appointed by the State Treasury by way of a written declaration submitted to the Management Board (State Treasury's entitlement is valid until it remains a shareholder). Moreover, a half of members of the Supervisory Board (except the Supervisory Board member mentioned in the previous sentence), shall be elected from among persons identified by the State Treasury, until its stake in the share capital falls below 20%. At the time when this right of the State Treasury expires, another shareholder with the highest stake in the Company's share capital acquires that right, provided that he holds at least 20% in the Company's share capital.

According to the provisions of the Statutes, the Supervisory Board shall include at least one person appointed by the General Meeting from among persons meeting the criteria of independence specified in the principles of corporate governance adopted by the Board of the Warsaw Stock Exchange. Proposing a candidate for this position a shareholder nominating such candidate shall be obliged to submit to the minutes of the General Meeting such candidate's written declaration confirming his/her independency.

The State Treasury's failure to appoint one member of the Supervisory Board or the General Meeting's failure to elect members of the Management Board meeting the criteria of independence or the absence of such persons in the composition of the Supervisory Board shall not prevent the Supervisory Board from adopting valid resolutions.

## ACTIVITIES AND ORGANISATION OF THE SUPERVISORY BOARD

The operating procedure of the Supervisory Board is described in the Statutes of the Company and in the Rules of the Supervisory Board. The Supervisory Board performs its obligations collectively, however, it may delegate individual members for temporary and independent performance of certain supervisory activities. The Supervisory Board meets as required, not less often than once every two months.

Meetings of the Supervisory Board are convened by the Chairman of the Supervisory Board or the Vice-Chairman in the absence of the Chairman. The meeting of the Supervisory Board is convened by sending out a written invitation to all members of the Supervisory Board at least seven days before the schedule date of the meeting. This period of seven days may be shortened to two days for major reasons. The Meeting of the Supervisory Board may be also convened on demand of each member of the Supervisory Board or the motion of the Management Board (the person filing the motion proposes the agenda). Then the meeting should be convened within two weeks. If the Chairman of the Supervisory Board fails to convene the meeting within that period, the person filing the motion may convene the meeting on his/her own, stating the date, place and proposed agenda. The agenda may be changed if all members of the Supervisory Board are present at the meeting and no one objects to the change.

Supervisory Board meetings may take place without having been formally called, provided that all Supervisory Board members are present at the meeting and none of the Supervisory Board members object to the meeting taking place and to the proposed meeting agenda.

The Supervisory Board passes resolutions if at least half of the members of the Supervisory Board are present at the meeting and all the members have been invited. The Supervisory Board passes resolutions in an open voting. A secret voting is administered when requested by a member of the Supervisory Board, and during voting on personal matters. Resolutions of the Supervisory Board may be made in writing or using means of direct remote communications. The latter cannot be used for resolutions on the appointment or recalling of the Chairman, Vice-Chairman and Secretary of the Supervisory Board, and appointment, recalling or suspending a member of the Management Board oraz determining the remuneration and other contractual terms and executing agreements with Management Board members.

## COMPETENCIES OF THE SUPERVISORY BOARD

The Supervisory Board maintains a continuous supervision over activities of the Company in all areas of the Company's activities pursuant to the provisions of the Statutes.

The Statutes of the Company and the Rules of the Supervisory Board are available on the corporate website at [www.gkpge.pl](http://www.gkpge.pl).

## COMMITTEES

In accordance with the Company's Statutes, the Rules of the Supervisory Board or a resolution of the General Meeting may provide for establishment of committees within the Supervisory Board, in particular the audit committee and the appointment and remuneration committee. The current Rules of the Supervisory Board provide that the Supervisory Board may appoint standing or ad hoc committees, acting as collective advisory and opinion-making bodies of the Supervisory Board. The particular goal of the committees is to provide the Supervisory Board with opinions and recommendations on matters within the competencies of the committees. The committees are established by the Supervisory Board out of its members. The committee consists of 3 to 5 persons. The committee appoints a chairman out of its members. The chairman convenes meetings of the committee, manages works of the committee and represents the committee in relations with the authorities and employees of the Company. The mandate of a committee member expires with the expiry of the mandate of the member of the Supervisory Board, resignation from membership in the committee or recalling from the committee by the Supervisory Board. Each Member of the Supervisory Board may participate in committee meetings. The committee chairman may invite to the meetings members of the Management Board, Company employees and other persons whose participation is advisable. Decisions of the committee are made on a consensus basis, unless the regulations of a given committee state otherwise. The following standing committees are currently part of the Supervisory Board: the Audit Committee, the Strategy and Development Committee, the Appointment and Remuneration Committee, and the Corporate Governance Committee.

