

Management Board's report on activities of the Capital Group of PGE Polska Grupa Energetyczna S.A. for the 3-month and 9-month period

ended September 30, 2017

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\* net profit adjusted by impairment of property, plant and equipment

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	CONVENTIONAL GENERATION	RENEWABLE ENERGY	SUPPLY	DISTRIBUTION	
Operations	Extraction of lignite and generation of electricity and heat from conventional sources and distribution of heat and supporting operations in this respect	Electricity generation from renewable sources and in pumped-storage power plants	Wholesale trading of electricity on domestic and international market and trading of related products, fuels and CO <sub>2</sub> emission allowances	Supply of electricity to final off-takers through the grid and HV, MV and LV power infrastructure	
Key assets of the segment	4 conventional power plants 8 CHPs 2 lignite mines	14 wind power plants 1 photovoltaic plant 29 run-of-river hydro power plants 4 pumped-storage power plants, including 2 with natural flow		287 004 kms. of distribution lines	
Energy volumes	Generation 40.02 TWh	Generation 1.44 TWh	Sales to end-users 29.68 TWh	Electricity distributed 26.20 TWh	
Market position	PGE is a leader in lignite mining in Poland (79%) and domestic leader in electricity generation	PGE is the leading producer of energy from renewable sources with market share of approx. 10% (incl. biomass)	One of the leaders in wholesale trading and retail supply in Poland	Second energy distributor with regard to number of customers with approx. 26% share in Polish electricity distribution market	
Revenues [PLNm]	9 398	530	11 240	4 727	
EBITDA [PLNm]	3 401	239	614	1 807	
Share of Group EBITDA	56%	4%	10%	30%	
CAPEX [PLNm]	3 041	49	9	1 060	
Assets [PLNm]	37 278	3 493	3 515	17 564	

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## 1. Description of activity of the Capital Group

## **1.1.** Description of organisation

The Capital Group of Polska Grupa Energetyczna S.A. ("PGE Capital Group", the "Group", "PGE Group", "PGE CG") is Poland's largest vertically integrated power utility by revenue, installed capacity and electricity production volume.

With a mix of own fuel sources, generation assets and distribution network, PGE provides a safe and reliable supply of electricity to more than five million households, businesses and institutions.

PGE is the largest electricity producer in Poland, one of the leaders in wholesale and retail trading and second largest electricity distributor in Poland with regard to the number of customers.

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

PGE Group currently organizes its activities in the four main 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, provision of services to companies from the PGE Group related to commercial management of generation capacities of the Group and electricity produced, as well as trading of CO<sub>2</sub> allowances and energy certificates and gas.

Distribution

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

Since December 16, 2016 due to the lowering of the so called "power exchange obligation" (obligation to publicly sell electricity) most of the trading is executed bilaterally within the Capital Group. That change significantly attributed to the decrease of the electricity sale and purchase volumes (see p. 3.2.1 of this report) and consequently consolidated revenues (see p. 3.1.3 of this report) and costs. It had limited impact on the actual profitability of PGE Group.

## **1.2.** Composition of organisation

Full composition of the PGE Capital group is presented in note 1.3 to the consolidated financial statements.

## 1.2.1. The most significant changes in organisation of the Capital Group

Changes which occurred in the PGE Capital Group's structure in the period from January 1, 2017 until the publication date of this report, are presented in note 1.3 to consolidated financial statements and described below.

### Setting up of new companies

Entity/entities	Date of registration in National Court Register	Share capital	Comment
PGE Towarzystwo Funduszy Inwestycyjnych S.A.	January 27, 2017	PLN 750 000	On December 29, 2016, PGE S.A. formed a single-member company based in Warsaw in the form of a public limited company.
PGE Inwest 19 sp. z o.o.	February 24, 2017	PLN 10 000	On February 1, 2017, PGE S.A. formed a single-member company based in Warsaw in the form of a limited company.

## Increase of the share capital of companies

Entity	Date of registration National Court Register	<ul><li>(1) Share capital</li><li>(2) Increase</li><li>(3) Share capital after increase</li></ul>	Comment
<b>PGE Inwest 13 sp. z o.o.</b> (currently a joint stock company, under name PGE Inwest 13 S.A.)	January 27, 2017	<ol> <li>PLN 20 000</li> <li>PLN 730 000</li> <li>PLN 750 000</li> </ol>	On December 7, 2016, the Extraordinary Assembly of Partners of the company adopted a resolution on an increase of the company's share capital. The increased capital was acquired by PGE S.A. in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
<b>PGE Nowa Energia sp. z o.o.</b> (previously: PGE Inwest 15 sp. z o.o.)	March 22, 2017	<ol> <li>PLN 20 000</li> <li>PLN 50 000</li> <li>PLN 70 000</li> </ol>	On December 20, 2016, the Extraordinary Assembly of Partners of the company adopted a resolution on an increase of the company's share capital. The increased capital was acquired by PGE S.A. in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
PGE EJ 1 sp. z o.o.	February 15, 2017	(1) PLN 275 859 450 (2) PLN 34 999 020 (3) PLN 310 858 470	The Extraordinary Assembly of Partners of the company of December 21, 2016 adopted resolution on the increase of the share capital of company. The increase of the share capital was acquired by all partners, i.e. PGE S.A., KGHM Polska Miedź S.A., TAURON Polska Energia S.A. and ENEA S.A. in exchange for a cash contribution, proportionally to their stakes. PGE S.A. holds 70% in the share capital.
<b>PGE Nowa Energia sp. z o.o.</b> (previously: PGE Inwest 15 sp. z o.o.)	April 18, 2017	<ol> <li>PLN 70 000</li> <li>PLN 5 150 000</li> <li>PLN 5 220 000</li> </ol>	On March 28, 2017, the Extraordinary Assembly of Partners of the company adopted a resolution on an increase of the company's share capital. The increased capital was acquired by PGE S.A., in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
<b>PGE Centrum sp. z o.o.</b> (previously: PGE Inwest 6 sp. z o.o.)	May 22, 2017	<ol> <li>PLN 20 000</li> <li>PLN 1 500 000</li> <li>PLN 1 520 000</li> </ol>	On April 7, 2017, the Extraordinary Assembly of Partners of the company adopted a resolution on an increase of the company's share capital. The increased capital was acquired by PGE S.A., in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
PGE Inwest 16 sp. z o.o.	April 27, 2017	<ol> <li>PLN 200 000</li> <li>PLN 900 000</li> <li>PLN 1 100 000</li> </ol>	On April 7, 2017, the Extraordinary Assembly of Partners of the company adopted a resolution on an increase of the company's share capital. The increased capital was acquired by PGE S.A., in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
PGE Towarzystwo Funduszy	June 2, 2017	(1) PLN 750 000	On May 12, 2017 the Extraordinary General Meeting of the company adopted a resolution on an increase of the company's share capital.