Range of competencies of particular Committees of the Supervisory Board is presented in details in the Rules of the Supervisory Board that is available on the corporate website at [www.gkpge.pl](http://www.gkpge.pl)

### The Audit Committee

The Audit Committee is a collegial advisory and opinion-forming body at the Supervisory Board of PGE Polska Grupa Energetyczna S.A. and its main objectives are as follows:

- submission to the Supervisory Board of recommendations and opinions on matters related to assessing the correctness and effectiveness of internal control at PGE Polska Grupa Energetyczna S.A. and PGE Group,
- cooperation with the statutory auditors of PGE Polska Grupa Energetyczna S.A.,
- performance of the functions specified in the Act on statutory auditors, audit firms and public oversight (Polish Journal of Laws of 2017, item 1089)

The Supervisory Board Audit Committee had the following members in 2018: Mr. Grzegorz Kuczyński (Chairperson of the Audit Committee), Mrs. Anna Kowalik, Mrs. Janina Goss, Mr. Artur Składanek, Mr. Artur Bartoszewicz, Mr. Radosław Winiarski.

The Audit Committee Members met the requirements specified in the Act on statutory auditors, audit firms and public oversight (Polish Journal of Laws of 2017, item 1089), i.e.:

- independence criterion: Mrs. Janina Goss, Mr. Grzegorz Kuczyński, Mr. Artur Składanek, Mr. Artur Bartoszewicz,
- having knowledge and skills in accounting or auditing financial statements due to their education and experience: Mrs. Anna Kowalik, Mrs. Janina Goss, Mr. Grzegorz Kuczyński, and Mr. Radosław Winiarski,
- having knowledge and skills in the industry in which the Company operates due to their education and professional experience: Mrs. Anna Kowalik, Mr. Artur Składanek and Mr. Radosław Winiarski.

The CVs of Supervisory Board Audit Committee Members, containing details on their education and professional experience and confirming their compliance with the requirements specified in the Act on statutory auditors, audit firms and public oversight (Polish Journal of Laws of 2017, item 1089), as referred to above, are available at the website of PGE S.A.: [www.gkpgge.pl](http://www.gkpgge.pl) and in current reports 16/2018 and 32/2018.

Details on the composition of the Audit Committee in 2018 are presented in a further part of this report.

The Supervisory Board Audit Committee at PGE Polska Grupa Energetyczna S.A. held 12 meetings in 2018.

Given the need to determine detailed tasks and operational rules for the Audit Committee as a consequence of new tasks being assigned to audit committees following entry into force of the act on statutory auditors, audit firms and public oversight (Journal of Laws of 2017, item 1089), Regulations for the Audit Committee at the Supervisory Board of PGE Polska Grupa Energetyczna S.A. were adopted in 2017.

On October 10, 2017 the Audit Committee at the Supervisory Board of PGE Polska Grupa Energetyczna S.A. adopted a Policy and Procedure for selecting audit firms to conduct audits and a Policy for providing services unrelated to audit by the audit firm performing the audit, its related parties and members of this audit firm's network ("Permitted services policy").

In accordance with the adopted Permitted services policy, a statutory auditor or audit firm conducting a statutory audit at PGE Polska Grupa Energetyczna S.A. or any of its network members may not provide any prohibited non-audit services directly or indirectly to PGE Polska Grupa Energetyczna S.A. and PGE Group companies.

Pursuant to Regulation (EU) No 537/2014 of the European Parliament and of the Council of 16 April 2014 on specific requirements regarding statutory audit of public-interest entities and repealing Commission Decision 2005/909/EC (EU Official Journal L.2014.158.77) and the Act on statutory auditors, audit firms and public oversight (Polish Journal of Laws of 2017, item 1089), prohibited non-audit services, in accordance with the Permitted services policy, are all services with the following exceptions:

- conducting economic and financial due diligence,
- issuing of comfort letters in connection with prospectuses issued by the audited entity, conducted in compliance with the national standard for related services and consisting of agreed procedures,
- assurance services as regards pro forma financial information, earnings forecasts or estimated results published in a prospectus of the audited entity,
- auditing of historic financial information for the prospectus referred to in Commission Regulation (EC) No 809/2004 of 29 April 2004 implementing Directive 2003/71/EC of the European Parliament and of the Council as regards information contained in prospectuses as well as the format, incorporation by reference and publication of such prospectuses and dissemination of advertisements,

- verification of consolidation packages,
- confirming compliance with conditions included in credit agreements based on analysis of financial information from financial statements audited by the audit firm,
- assurance services concerning reporting on corporate governance, risk management and corporate social responsibility,
- services consisting of evaluating the compliance of information disclosed by financial institutions and investments firms with information disclosure requirements concerning capital adequacy and variable pay components,
- assurances concerning financial statements or other financial information intended for supervision authorities, supervisory board or other supervisory body of the company or owners, exceeding the scope of statutory audit and intended to help these entities in compliance with their statutory obligations,
- open workshops, thematic conferences, industry meetings or other events that are open in nature and are not prepared for or adapted to the needs of PGE S.A., PGE Group companies or their employees.