Inwestycyjnych S.A.		(2) PLN 5 500 000 (3) PLN 6 250 000	
PGE Ventures sp. z o.o. (previously: PGE Inwest 7 sp. z o.o.)	September 22, 2017	<ol> <li>PLN 20 000</li> <li>PLN 420 000</li> <li>PLN 440 000</li> </ol>	capital. The increased capital was acquired by PGE S.A., in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
<b>PGE Nowa Energia sp. z o.o.</b> (previously: PGE Inwest 15 sp. z o.o.)	August 7, 2017	<ol> <li>PLN 5 220 00</li> <li>PLN 2 000 00</li> <li>PLN 7 220 00</li> </ol>	capital. The increased capital was acquired by PGE S.A., in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
PGE Obsługa Księgowo – Kadrowa sp. z o.o.	September 26, 2017	<ul> <li>(1) PLN 2 050 00</li> <li>(2) PLN 4 000 000</li> <li>(3) PLN 6 050 000</li> </ul>	capital. The increased capital was acquired by PGE S.A., in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
PGE Ventures sp. z o.o. (previously: PGE Inwest 7 sp. z o.o.)	Not yet registered in National Court Register	<ol> <li>PLN 440 000</li> <li>PLN 20 960 000</li> <li>PLN 21 400 000</li> </ol>	share capital. The increased capital was acquired by PGE S.A., in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
PGE Nowa Energia sp. z o.o. (previously: PGE Inwest 15 sp. z o.o.)	Not yet registered in National Court Register	<ul> <li>(1) PLN 7 220 000</li> <li>(2) PLN 8 000 00</li> <li>(3) PLN 15 220 000</li> </ul>	share capital. The increased capital was acquired by PGE S.A., in exchange for a cash contribution. PGE S.A. holds 100% of share capital.
PGE Centrum sp. z o.o. (previously: PGE Inwest 6 sp. z o.o.)	Not yet registered in National Court Register	<ul> <li>(1) PLN 1 520 00</li> <li>(2) PLN 6 800 000</li> <li>(3) PLN 8 320 00</li> </ul>	share capital. The increased capital was acquired by PGE S.A., in exchange for a cash contribution. PGE S.A. holds 100% of share capital.

## Acquisition or disposal of shares by the companies

Shares of the entity	Date of transaction/ registration in the National Court Register	Number of acquired shares	Comment
Polska Grupa Górnicza sp. z o.o. ("PGG") – acquisition by PGE Górnictwo i Energetyka Konwencjonalna S.A. ("PGE GiEK S.A.", "PGE GiEK"). of shares in the increased share capital of PGG	November 3, 2016/ January 27, 2017 PGG's share capital increase registered	833 333 shares	The Extraordinary Assembly of Partners of PGG adopted resolution in the increase of the share capital by PLN 366 667 000 to PLN 2 672 274 200 through issue of new shares. PGE GiEK S.A. took up 833 333 shares with a nominal value of PLN 83 333 300, representing 3.1% in the increased share capital of PGG.
<b>PGG</b> – acquisition by PGE GIEK S.A. of shares in the increased share capital	February 1, 2017/ March 10, 2017 PGG's share capital increase registered	555 556 shares	The Extraordinary Assembly of Partners of PGG adopted resolution in the increase of the share capital by PLN 244 444 000 to PLN 2 916 718 200 through issue of new shares. PGE GIEK S.A. took up 555 556 shares with a nominal value of PLN 55 555 600, representing 1.9% in the increased share capital of PGG.
<b>PGG</b> – acquisition by PGE GiEK S.A. of shares in the increased share capital	April 3, 2017 PGG's share capital increase registered	500 000 shares	On March 31, 2017 the investment agreement was signed between PGE GiEK, Enea S.A., ENERGA Kogeneracja sp. z o.o., PGNiG TERMIKA S.A., Węglokoks S.A., Towarzystwo Finansowe Silesia sp. z o.o., Fundusz Inwestycji Polskich Przedsiębiorstw Fundusz Inwestycyjny Zamknięty Aktywów Niepublicznych and PGG sp. z o.o. The investment agreement determines the conditions of the financial investment in PGG. assumes recapitalisation of PGG in three stages by PGE GiEK, Enea S.A., ENERGA Kogeneracja sp. z o.o., PGNiG TERMIKA S.A. and Towarzystwo Finansowe Silesia sp. z o.o. with total amount of PLN 1 billion. Within the recapitalisation of PGG, PGE GiEK committed itself to acquire new shares of PGG with a total nominal value of PLN 100 million in exchange for the cash contribution in amount of PLN 100 million. On the base of that agreement, the Extraordinary Assembly of Partners of PGG adopted resolution on the increase of the share capital by PLN 500 000 000 to PLN 3 416 718 200, through issue of new shares. PGE GiEK S.A. took up 500 000 shares with a nominal value of PLN 50 000 000, representing 1.5% in the increased share capital of PGG.

<b>PGG</b> – acquisition by PGE GIEK S.A. of shares in the increased share capital	June 14, 2017/ July 7, 2017 PGG's share capital increase registered	200 000 shares	The Extraordinary Assembly of Partners of PGG adopted resolution in the increase of the share capital by PLN 200 000 000 to PLN 3 616 718 200 through issue of new shares. PGE GiEK S.A. took up 200 000 shares with a nominal value of PLN 20 000 000, representing 0.6% in the increased share capital of PGG. Currently PGE GiEK S.A. holds a total of 5 700 000 shares with a nominal value of PLN 570 000 000 representing 15.76% in the share capital of PGG.
Polimex-Mostostal S.A. ("Polimex") – acquisition by PGE S.A. of shares in the increased share capital	January 20, 2017/ February 21, 2017 Polimex's share capital increase registered	37 500 000 ordinary bearer shares	On January 18, 2017 PGE S.A., ENEA S.A., ENERGA S.A, PGNiG Technologie S.A. (the "Investors") signed Investment Agreement with Polimex, on the ground of which, subject to the conditions precedent specified in the agreement, the Investors have committed to make investment in Polimex. The investment involves acquisition by the Investors jointly of 150 000 000 ordinary bearer shares with a nominal value of PLN 2 each and the issue price amounting to PLN 2 PLN for one share ("New Issue Shares"), issued by Polimex for the increase of the share capital of Polimex by the amount of up to PLN 300 000 000 (the "Investment Agreement"). In accordance with the resolution of the Extraordinary General Meeting of December 28, 2016 on the increase of the share capital, the New Issue Shares will be introduced to the trading on the regulated market of the Warsaw Stock Exchange and will be dematerialised. On the ground of the Investment Agreement, in connection with the fulfilment of the conditions precedent, on January 20, 2017 PGE S.A. accepted the offer for acquisition in private placement of 37 500 000 New Issue Shares for the total price of PLN 75 000 000.
<b>Polimex</b> – acquisition of shares by PGE S.A. (agreement for sale of shares)	January 20, 2017	1 500 001 shares	On January 18, 2017 the Investors signed a agreement with SPV Operator, obliging the parties, provided the conditions precedent are fulfilled, to conclude transaction in which SPV Operator sells to the Investors total of 6 000 001 shares of Polimex. On January 20, 2017, in connection with the fulfilment of the conditions precedent, PGE S.A. acquired 1 500 001 shares of Polimex from SPV Operator.
<b>Polimex</b> – acquisition of shares by PGE S.A. (tender offer)	April 28, 2017	24 shares	Pursuant to the Polish regulations regarding capital market, as a consequence of the subscription tender for sale of shares. in number sufficient to reach by the Investors 66% threshold of voting rights on the general meeting of Polimex, on April 28, 2017 the Investors acquired total of 96 shares of Polimex, including PGE which purchased 24 shares of that company.
			As a result of the share capital increase of Polimex, acquisition of shares from SPV Operator and subscription offer, the Investors hold jointly 156 000 097 shares currently representing 65.93% of the share capital of Polimex, including PGE S.A. which holds 39 000 025 shares representing 16.48% of the share capital.
<b>EXATEL S.A.</b> – sale of shares by PGE S.A.	March 29, 2017	8 360 211 shares	PGE S.A. and the State Treasury of the Republic of Poland ("State Treasury") executed an agreement for the sale of 100% of shares in EXATEL S.A. to the State Treasury. As a result of the sale transaction, EXATEL S.A. and its subsidiary ENERGO-TEL S.A. are no longer part of PGE Group.
PGE GIEK S.A. – mandatory buyback of shares by PGE S.A.	April 10, 2017	67 052 shares	CDM Pekao S.A., which maintains PGE GiEK S.A.'s share register, made entries in the share register regarding transfer to PGE S.A. of the ownership of 67 052 shares of PGE GiEK S.A. covered by a mandatory squeeze-out procedure but not yet transferred to PGE S.A. In connection with the above, PGE S.A. currently holds a 100% stake in the share capital of PGE GiEK S.A.
EDF Polska S.A. and EDF Investment III B.V. – acquisition of shares by PGE S.A. (conditional share sale agreement)	May 19, 2017 Due to lack of fulfilment of conditions precedent from the share sale agreement – shares of the companies have not		On May 19, 2017 PGE signed the Conditional Share Sale Agreement (the "CSSA") regarding sale of EDF assets in Poland with EDF International SAS and EDF Investment II B.V. (jointly "EDF"). The CSSA includes in particular (the "Transaction") acquisition of 99.51% of shares of EDF Polska S.A., acquisition of 100% of shares of EDF Investment III B.V., indirect acquisition of 50% of shares + 1 share of ZEW Kogeneracja S.A. (shares held by EDF Polska S.A. and EDF Investment III B.V.), and acquisition of shares in supporting subsidiaries of EDF Polska S.A. Due to the fact that the conditions precedent have not been fulfilled, the shares of EDF Polska S.A. and EDF Investment III B.V. have not been transferred to PGE S.A. The closing of the Transaction is planned not later than January 2, 2018. After the closing of the Transaction, pursuant to the Polish regulations regarding capital market, as a consequence of acquisition of shares of ZEW Kogeneracja S.A. PGE Group will be obliged to announce a subscription tender for shares of ZEW
	been transferred to PGE S.A.		Kogeneracja S.A. in number sufficient to reach 66% threshold of voting rights in ZEW Kogeneracja S.A.

### Mergers

Acquiring company /acquired company	Date of transaction/ registration in the National	Comment
	Court Register	
PGE Energia Odnawialna S.A acquiring	October 19, 2017 and	The Extraordinary General Meeting of PGE Energia Odnawialna S.A. and the Extraordinary Assembly of Partners of PGE Energia Natury
company	October 20, 2017	sp. z o.o. on October 20, 2017 adopted resolutions on merger of PGE Energia Odnawialna S.A. as an Acquiring company and PGE Energia
PGE Energia Natury sp. z o.o acquired		Natury sp. z o.o. as an Acquired company, through transferring of all assets of the Acquired company to the Acquiring company without
company	Not yet registered in National Court Register	issue of new shares in exchange for the shares in the share capital of the Acquired Company, pursuant to art. 516 of the Commercial Companies Code and dissolution of the Acquired company without its liquidation. PGE Energia Odnawialna S.A. is the sole shareholder of PGE Energia Natury sp. z o.o.

### Transformation of companies

Transformed company	Date of transaction/ registration in the National		Comment
	Court Register		
PGE Inwest 13 sp. z o.o. after transformation: PGE Inwest 13 S.A.	April 25, 2017 April 26, 2017 May 16, 2017 PGE Inwest 13 S.A. was registered in the National Court Register	750 shares	On April 25, 2017, the Extraordinary Assembly of Partners of the company adopted a resolution on the change of this company's legal form into a single-member public limited company under the name PGE Inwest 13 S.A. PGE S.A. held 100% shares in the share capital of PGE Inwest 13 sp. z o.o. On April 26, 2017, PGE S.A. signed the Articles of Association of PGE Inwest 13 S.A. and appointed its governing bodies.

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

## 2.1. Updated strategy of the Capital Group

On September 6, 2016 the Supervisory Board approved PGE Group's strategy update presented by the Management Board of PGE. The update is aimed at adapting the Group's activities to the changing environment. In the updated document, the Group also addresses threats and opportunities connected with, among others, volatility of fuel prices, climate policy directions, market model evolution and new technology development.

### Mission, vision and overall objectives

In accordance with the updated strategy, PGE's mission is to ensure security and growth based on reliability of supply, technical excellence, modern services and partnership relationships. The overall objective of PGE Group's operations is to increase its value for shareholders and the key role in ensuring Poland's energy security.



Diagram: Redefining PGE Group's mission.

### Updated vision determines the target position of the PGE Group in four areas:



## **2.2.** Implementation of key projects within the strategic objectives

### 2.2.1. Leader in electricity generation, actively seeking development opportunities

To retain its leading position in the area of electricity generation, PGE Group must secure at least a 40% share of the electricity generation market in Poland by 2020. PGE Group is continuing its flagship investments in Opole and Turów and may invite partners to participate in these projects. PGE Group 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 of each asset. To this end, on August 30, 2017 the Investment Committee (an advisory body to the Management board of PGE) recommended to launch preparations for a new unit at Dolna Odra power plant based on gas fuel.

The company will carry 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 (Best Available Technology).

The PGE Group received conditional consent for the purchase of EDF assets in Poland. As a result of the execution of the conditional agreement, the installed electrical capacity of the PGE Group will increase by 25% and will reach the level of 15.95 GWe.