The provision of these services by a statutory auditor or audit firm performing a statutory audit of PGE S.A. or by members of the network to which the statutory auditor or audit firm belongs for PGE S.A. and PGE Group Companies is possible only in as far as this is not linked to tax policy after the Audit Committee at PGE S.A.'s Supervisory Board carries out an assessment of independence threats and precautions as referred to in the Act on statutory auditors, audit firms and public oversight (Polish Journal of Laws of 2018, item 1089).

In 2018, the audit firm Ernst & Young Audyt Polska sp. z o.o. sp.k. auditing the financial statements of PGE S.A. provided permitted non-audit services based on consent given by way of resolutions by the Supervisory Board Audit Committee. Prior to these services being rendered, the Audit Committee performed an assessment of independence threats and precautions, as referred to in the Act on statutory auditors, audit firms and public oversight (Polish Journal of Laws of 2018, item 1089). Furthermore, the Audit Committee periodically analyses reports from performance of permitted services by audit firms for PGE Group companies.

In accordance with the Policy and Procedure for selecting audit firms to conduct audits, selecting audit firms to audit the Company's financial statements and PGE Group's consolidated financial statements takes place in accordance with the rules specified in this Policy and Procedure, with observance of the laws, especially the Act on statutory auditors, audit firms and public oversight (Polish Journal of Laws of 2018, item 1089), Accounting Act (Polish Journal of Laws of 2018, item 395) and Regulation (EU) No 537/2014 of the European Parliament and of the Council of 16 April 2014 on specific requirements regarding statutory audit of public-interest entities and repealing Commission Decision 2005/909/EC (EU Official Journal L.2014.158.77), and taking into account guidelines from the Prime Minister on procedures for selecting and cooperating with audit firms auditing the annual financial statements of companies with a State Treasury shareholding.

The Supervisory Board selects the audit firm to conduct an audit of financial statements.

The first agreement concerning the audit of financial statements with an audit firm is executed for a period not shorter than two years, with an option to extend it for subsequent two-year periods.

The maximum time for continuous financial statement audit commissions by the same audit firm or an audit firm linked to this audit firm or any member of a network operating in EU member states to which these audit firms belong may not exceed five years, with the stipulation that the lead statutory auditor may audit financial statements again after at least three years from the end of the most recent audit of financial statements.

Executing an agreement for audit of financial statements is preceded by a procedure intended to ensure that the audit firm is selected in an independent and impartial manner.

The procedure to select an audit firm is prepared and conducted in accordance with rules for fair competition, equal treatment of audit firms, proportionality and transparency.

Prior to starting the procedure to select an audit firm, the Audit Committee specifies and presents to the Supervisory Board a recommendation on the procedure to select an audit firm.

By way of a resolution and based on this recommendation, the Supervisory Board sets at least the following:

- criteria for selecting the audit firm,
- methodology for evaluating proposals for audit of the Company's financial statements,
- the content of the notice or invitation to submit proposals for audit of the Company's financial statements.

Based on a Supervisory Board resolution, the procedure to select an audit firm is conducted by a tender commission, appointed in accordance with the Procurement Procedure in place at PGE Polska Grupa Energetyczna S.A.

On July 17, 2017, an agreement was executed with the audit firm Ernst & Young Audyt Polska sp. z o.o. sp.k., based in Warsaw. The subject of the agreement was audit of annual and consolidated financial statements for 2017 and 2018.

The procedure to select a statutory auditor preceding the selection of Ernst & Young Audyt Polska sp. z o.o. sp.k. had began and ended before the Act on statutory auditors, audit firms and public oversight (Polish Journal of Laws of 2018, item 1089) entered into force. Given the above, in accordance with the interim provision specified in art. 283 of the aforementioned act, art. 130 sec. 2-7 of the aforementioned act did not apply in selecting the above-mentioned audit firm. Thus, the provision concerning the conditions for and content of the Audit Committee recommendation did not apply in selecting Ernst & Young Polska sp. z o.o. sp.k.

### The Corporate Governance Committee

The Corporate Governance Committee evaluates the implementation of the corporate governance principles in the Company and presents the Supervisory Board with initiatives in this area, provides opinions on normative acts and other documents of the Company presented to the Supervisory Board, which considerably affect the corporate governance, initiates and prepares proposals of changes for normative acts of the Supervisory Board.

### Strategy and Development Committee

The Strategy and Development Committee provides opinions and recommendations to the Supervisory Board regarding planned investments which considerably affect the Company's assets.

### Appointment and Remuneration Committee

The Appointment and Remuneration Committee is responsible for facilitating achievement of strategic goals of the Company by presenting the Supervisory Board with opinions and motions on the development of the management structure, including remuneration system and selection of properly qualified personnel.

Table: Composition of the committees in 2018

Name and surname of the member of the Supervisory Board	Audit Committee	Corporate Governance Committee	Strategy and Development Committee	Appointment and Remuneration Committee
Artur Bartoszewicz	Member from 24.07.2018 till 14.11.2018		Member from 24.07.2018 till 14.11.2018	
Janina Goss	Member			Member
Tomasz Hapunowicz		Member from 23.01.2018 Chairman from 24.07.2018	Member from 23.01.2018	
Anna Kowalik	Member		Member od 23.01.2018	Member
Witold Kozłowski		Member Chairman till 09.07.2018	Member till 09.07.2018	Member till 09.07.2018
Grzegorz Kuczyński	Member Chairman	Member	Member from 23.01.2018 till 24.07.2018	
Mieczysław Sawaryn			Member	Member Chairman
Jerzy Sawicki		Member from 24.07.2018	Member from 24.07.2018	Member from 24.07.2018
Artur Składanek	Member		Member Chairman	
Radosław Winiarski	Member from 20.11.2018		Member from 20.11.2018	

## REMUNERATION OF THE MANAGEMENT OF PGE S.A.

### Rules with respect to the determination of remuneration for the Management Board Members of PGE S.A.

Rules with respect to the determination of remuneration for the Management Board Members of PGE S.A.

On September 9, 2016, the Act of June 9, 2016 on the principles of determining the amount of remuneration for persons managing certain companies – so called new Public Sector Salary Cap Act – came into force. The new Public Sector Salary Cap Act determines, inter alia, principles for determining remuneration in companies with a stake of the State Treasury (for example PGE), in particular determines the way in which the remuneration of the members of the Management Board and Supervisory Board is set (rules for determining remuneration of the Management Board and Supervisory Board are adopted by the General Meeting and the Supervisory Board adopts resolutions on specific conditions of the management board remuneration). The act also determines select provisions of management services agreements executed with management board members.

On December 14, 2016, the Company's Extraordinary General Meeting, convened at the request of the Minister of Energy representing the State Treasury, adopted resolution 4 on determining the rules for remuneration for members of the Management Board of PGE Polska Grupa Energetyczna S.A., subsequently changed through resolution 37 of the Company's Ordinary General Meeting of June 27, 2017. According to this resolution, remuneration for Management Board members consists of a fixed component in the form of a monthly base salary, and a variable component constituting supplementary pay for the Company's financial year, depended on progress in achieving management objectives. According to these General Meeting resolutions, the Supervisory Board of PGE Polska Grupa Energetyczna S.A. adopted resolutions in 2017 on the execution of management services agreements with Management Board members that correspond to the rules of the new Public Sector Salary Cap Act. In 2018 the Supervisory Board determined management objectives and indicators for assessing their performance.

Table: Remuneration and benefits received in 2018 by the Members of the Management Board of PGE S.A. from PGE S.A.

Name and surname of the Management Board member	Remuneration and benefits achieved by the Management Board members in PGE S.A. in 2018 (in PLN)
Henryk Baranowski	792 680.40 <sup>1</sup>
Wojciech Kowalczyk	739 835.04 <sup>1</sup>
Marek Pastuszko	739 835.04 <sup>1</sup>
Paweł Śliwa	739 835.04 <sup>1</sup>
Ryszard Wasilek	739 835.04 <sup>1</sup>
Emil Wojtowicz	739 835.04 <sup>1</sup>

<sup>1</sup>Item including remuneration for the period of service at the Management Board.

The total remuneration achieved by the Management Board members in 2018 amounted to PLN 4.49 million (according to PIT11). In cost perspective (including provisions), in 2018 the remuneration of all persons who acted as Management Board members of PGE S.A., amounted to PLN 7.86 million.

### Rules with respect to the determination of remuneration for the Supervisory Board Members of PGE S.A.

The amounts of remuneration of the Supervisory Board Members of PGE S.A. were determined by the resolution no. 5 of the Extraordinary General Meeting of December 14, 2016 concerning the principles of determining the amount of remuneration for members of the Supervisory Board of PGE S.A., pursuant to which the monthly remuneration of members of the Supervisory Board was set as a product of the average remuneration in the business sector exclusive of profit-based bonuses in the fourth quarter of the previous year as announced by the President of the Central Statistical Office of Poland and the following factor: 1.7 (for the chairperson of the Supervisory Board), 1.5 (for the other members of the Supervisory Board). The level of remuneration set for members of the Supervisory Board of PGE Polska Grupa Energetyczna S.A. corresponds to the rules specified in the new Public Sector Salary Cap Act.

Table: Remuneration received by the Supervisory Board Members of PGE S.A. who in 2018 performed their functions in PGE S.A.

Name and surname of the Supervisory Board member	Remuneration achieved by the Supervisory Board members in PGE S.A. in 2018 (in PLN)
Anna Kowalik	89 837.16
Janina Goss	79 268.04
Mieczysław Sawaryn	79 268.04
Artur Składanek	79 268.04
Grzegorz Kuczyński	79 268.04
Witold Kozłowski	41 551.80
Tomasz Hapunowicz	77 563.35
Artur Bartoszewicz	25 456.70
Jerzy Sawicki	35 585.38
Radosław Winiarski	10 348.90

Total remuneration earned in 2018 by the members of the Supervisory Board in PGE S.A. amounted to PLN 597 thousand. In cost perspective (including provisions), the remuneration of all persons who acted as Supervisory Board members amounted to PLN 685 thousand in 2018.