At the same time, within the generation area, PGE Group will seek innovative solutions that will cement its competitive advantage and allow it to reduce environmental impact, including through adapting production assets to a new energy market model, maintaining a competitive lignite extraction operation, reducing SO<sub>2</sub>, NO<sub>x</sub>, particulates and mercury emissions as well as increasing the efficiency of coal combustion by-product use.

PGE Group intends to retain its leadership in the renewables segment and account for approx. 25% of domestic renewables generation by 2030. To reach this ambitious target, PGE Group plans to complete those onshore wind farm projects that are at the most advanced stages, build an approx. 1 000 MW offshore wind farm and increase its presence in the distributed generation segment, including energy clusters. These investments will depend on successes in the auction support system, development of an innovative financing model and implementation of new business models for the micro-installations segment as well as the results of cooperation with the local governments.

Diagram: PGE Group's aspirational share in Poland's electricity production from RES.



In order to maintain a leading position in generation, in the long term PGE Group has three strategic options, thereby can make the optimal choice in the context of future climate policy:

- Construction of Poland's first nuclear power plant, following the development of a model guaranteeing economic viability of the investment,
- Construction of approx. 1 000 MW capacity in off-shore wind farms, based on an auction support system,
- Modern coal-fired power generation, including utilization of new lignite deposits in case there is a significant easing of the climate policy.



### 2.2.2. 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 is being supported by, among others, 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, what will have a positive impact on monitoring client satisfaction indicators. Attaining the status of a reliable, credible and modern supplier will allow PGE Group to maintain low client migration rates in the mass segment.

### 2.2.3. 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

Due to efficiency improvement, in 2020 PGE Group plans to achieve reduction of the forecasted controllable costs in the amount of PLN 500 million versus year 2016. This will allow for the total cost reduction in 2016-2020 by approx. PLN 3.5 billion versus the current efficiency scenario.

The goal of the cost reduction is to strengthen PGE Group's competitiveness and maintain potential of financing of the Group's development. Objectives and initiatives in scope of improving the operational and cost efficiency are assigned to each business line of the Group.

Diagram: Total reduction of controllable costs in 2016-2020.



\*Controllable costs

Reduction of controllable costs will concern both the modification of organisational structure and as well as optimisation of processes. Changes in the organisational structure are intended to prepare PGE Group for development in the most promising business areas as well as to eliminate redundant functions and simplify organisational structures. These changes will be introduced through, among others, standardisation and optimisation of support functions throughout PGE Group, effective formation of new business lines and spin-off of a new business line – "Co-generation". Process optimisation will focus on improving operational efficiency measured by ratios relating to cost, time and quality of particular processes, both basic and supporting. Within the framework of the human resources management strategy, it is planned to implement the rules of corporate employment, mobility and remuneration, as well as other initiatives connected with optimisation of labour costs. Moreover, within next four years, planned expenditures on modernization and replacements will be reduced by approximately PLN 500 million in relation to forecasts. It will be possible thanks to introduction of integrated asset management system, among others. Unified approach to planning of expenditures, that takes into account inter alia the class of the assets will allow for reducing asset maintenance costs and modernisation and replacement expenditures, while maintaining the proper availability and security of power supply.

Higher flexibility at PGE Group will be achieved mainly through mechanisms for monitoring the surrounding and rapidly responding to changes, increased mobility of employees, cooperating with external partners, scientific and academic institutions, as well as streamlining decision-making, analytical and reporting processes.

### 2.2.4. Leader in development of new business models and operating segments

The updated 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. PGE Group's involvement may come in the form of financing, technical or organisational support, depending on the type of venture and form of its implementation. New technological solutions that are of interest to PGE Group include energy warehouses, electromobility, including car sharing, bike sharing , construction of charging stations, LNG, diffuse energy sources, integrated intelligent solutions and the development of coal gasification installations.

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, intelligent home solutions (Smart Energy project), natural gas and demand management.

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 client relationships with industry, local government and retail customers, among others. A wide scope of initiatives to improve the effectiveness of energy infrastructure and buildings belonging to the company will also be implemented.

The PGE Group will allocate at least PLN 25 million per year to capital investments in innovative start-ups and incubation, and acceleration of projects at the earliest stage of development. Activities within those areas will be implemented by PGE Ventures sp. z o.o. ("PGE Ventures"), a specialized CVC (corporate venture capital) fund, and by the company PGE Nowa Energia sp. z o.o. ("PGE Nowa Energia").

### Investments

The Group assumes capital expenditures of approximately PLN 34 billion in 2016-2020, including more than PLN 10 billion for ongoing projects in Opole and Turów. In connection with modernisation programs that are to be completed soon, the expenditures for the existing capacities in Conventional Energy will be gradually decreasing. After construction of two flagship projects, PGE Group will be ready to invest significantly in new business areas, also abroad. Beyond 2020 PGE will be implementing a new investment program, dependent on selected strategic options, the power system's needs and new market model.

Diagram: Planned capital expenditures of PGE Group.



### Values of PGE Group

PGE Group's strategy will be 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.

### Key projects in the 9 months of 2017

Development	Construction of new units in Opole power plant
investments	• aim of the project: construction of two power units of 900 MW each
	<ul> <li>budget: approx. PLN 11 billion (net, without costs of financing)</li> </ul>
	<ul> <li>capital expenditures incurred so far: approx. PLN 8 billion</li> </ul>
	• fuel: hard coal
	• net efficiency: 45.5%
	• <b>contractor</b> : syndicate of companies: Rafako, Polimex-Mostostal and Mostostal Warszawa with co-operation of GE as Project manager on behalf of the syndicate
	<ul> <li>commissioning according to the binding agreement with the General Contractor: unit 5 – July 31, 2018; unit 6 – March 31, 2019 wherein on September 26, 2017 the General Contractor submitted the proposal of shifting the commissioning dates as follows: unit 5 – December 20, 2018, unit 6 – July 31, 2019</li> </ul>
	<ul> <li>January 31, 2014 – issue of Notice to Proceed</li> </ul>
	<ul> <li>status: turboset 5 assembly is complete, work within boiler 5 area is advanced; at unit 6 a leak test was performed for the boiler's pressure systems, with a positive result; and turboset assembly continues; power from the National Power System was supplied to the unit's back-up supply systems, though power for start-up purposes will be supplied using the target method; overall project progress at the end of September was slightly over 86%</li> </ul>

#### Construction of new unit in Turów power plant

	<ul> <li>aim of the project: construction of power unit with a capacity of 490 MW</li> <li>budget: approx. PLN 4 billion (net, without costs of financing)</li> <li>capital expenditures incurred so far: approx. PLN 1 billion</li> <li>fuel: lignite</li> <li>net efficiency: 43.1%</li> <li>contractor: syndicate of companies: MHPSE, Budimex and Tecnicas Reunidas</li> <li>commissioning: H1 2020</li> <li>December 1, 2014 - issue of Notice to Proceed</li> <li>status: consolidation of the pressure elements of the boiler continued; turboset' assembly commenced; work on auxiliary systems is under-way; erection of the cooling tower shell in progress</li> </ul>
	<ul> <li>Construction of a Thermal Processing Installation with Energy Recovery at Rzeszów CHP</li> <li>aim of the project: 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)</li> <li>budget: approx. PLN 293 million (net, without costs of financing)</li> <li>capital expenditures incurred so far: approx. PLN 53 million</li> <li>fuel: municipal waste</li> </ul>
	<ul> <li>boiler's efficiency: 86%</li> <li>contractor: syndicate of TM.E. S.p.A. Termomeccanica Ecologia and Astaldi S.p.A</li> <li>commissioning: H1 2018</li> <li>Agreement with the Contractor signed on December 22, 2015, Notice to Proceed issued on April 8, 2016</li> </ul>
	<ul> <li>consolidation of the pressure elements of the boiler completed; turboset was delivered to the construction site and placed in its target location; flue gas desulphurisation system reactor was assembled, auxiliary systems are being installed, including a flue gas heat recovery system and cooling system elements</li> </ul>
Modernisation and	Comprehensive reconstruction and modernisation of units no. 1-3 at Turów power plant
replacement projects	<ul> <li>aim of the project: Adaptation to future BAT conclusions requirements regarding permissible emissions of sulphur, NO<sub>x</sub> and particulate, increase of availability and efficiency, as well as expansion of each turboset's nominal capacity by approx. 15 MWe</li> <li>status: boiler screen replacements and cyclone assembly are being continued, as is brickwork around the firing chamber funnel. HV, MV and LV shells have been closed, the turbine has been connected to the generator, mechanical and electric assembly as well assembly of control-measurement and automation systems for the electrostatic precipitator are complete. Work is under way on assembly of control-measurement and automation systems and electric systems for the boiler room and engine room. A detailed design was drafted for unit 2, including a turbine island and electrostatic precipitator, together with a basic design for control-measurement and automation systems and the cooling tower.</li> <li>budget: PLN 0.8 billion (net, without costs of financing)</li> <li>fuel: lignite</li> <li>completion: 2020</li> </ul> Change in technology of furnace waste storage for units 1-12 – Bełchatów power plant and
	<ul> <li>Change in technology of furnace waste storage for units 1-12 – Bełchatów power plant and construction of installation to transport ash; production and transport of sludge from unit 14 in Bełchatów power plant</li> <li>aim of the project: to provide the capability for storage of furnace waste produced during the operation of units 1-12 of Bełchatów power plant until exhaustion of lignite resources. In the course of the project, the requirement to fit out unit 14 with new technology for the transport and storage of combustion waste was identified</li> <li>status: works related to filling in and securing the "Zwałowisko" storage site continue, as do works related to installations for unit 14 – construction of a suspension production and pumping system and construction of electrical switching stations 0.4 kV RW25 and RW 26. Assembly of pipelines for the Lubień storage site and modernisation of electrical switching stations 6 kV PW1 and 0.4 kV were completed.</li> </ul>

- budget for units 1-12: ca. PLN 450 million (net, without costs of financing)
- budget for unit 14: ca. PLN 85 million (net, without costs of financing)
- completion: 2018

### Modernisation of the Pomorzany power plant

- aim of the project: Reduction of  $NO_x$  and  $SO_x$  emissions from Benson OP-206 boilers to a level allowing to meet the requirements of future BAT conclusions as well as to ensure that the plant remains in operation until about 2040
- status: agreements signed with main contractors (on construction of flue-gas desulphurisation FGD and deNO<sub>x</sub> installations and selected non-contractual tasks). Permits to build FGD and SCR (selective catalytic reduction of NO<sub>x</sub>) obtained. Main projects were carried out. Within SCR: construction of foundations of unit B reactor and supporting structure of unit A rector were completed. Assembly of supporting structure and exhaust channels of unit A boiler's reactor are in progress. Within FGD: foundations work regarding Ash Distribution Station building, FGD construction and dismantling and adjustment works were completed. Assembly of steel structure and construction works in compressor room are at the final stage.
- budget: ca. PLN 213 million (net, without costs of financing)
- fuel: hard coal
- completion: SCR 2017/2018 (unit A/B), FGD 2019.

Construction of flue gas denitrification installation and flue-gas desulphurisation for OP-230 boilers no. 3 and 4 in Bydgoszcz CHPs

- aim of the project: Reduction of NO<sub>x</sub> and SO<sub>x</sub> emissions from boilers no. 3 and 4 to a level allowing for further use after 2017
- status: on July 5, 2017, an agreement was concluded for Extension of FGD with the Contractor, GE Power sp. z o.o. On August 18, 2017 agreements for expansion of the fumes denitrogenation installation (deNO<sub>x</sub>) for two boilers OP-230 was signed with SBB Energy S.A.
- budget: PLN 47 million (net, without costs of financing) for denitrification installation,
- PLN 44 million (net, without costs of financing) value of agreement with contractor of desulphurisation installation.
- fuel: hard coal
- completion: 2018

Project of network	• aim of the project: reduction of electricity procurement costs for balancing differences
losses reduction	<ul> <li>activities undertaken (multi-year project):         <ul> <li>replacement of HV/MV, MV/LV transformers with low-loss units, adaptation of transformers' output to power consumption</li> <li>grid conversion and modernisation: construction of HV/MV and MV/LV stations, increase of cable cross-sections for HV, MV and LV lines, reduction of MV and LV lines,</li> <li>maintenance of optimal grid workload, elimination of adverse energy transit in HV lines, optimisation of MV line partitions,</li> <li>reduction of load asymmetries in LV lines.</li> </ul> </li> </ul>
	<ul> <li>the results of the project: lowering of the balancing difference in 2016 to 5.77% (in 2015 it amounted to 5.91%); volume of balancing difference in 2016 amounted to 2.41 TWh with the increase of volumes of energy delivered to off-takers by 2.8% in comparison to 2015.</li> <li>activities initiated in three quarters of 2017: project assumptions for 2017-2021 were updated in March 2017; activities aimed at reducing balancing differences at PGE Dystrybucja S.A. are to be continued, the tasks assumed in the project are being carried out on an ongoing basis.</li> </ul>