## 8.4. Information about shares and other securities

### SHARE CAPITAL AND OWNERSHIP STRUCTURE

As at January 1, 2018 and December 31, 2018 the share capital of PGE S.A. amounted to PLN 19 165 048 497.25 PLN and split into 1 869 760 829 shares with a nominal value of PLN 10.25 each.

Table: Share capital of the Company.

Series/issue	Type of shares	Type of privilege	Number of shares	Value of series/issue at nominal value	Capital payment method
"A"	ordinary	n/a	1 470 576 500	15 073 409 125.00	contribution in kind/cash
"B"	ordinary	n/a	259 513 500	2 660 013 375.00	cash
"C"	ordinary	n/a	73 228 888	750 596 102.00	merger with PGE GiE S.A.
"D"	ordinary	n/a	66 441 941	681 029 895.25	merger with PGE Energia S.A.
<b>Total</b>			<b>1 869 760 829</b>	<b>19 165 048 497.25</b>	

Table: Ownership structure of the Company's share capital as at December 31, 2018\*.

	State Treasury		Other shareholders *		Total	
	nominal value of shares (PLN)	% share in the share capital and votes	nominal value of shares (PLN)	% share in the share capital and votes	nominal value of shares (PLN)	% share in the share capital and votes
<b>Akcje na 31.12.2018</b>	10 998 087 004.50	57.39	8 166 961 492.75	42.61	19 165 048 497.25	100.00

\* Ownership structure presented on the basis of information available to the Company.

All of the Company shares have been paid.

Although the Company's shares are not privileged, the Statutes of the Company provide for special rights of the State Treasury until it remains a shareholder of the Company.

## SHAREHOLDERS WITH A SIGNIFICANT STAKE

According to the best knowledge, on the ground of the letter from the Ministry of the State Treasury of April 27, 2016, the State Treasury holds 1 072 984 098 ordinary shares of the Company, representing 57.39% of the Company's share capital and entitling to 1 072 984 098 votes on the General Meeting of the Company, constituting 57.39% of total votes.

Table: Shareholders holding directly or indirectly by subsidiaries at least 5% of the total votes at the General Meeting of PGE S.A.

Shareholder	Number of shares	Number of votes	% in total votes on General Meeting
State Treasury	1 072 984 098	1 072 984 098	57.39%
Others	796 776 731	796 776 731	42.61%
<b>Razem</b>	<b>1 869 760 829</b>	<b>1 869 760 829</b>	<b>100.00%</b>

### Treasury shares

As at December 31, 2017 PGE S.A. and subsidiaries did not hold any treasury shares.

### Shares of the parent company owned by the members of management and supervisory authorities

According to the best knowledge of the Management Board of the Company, members of management and supervisory authorities of the Company as of the date of submission of this report and as of the date of publishing of the consolidated report for the third quarter of 2018 did not hold shares of PGE S.A.

Table: PGE S.A. shares held by the persons acting on behalf of material direct subsidiaries of PGE S.A.

Shareholder	Position	Number of shares as of submission date of the annual report	Nominal value of shares as of submission date of the annual report (PLN)
<b>Management Board of PGE GiEK S.A.</b>		<b>9 768</b>	<b>100 122</b>
Krzysztof Domagała	Member of the Management Board	7 869	80 657
Andrzej Kopertowski	Vice-President of the Management Board	1 211	12 413
Stanisław Żuk	Vice-President of the Management Board	688	7 052
<b>Management Board of PGE Obrót S.A.</b>		<b>3 416</b>	<b>35 014</b>
Jan Mądrzak	Vice-President of the Management Board	3 416	35 014
<b>Management Board of PGE Dom Maklerski S.A.</b>		<b>72</b>	<b>738</b>
Rafał Kucharski	Member of the Management Board	72	738
<b>Management Board of KOGENERACJA S.A.</b>		<b>300</b>	<b>3 075</b>
Paweł Strączyński	Vice-President of the Management Board	300	3 075

### Control system of employees share scheme

In 2017, PGE S.A. did not maintain any employees share schemes.

### Use of proceeds from issues

In 2017, PGE S.A. did not maintain any employees share schemes.

Proceeds from the issue of bonds were used for financing of the on-going activities as well as for financing of the investments conducted by PGE Group companies (see p. 5.6 of this report).

## **9. Statement on non-financial data**

A separate report on non-financial data of PGE Polska Grupa Energetyczna S.A. and PGE Group for 2018, drafted in accordance with art. 49b sec. 9 of the Accounting Act, was published together with the Management Board's report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Group for 2018 and is available at PGE Group's website in the section dedicated to financial data for 2018: <https://www.gkpge.pl>.

## **10. Statements of the Management Board**

### **STATEMENT ON THE RELIABLE PREPARATION OF THE FINANCIAL STATEMENTS**

To the best knowledge of the Management Board of PGE S.A., the annual separate financial statements and consolidated financial statements and comparable data were prepared in accordance with the governing accounting principles, present a fair, true and reliable view of the material and financial situation as well as financial result of the parent company and of PGE Capital Group.

The report of the Management Board on the activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group presents a true view of the development, achievements and situation of PGE Polska Grupa Energetyczna S.A. and the Capital Group, and provides a description of the basic risks and threats.

### **STATEMENT ON THE ENTITY AUTHORISED TO AUDIT THE FINANCIAL STATEMENTS**

The Management Board of PGE S.A. declares that the entity authorised to audit the separate and consolidated financial statements, which audits the annual financial statements: separate and consolidate, has been appointed in accordance with provisions of the law. The entity and the statutory auditors fulfilled all the requirements for issuing an unbiased and independent opinion on the audit, in accordance with the governing provisions and professional standards.

## 11. Approval of the Management Board's Report

The foregoing Management Board's Report on activities of PGE Polska Grupa Energetyczna S.A. and PGE Capital Group was approved for publication by the Management Board of the parent company on March 8, 2019.

Warsaw, March 8, 2019

Signatures of members of the Management Board of PGE Polska Grupa Energetyczna S.A.

<b>President of the Management Board</b>	<b>Henryk Baranowski</b>
<b>Vice-President of the Management Board</b>	<b>Wojciech Kowalczyk</b>
<b>Vice-President of the Management Board</b>	<b>Marek Pastuszko</b>
<b>Vice-President of the Management Board</b>	<b>Paweł Śliwa</b>
<b>Vice-President of the Management Board</b>	<b>Ryszard Wasilek</b>
<b>Vice-President of the Management Board</b>	<b>Emil Wojtowicz</b>

## Glossary

AKPiA	Control, measurement and automation apparatus area
Ancillary control services (ACS)	services provided to the transmission system operator, which are indispensable for the proper functioning of the National Power System and ensure the keeping of required reliability and quality standards.
Achievable capacity	the maximum sustained capacity of a generating unit or generator, maintained continuously by a thermal generator for at least 15 hours or by a hydroelectric generator for at least five hours, at standardized operating conditions, as confirmed by tests.
Balancing market	a technical platform for balancing electricity supply and demand on the market. The differences between the planned (announced supply schedules) and the actually delivered/off-taken volumes of electricity are settled here. The purpose of the balancing market is to balance transactions concluded between individual market participants and actual electricity demand. The participants of the balancing market can be the generators, customers for electricity understood as entities connected to a network located in the balancing market area (including off-takers and network customers), trading companies, electricity exchanges and the TSO as the balancing company.
Base, baseload	standard product on the electricity market: a constant hourly power supply per day in a given period, for example week, month, quarter or year.
BAT	Best Available Technology
Best Practices	Document „Best Practice for GPW Listed Companies 2016” adopted by the resolution of the GPW Supervisory Board of October 13, 2015 and effective from January 1, 2016.
Biomass	solid or liquid substances of plant or animal origin, subject to biodegradation, obtained from agricultural or forestry products, waste and remains or industries processing their products as well as certain other biodegradable waste in particular agricultural raw materials.
Black energy	popular name for energy generated as a result of combustion of black coal or lignite.
Circular economy	system that minimises the consumption of resources and the level of waste as well as emissions and energy losses by creating a closed loop of processes in which waste from one process is used as resources in other processes so as to maximally reduce the quantity of production waste
Co-combustion	the generation of electricity or heat based on a process of combined, simultaneous combustion in one device of biomass or biogas together with other fuels; part of the energy thus generated can be deemed to be energy generated with the use of renewable sources.
Co-generation	the simultaneous generation of heat and electricity or mechanical energy in the course of one and the same technological process.
Constrained generation	the generation of electricity to ensure the quality and reliability of the national power system; this applies to generating units in which generation must continue due to the technical limitations of the operation of the power system and the necessity of ensuring its adequate reliability.
CVC fund	Corporate Venture Capital; in the CVC model, portfolio companies, aside from financial support, receive the opportunity to verify their ideas in a corporate setting
Distribution	transport of energy through distribution grid of high (110 kV), medium (15kV) and low (400V) voltage in order to supply the customers.
Distribution System Operator (DSO)	a power company engaging in the distribution of gaseous fuels or electricity, responsible for traffic in the gas or electricity distribution systems, current and long-term security of operation of the system, the operation, maintenance, repairs and indispensable expansion of the distribution network, including connections to other gas or power systems.
Energy cluster	civil-law arrangement that may include natural persons, legal entities, scientific units, research institutes or local government units, concerning the generation, distribution or trade in energy and energy demand balancing, with this energy being from renewable sources or other sources or fuels, within a distribution grid with nominal voltage below 110 kV, within the operational area of the given cluster, not exceeding the area of one district (powiat) in the meaning of the act on district authorities) or 5 municipalities (gmina) in the meaning of the act on municipal authorities; an energy cluster is represented by a coordinator, which is a cooperative, association, foundation appointed for this purpose or any member of the energy cluster indicated in the civil-law arrangement
ERO	Energy Regulatory Office (pol. URE).
EUA	European Union Allowances: transferable CO <sub>2</sub> emission allowances; one EUA allows an operator to release one tonne of CO <sub>2</sub> .
EU ETS	European Union Greenhouse Gas Emission Trading Scheme) EU emission trading scheme. Its operating rules are set out in the ETS Directive, amended by the Directive 2009/29/EC of the European Parliament and of the Council of April 23, 2009 (OJ EU L. of 2009, No. 140, p. 63—87).
Generating unit	a technically and commercially defined set of equipment belonging to a power company and used to generate electricity or heat and to transmit power.
GJ	Gigajoule, a unit of work/heat in the SI system, 1 GJ = 1000/3.6 kWh = approximately 278 kWh.