Trading strategy update	<ul> <li>aim of the project: achieving maximum margin on sale of electricity simultaneously minimising risk associated with trading activities</li> <li>activities initiated in three quarters of 2017:</li> <li>Sale of electricity was realised pursuant to conditions resulting from optimisation of use of particular generating units in connection with the level of variable costs, level of market prices, market liquidity, regulations and laws, with the simultaneous assessment of risk associated with so called "open position". Electricity trading methods were adapted to a reduced "power exchange obligation" (to 15% from December 16, 2016). Sales were conducted bilaterally within the Group, on forward market and spot market, where balancing of contractual position was made. Available capacities that were not sold, were offered on the balancing market. Sales channel directed to transmission and distribution grid operators was also in use. Implementation of the plan of contracting was taking into account trading directions, hedging methods, risk and open trading positions limits as well as product optimisation. Moreover, activities were undertaken to improve wholesale trade operations and adapt wholesale trade to regulatory changes, including the MIFID II directive. Works included the identification of wholesale trade areas with operations requiring verification and possible modification. Currently, works are underway to develop and implement target solutions in these areas.</li> </ul>
Human Capital Management Strategy ("HCM Strategy")	<ul> <li>aim of the project: supporting the business strategy goals through securing strategic and effective human resources management and optimization and standardisation of HR processes.</li> <li>activities initiated in three quarters of 2017: works were underway to clarify the definitions of specialisations in Workplace Architecture and, during meetings with PGE Group management, specialist competences were selected to be included in the Competence Model next to firm-wide and management qualifications. The Competence Model will eventually be used in the process of evaluating skills of PGE Group's employees. The 3rd Conference of PGE Group Employers took place at the end of March 2017, during which the management team discussed on changes in the work style of managers with regard to issues surrounding human capital management and adaptation of the organisation in order to meet PGE Group's ambitious goals. Work has been commenced by a team which will be responsible for implementation of Employee Assessment at PGE Capital Group. During the first stage, Competence Assessment will be implemented based on the developed Competence Model. The team has specified the details of the procedure's rules and commenced planning of its implementation in individual LBs. Moreover, during the first six months of 2017, work was being performed on the update of the Human Resources Management Strategy. A review was conducted of the status of implementation of strategic initiatives in view of an update of the PGE Group's Strategy. The update of the HRM Strategy indicates the main initiatives which, in consecutive years, will be implemented by all PGE Group companies. In the third quarter of 2017, work on the Competence Model was completed and work began on communicating the Competence Evaluation and on a pilot start-up at PGE S.A.</li> </ul>

Strategic Research and Development and New Business Areas ("SOBiR+NB"), within which the Group intends to carry out R&D and innovation projects concerning, among others, the supply of new products or services. The SOBiR+NB areas are aligned with the Group's most important challenges and are identified for each element of the value chain (see the graph below).

Mining	Generation	Renewable Energy	Distribution	Sale
Optimisation of the mining process	Utilisation of carbon dioxide (CCU)	Prosumer photovoltaics	Smart Grid	Management of information about customers (Big Data)
Raw material treatment	Reduction of emissions (NOx, SOx, Hg, etc.),	Wind energy	Smart Meters	Smart Facility
	Improvement of generation effectiveness		Energy storage	E-mobility
	Fuel gasification			Demand management
	Micro-cogeneration			2
	Nuclear energy			

In connection with an Update of the Group's Strategy until 2020 being introduced in the third quarter of 2016, works have progressed on updating the Development and Innovation Strategy. The updated Development and Innovation Strategy will place emphasis on challenges that most affect the Group, where R&D and innovation are essential to the achievement of business objectives. In connection with this, particular attention will be paid to both dynamically developing segments such as electromobility or energy warehousing as well as ways of acquiring and developing initiatives such as new models of management and implementation of innovations like acceleration and investing in an equity fund model in small businesses that develop technologies and products. A strategic option for PGE will be the design and development of specific technologies - which constitutes a large quality change in contrast to the previous model - an operator of technologies from other businesses, providers. An SPV named PGE Nowa Energia was formed to work with small businesses (start-ups) in the acceleration and project commercialisation (implementation of innovation solutions) formula. By working with start-up market stakeholders (small businesses, accelerators, other investors, government agencies, etc.), the company is intended to be a competence centre, allowing PGE to effectively identify and develop technologies and products being part of and related to the power value chain. In order to facilitate the continued development of companies and obtainment of new solutions from the market (at the maturity stage later than acceleration), the PGE Ventures company was established, which serves the role of the investment fund of GK PGE. The purpose of the company is to invest PGE's own funds and funds obtained via support tools - the public budget available through the Polish Development Fund (PFR) and the National Research and Development Centre (NCBiR).

#### Innovation

PGE focuses on initiating and executing R&D projects that fall within the SOBiR+NB areas. In the third quarter of 2017, several dozen projects were continued within these areas.

Key projects in the	9 months of 2017
Involvement in equity structures that support the	• aim of the project: Introduction of a new model for developing and implementing new solutions, allowing to manage higher-risk undertakings whilst reducing time-to-market for new solutions (for own purposes or to sell to other entities)
development of new technologies and solutions as well as small businesses	<ul> <li>main activities:</li> <li>PGE Ventures company was established, dedicated as a venture capital fund (VC) to conduct an investment activity on the basis of its own funds and funds obtained from the public budget (PFR Ventures). The process of recruitment was completed. Preparation to conclude the first investment agreements is ongoing.</li> <li>the acceleration activities conducted by the PGE Nowa Energia company have been commenced and rules of co-operation between the companies (PGE Nowa Energia and PGE Ventures) have been determined, providing for optimization and maintenance of continuity at the next stages of development of small. Project acceleration applications are being accepted.</li> </ul>

Electromobility	<ul> <li>aim of the project: promoting and developing electric transport in Poland and gaining by PGE Capital Group of experience and the competence necessary to serve the role of the operator of electrical cars charging infrastructure and of the supplier of electrical cars charging services</li> <li>main activities concern individual transport – cars used for private and business purposes.</li> <li>PGE has been continuing a project launched in December 2016 in which a pilot run is being implemented that consists of the construction of infrastructure for an electromobility system in Łódź. In the fourth quarter of 2017, it is planned to launch the first public, fast-charging station in Łódź, and the next stations will be opened in the following months. Moreover, PGE extended its pilot "e-Mobility" project to the next locations. After signing letters of intent between PGE S.A. and the Head of the Mazovia Province and between PGE S.A, the Marshal of the Podkarpacie Province and the Office of the City of Rzeszów, the talks have been held regarding the co-operation details.</li> </ul>
Recycling	• Aim of the project: PGE Group is preparing to execute a project allowing to develop and implement a new technology for the recycling of lithium batteries, particularly those used in energy warehouse systems and to charge electric cars. This technology is intended to obtain strategic materials from used lithium batteries – cobalt, nickel and copper. The project directly supports the assumptions of the Ministry of Development concerning the transformation of the economy in the direction of closed-circuit economy, as well as the requirements of the Polish legislation specifying the needs of collection and utilization of used batteries. The project has a business potential due to the anticipated growth in the world's market of lithium batteries and the increase in the quantity of battery wastes connected with that, as well as increased demand of markets for products recycled from used batteries.
	• main activities: PGE S.A. has set up a consortium with RDLS sp. z o.o. ("RDLS"), a spin-off company of the Warsaw University operating in the area of environmental research and biotechnology. The goal of the consortium is to produce a pilot recycling installation for lithium batteries and implement this technology in Poland. The consortium, whose leader is RDLS, jointly prepared and submitted an application for funding from the NCBiR (National Centre for Research and Development). The project was recommended by NCBiR for co-financing from public funds of the Research Programme of the Power Sector ("PBSE"). An on-site inspection of information contained in a project application for a competition organised by NCBiR was successfully carried out in terms of compliance with the actual state. The most important further tasks in the fourth quarter of 2017 include permission by the Management Board of PGE S.A. for commencement of the project implementation phase and agreement on project funding between NCBiR and the consortium leader.