GPZ	main power supply point, a type of transformer station used for the processing or distribution of electricity or solely for the distribution of electricity.
Green certificate	popular name for energy generated from renewable energy sources.
GW	gigawatt, a unit of capacity in the SI system, $1 \text{ GW} = 10^9 \text{ W}$ .
GWe	one gigawatt of electric capacity.
GWt	one gigawatt of heat capacity.
HICP	Harmonised Index of Consumer Prices
High Voltage Network (HV)	a network with a nominal voltage of 110 kV.
IED	Industrial Emissions Directive
IGCC	Integrated Gasification Combined Cycle.
Installed capacity	the formal value of active power recorded in the design documentation of a generating system as being the maximum achievable capacity of that system, confirmed by the acceptance protocols of that system (a historical value, it does not change over time).
IRiESP	the Transmission Network Operation and Maintenance Manual required to be prepared by a transmission system operator pursuant to the Energy Law; instructions prepared for power networks that specify in detail the terms and conditions of using these networks by system users as well as terms and conditions for traffic handling, operation and planning the development of these networks; sections on transmission system balancing and system limitation management, including information on comments received from system users and their consideration, are submitted to the ERO President for approval by way of a decision.
IRZ	Cold Intervention Reserve Service – service consisting of maintaining power units ready for energy production. Energy is produced on request of PSE S.A.
KSE	the National Power System, a set of equipment for the distribution, transmission and generation of electricity, forming a system to allow the supply of electricity in the territory of Poland.
KSP	the National Transmission System, a set of equipment for the transmission of electricity in the territory of Poland.
kV	kilo volt, an SI unit of electric potential difference, current and electromotive force; $1 \text{ kV} = 10^3 \text{ V}$ .
kWh	kilowatt-hour, a unit of electric energy in the SI system defined as the volume of electricity used by the 1 kW equipment over one hour. $1 \text{ kWh} = 3,600,000 \text{ J} = 3.6 \text{ MJ}$ .
Low Voltage Network (LV)	a network with a nominal voltage not exceeding 1 kV.
LTC	long-term contracts on the purchase of capacity and electricity entered into between Polskie Sieci Elektroenergetyczne S.A. and electricity generators in the years 1994-2001.
Medium-voltage network (MV)	an energy network with a nominal voltage higher than 1 kV but lower than 110 kV.
MEV	Minimum Energy Volumes.
MSR	Market Stability Reserve (relating to CO <sub>2</sub> )
MW	a unit of capacity in the SI system, $1 \text{ MW} = 10^6 \text{ W}$ .
Mwe	one megawatt of electric power.
MWt	one megawatt of heat power.
NAP	National emissions Allocation Plan, prepared separately for the national emission trading system and for the EU emission trading system by the National Administrator of the Emission Trading System.
NAP II	National CO <sub>2</sub> emissions Allocation Plan for the years 2008-2012 prepared for the EU emission trading system adopted by the Ordinance of the Council of Ministers of July 1, 2008 (Dz. U. of 2008, No. 202, item 1248).
Nm <sup>3</sup>	normal cubic meter; a unit of volume from outside the SI system signifying the quantity of dry gas in 1 m <sup>3</sup> of space at a pressure of 101.325 Pa and a temperature of 0°C.
NO <sub>x</sub>	nitrogen oxides.
N:W ratio	Ration of volume of overburden removed in m <sup>3</sup> to the mass of extracted coal in tons
OTF	Organized Trading Facilities
Operational Capacity Reserve (ORM)	ORM constitutes of generation capacities of active Production Scheduling Units (JGWa) in operation or layover, representing excess capacity over electricity demand available to the TSO under the Energy Sale Agreements and on the Balancing Market in unforced generation
Peak, peakload	a standard product on the electricity market; a constant power supply from Monday to Friday, each hour between 7:00 a.m. and 10:00 p.m. (15-hour standard for the Polish market) or between 8:00 a.m. and 8:00 p.m. (12-hour standard for the German market) in a given period, for example week, month,

quarter or year.