## 3. Key financial results of the PGE Capital Group

Key financial data	Unit	Q3 2017	Q3 2016	% change	9M 2017	9M 2016	% change
Sales revenues	PLN million	6 073	6 897	-12%	16 693	20 563	-19%
EBIT	PLN million	1 883	895	110%	3 815	1 847	107%
EBITDA	PLN million	2 663	1 643	62%	6 108	4 786	28%
Adjusted net profit attributable to equity holders of the parent company*	PLN million	1 493	682	119%	3 024	1 949	55%
LTC compensations	PLN million	1 197	131	814%	1 280	532	141%
Capital expenditures	PLN million	1 598	1 907	-16%	4 193	5 597	-25%
Net cash from operating activities	PLN million	1 963	1 934	1%	5 245	4 791	9%
Net cash from investing activities	PLN million	-1 379	-1 835	25%	-1 970	-6 436	69%
Net cash from financial activities	PLN million	-98	3 574	-	-340	3 928	
Adjusted net earnings per share*	PLN	0.80	0.36	119%	1.62	1.04	55%
EBITDA margin	%	44%	24%		37%	23%	
Key financial data	Unit	As a	t	As	at		
		September	30, 2017	December 31, 2016		% change	
Working capital	PLN million		6 323		5 702		11%
Net debt/LTM EBITDA **	x		0.49		0.70		
* Net profit adjusted by impairment loss ** LTM EBITDA - Last Twelve Months EBITDA							
Impact of one-offs on EBITDA [in PLN millic	on].						
One-offs		Q3	Q3	%	9M	9M	%
		2017	2016	change	2017	2016	change
LTC compensations		1 197	131	814%	1 280	532	141%
Revaluation of balance sheet value of certi	ficates	-57	0	-	-57	-118	52%
Voluntary Leave Program		0	-8	-	-4	-29	86%
Total		1 140	123	827%	1 219	385	217%

Management Board's report on activities of the Capital Group of PGE Polska Grupa Energetyczna S.A. for the 3-month and 9-month period ended September 30, 2017

### 3.1. Consolidated statement of comprehensive income

Chart: Key changes of recurring EBITDA in PGE Capital Group (in PLN million).



one-offs

\*adjusted for revaluation of certificates

Chart: Key changes of recurring EBITDA by segments (in PLN million).



	EBITDA Q3 2016	Conventional Generation	Renewable Energy	Supply	Distribution	Other Operations + consolidation adjustments	EBITDA Q3 2017
Change		-106	19	80	17	-7	
EBITDA reported Q3 2016	1,643	878	51	112	568	34	
One-offs Q3 2016	123	123	0	0	0	0	
Recurring EBITDA Q3 2016	1,520	755	51	112	568	34	
Recurring EBITDA Q3 2017		649	70	192	585	27	1,523
One-offs Q3 2017		1,140	0	0	0	0	1,140
EBITDA reported Q3 2017		1,789	70	192	585	27	2,663

one-offs

### 3.1.1. Consolidated statement of financial position

Chart: Key changes in Assets (in PLN million).



Chart: Key changes in Equity and Liabilities (in PLN million).



### 3.1.2. Consolidated statement of cash flows

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



Chart: Net financial debt in the three quarters of 2017 (in PLN million).



## 3.1.3. Key financial results in the business segments

Table: Breakdown of the Group's revenues by business segments for the third quarter of 2017 and 2016.

in PLN million	Q3 2017	Q3 2016	% change
Conventional Generation	3 748	2 879	30%
Renewables	161	126	28%
Supply	3 610	3 785	-5%
Distribution	1 552	1 444	7%
Other operations	86	178	-52%
TOTAL	9 157	8 412	9%
Consolidation adjustments	-3 084	-1 515	104%
TOTAL AFTER ADJUSTMENTS	6 073	6 897	-12%

Table: Key financial figures for each business segment for the third quarter of 2017 (after intrasegmental eliminations).

in PLN million	EBITDA	EBITDA EBIT		Assets of the segment*	
		Q3 2017			
Conventional Generation	1 789	1 378	1 135	37 278	
Renewables	70	4	21	3 493	
Supply	192	185	4	3 515	
Distribution	585	297	431	17 564	
Other operations	20	3	32	626	
TOTAL	2 656	1 867	1 623	62 476	
Consolidation adjustments	7	16	-25	-2 726	
TOTAL AFTER ADJUSTMENTS	2 663	1 883	1 598	59 750	

\* see note 4.1 to the consolidated financial statements

Table: Key financial figures for each business segment for the third quarter of 2016 (after intrasegmental eliminations).

in PLN million	EBITDA	EBITDA EBIT		Assets of the segment*
		Q3 2016		
Conventional Generation	878	500	1 454	34 749
Renewables	51	-13	18	3 746
Supply	112	105	7	3 485
Distribution	568	289	422	16 968
Other operations	23	-10	34	1 029
TOTAL	1 632	871	1 935	59 977
Consolidation adjustments	11	24	-28	-1 928
TOTAL AFTER ADJUSTMENTS	1 643	895	1 907	58 049

\* see note 4.1 to the consolidated financial statements

## 3.2. Key operational figures of PGE Capital Group

Table: Key operational figures.

Key figures	Unit	Q3	Q3	%	9M	9M	%
		2017	2016	change	2017	2016	change
Lignite extraction	Tons m	12.40	13.07	-5%	37.42	34.75	8%
Net electricity production	TWh	13.58	13.62	0%	41.46	39.04	6%
Heat sales	GJ m	1.33	1.12	19%	11.94	11.30	6%
Sales to final customers*	TWh	9.91	10.47	-5%	29.68	31.90	-7%
Distribution of electricity**	TWh	8.70	8.52	2%	26.20	25.43	3%

\* sales by PGE Obrót S.A. with additional estimation and with taking into account the sales within PGE Group

\*\* with additional estimation

### 3.2.1. Balance of energy of PGE Capital Group

#### **Sales of electricity**

Table: Sales of electricity outside the PGE Capital Group (in TWh).