Peak power pumped storage plants	special type of hydro-power plant allowing for electricity storage. It uses the upper reservoir, to which water is pumped from the lower reservoir using electricity (usually excessive in system). The pumped storage facilities provide ancillary control services for the national power system. In periods of increased demand for electricity, water from the upper reservoir is released through the turbine. This way, electricity is produced.
PJ	Petajoule, a unit of work/heat in the SI system, 1 PJ = approx. 278 GWh
Property rights	negotiable exchange-traded rights under green and co-generation certificates
Prosumer	end customer who purchases electricity under a comprehensive agreement and generates electricity only from renewable sources at a micro-installations for own purposes, unrelated to economic activities
PSCMI1	Polish Energy Coal Market Index 1 - average level of prices of coal dust sold to industrial-scale power plants in Poland
RAB	Regulatory Asset Base.
Red certificate	a certificate confirming generation of electricity in co-generation with heat.
Red energy	popular name for electricity co-generated with heat.
Regulator	the President of ERO, fulfilling the tasks assigned to him in the energy law. The regulator is responsible for, among others, giving out licenses for energy companies, approval of energy tariffs, appointing Transmission System Operators and Distribution System Operators.
Renewable Energy Source (RES)	a source of generation using wind power, solar radiation, geothermal energy, waves, sea currents and tides, flow of rivers and energy obtained from biomass, landfill biogas as well as biogas generated in sewage collection or treatment processes or the disintegration of stored plant or animal remains.
SAIDI	System Average Interruption Duration Index - index of average system interruption time (long, very long and disastrous), expressed in minutes per customer per year, which is the sum of the interruption duration multiplied by the number of consumers exposed to the effects of this interruption during the year, divided by the total number of off-takers. SAIDI does not include interruptions lasting less than three minutes and is determined separately for planned and unplanned interruptions. It applies to breakdowns in the low (LV), medium (MV) and high voltage (HV), wherein SAIDI in quality tariff does not include interruptions on low voltage.
SAIFI	System Average Interruption Frequency Index - index of average system amount of interruptions ( long, very long and disastrous ), determined as number of off-takers exposed to the effects of all such interruptions during the year divided by the total number of off-takers. SAIFI does not include interruptions lasting less than three minutes and is determined separately for planned and unplanned interruptions. It applies to breakdowns in the low (LV), medium (MV) and high voltage (HV), wherein SAIFI in quality tariff does not include interruptions on low voltage .
SCR	Selective catalytic reduction
SNCR	Selective non-catalytic reduction
Start-up	early-stage company established in order to build new products or services and characterised by a high level of uncertainty. The most common features of start-ups are: short operational history (up to 10 years), innovativeness, scalability, higher risk than in the case of traditional businesses but also potential higher returns on investment
Tariff	the list of prices and rates and terms of application of the same, devised by an energy enterprise and introduced as binding on the customers specified therein in the manner defined by an act of parliament.
Tariff group	a group of customers off-taking electricity or heat or using services related to electricity or heat supply to whom a single set of prices or charges and terms are applied.
TGE	Towarowa Giełda Energii S.A. (Polish Power Exchange), a commodity exchange on which trading can take place in electricity, liquid or gas fuels, extraction gas, emission allowances and property rights whose price depends directly or indirectly on electric energy, liquid or gas fuels and emission allowances, admitted to commodity exchange trading.
TPA, TPA rule	Third Party Access, the owner or operator of the network infrastructure to third parties in order to supply goods/services to third party customers.
Transmission	transport of electricity through high voltage (220 and 400 kV) transmission network from generators to distributors.
Transmission System Operator (TSO)	a power company engaging in the transmission of gaseous fuels or electric energy, responsible for traffic in a gas or power transmission system, current and long-term security of operation of that system, the operation, maintenance, repair and indispensable expansion of the transmission system, including connections with other gas or power systems. In Poland, for the period from July 2, 2014 till December 31, 2030 Polskie Sieci Elektroenergetyczne S.A. was chosen as a TSO in the field of electricity transmission.
TWh	terawatt hour, a multiple unit for measuring of electricity unit in the system SI. 1 TWh is 10 <sup>9</sup> kWh.

Ultra-high-voltage network (UHV)	an energy network with a voltage equal to 220 kV or higher.
V (volt)	electrical potential unit, electric voltage and electromotive force in the International System of Units (SI), $1 \text{ V} = 1 \text{ J} / 1 \text{ C} = (1 \text{ kg} \times \text{m}^2) / (\text{A} \times \text{s}^3)$ .
W (watt)	a unit of power in the International Systems of Units (SI), $1 \text{ W} = 1 \text{ J} / 1 \text{ s} = 1 \text{ kg} \times \text{m}^2 \times \text{s}^{-3}$ .
Yellow certificate	a certificate confirming generation of energy in gas-fired power plants and CCGT power plants.
Yellow energy	popular name for energy generated in gas-fired power plants and CCGT power plants.