Sales volume	Q3	Q3	%	9M	9M	%
	2017	2016	change	2017	2016	change
SALES IN TWh, including:	15.28	26.29	-42%	47.31	76.92	-38%
Sales to end-users*	9.93	10.48	-5%	29.73	31.94	-7%
Sales on the wholesale market, including:	4.72	15.27	-69%	15.52	43.39	-64%
Sales on the domestic wholesale market - power exchange	2.87	13.82	-79%	9.71	39.04	-75%
Other sales on the domestic wholesale market	1.76	1.43	23%	5.54	4.28	29%
Sales to foreign customers	0.09	0.02	350%	0.27	0.07	286%
Sales on the Balancing Market	0.63	0.54	17%	2.06	1.59	30%

\* after elimination of internal sales within PGE Group

The decline in sales volume to end customers compared to the same period of 2016 mainly results from lower contracted volume in the corporate client segment in tariff group A (Large companies), B and C2x (Small and Medium Enterprises). The lower sales volume on the power exchange results from a reduction of the so called "power exchange obligation". The increase in sales volume on the other wholesale market results from optimising the sales of produced electricity through executing larger bilateral contracts. The growth in sales to foreign clients results from intensified activity in neighbouring markets, as a result of favourable price relation between foreign and Polish market. The growth in sales volume on the balancing market in the three quarters of 2017 is related largely to the start-up run of a new unit at Gorzów CHP.

#### **Purchases of electricity**

Table: Purchases of electricity from outside of the PGE Capital Group (in TWh).

Purchases volume	Q3	Q3	%	9M	9M	%
	2017	2016	change	2017	2016	change
PURCHASES IN TWh, including:	2.67	13.71	-81%	9.04	41.40	-78%
Purchases on the domestic wholesale market – power exchange	0.43	10.80	-96%	1.48	32.01	-95%
Purchases on the domestic wholesale market, other	0.61	1.24	-51%	2.87	3.63	-21%
Purchases from abroad	0.08	0.01	700%	0.12	0.05	140%
Purchases from Balancing Market	1.55	1.66	-7%	4.57	5.71	-20%

In connection with the reduction of the "power exchange obligation" a large part of PGE Group's sales in the three quarters of 2017 was directly hedged by the Group's own production assets, which translated into a decrease in buying volumes both on the domestic market – exchange, as well as in the other markets. The buying volume decline on the balancing market is the result of a lower volume of reductions at the generation units that are part of the Conventional Generation segment.

### **Production of electricity**

Table: Production of electricity (in TWh).

Generation volume	Q3	Q3	%	9M	9M	%
	2017	2016	change	2017	2016	change
ENERGY GENERATION IN TWh, including:	13.58	13.62	0%	41.46	39.04	6%
Lignite-fired power plants	9.83	10.30	-5%	29.76	27.15	10%
including co-combustion of biomass	0.00	0.00	-	0.00	0.00	-
Coal-fired power plants	3.02	2.60	16%	7.83	8.07	-3%
including co-combustion of biomass	0.04	0.10	-60%	0.10	0.28	-64%
Coal-fired CHP plants	0.08	0.09	-11%	0.60	0.62	-3%
Gas-fired CHP plants	0.23	0.19	21%	1.69	1.50	13%
Biomass-fired CHP plants	0.04	0.13	-69%	0.14	0.37	-62%
Pumped-storage power plants	0.08	0.06	33%	0.26	0.32	-19%
Hydroelectric plants	0.07	0.07	0%	0.33	0.31	6%
Wind power plants	0.23	0.18	28%	0.85	0.70	21%

The main impact on the level of electricity production in the three quarters of 2017, as compared to the three quarters of 2016, was higher production in lignite-based power plants as a result of shorter – by 8 345 h – downtime of units in Bełchatów power plant for repairs and modernisations. During the three quarters of 2016, units no. 3 and 6 in Bełchatów power plant are in medium overhaul and unit no. 10 was being modernised. Furthermore, the average load for Elektrownia Bełchatów units in the three quarters of 2017 was higher by 7.2 MW.

The growth in production at gas-fired combined heat-and-power plants in the three quarters of 2017 compared to the three quarters of 2016 results from higher generation at Gorzów CHP, what is the result of a new gas-and-steam unit being commissioned from January 31, 2017.

The decline in production at hard coal-based plants results from lower production at Dolna Odra power plant as a consequence of longer by 4 067 h downtime of this power plant's units in repairs. Dolna Odra unit no. 7 was in medium overhaul from April 3, 2017 till September 12, 2017 and unit no. 5 was in medium overhaul from May 31, 2017 until June 17, 2017. Decreased generation at Dolna Odra power plant was partly compensated by higher production at Opole power plant due to higher utilisation of the power plant's units by PSE S.A.

The decline in production at lignite-fired power plants in the third quarter of 2017 alone was caused by medium overhaul of unit 14 at Bełchatów power plant. In this period the production was allocated to other generating units of the PGE Group. One of results of such reallocation is also an increased production at hard coal-based power plants (see p. 3.3.1 of this report).

A drop of production in biomass CHP plants results from limitation of production in the Szczecin CHP, which is a consequence of termination by ENEA S.A. of an agreement for purchase of certificates. In addition, lower volume of biomass co-combustion in power plants fuelled by hard coal results from discontinuation of production with co-combustion at the Opole Power Plant, as a result of decrease in profitability of production in this technology.

Production at coal-fired combined heat-and-power plants remained at a level comparable to the three quarters of 2016.

Higher production at wind power plants results mainly from better meteorological conditions in comparison to the three quarters of 2016.

Production at hydro power plants is slightly higher than in the three quarters of 2016, resulting mainly from better hydrological conditions.

Lower production in pumped storage power plants results from the nature of these generation units, which in the three quarters of 2017, were used to a lower extent by PSE S.A.

## 3.2.2. Sales of heat

In the three quarters of 2017 the heat sales in PGE Capital Group totaled 11.94 GJ million and were higher by 0.64 GJ million than in the analogical period of 2016. Higher heat sales resulted from increased demand for heat caused by the lower outside temperatures.

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## **3.3. Conventional Generation segment**

Diagram: Main assets of the Conventional Generation segment.



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## **3.3.1.** Key financial figures

Table: Key figures for Conventional Generation.

in PLN million	Q3 2017	Q3 2016	% change
Sales revenues	3 748	2 879	30%
EBIT	1 378	500	176%
EBITDA	1 789	878	104%
Capital expenditures	1 135	1 454	-22%

Chart: Key changes of EBITDA in Conventional Generation (in PLN million).



Key factors affecting the results of Conventional Generation segment in the third quarter of 2017 compared to the results of the third quarter of 2016 included:

- Lower electricity sales volume, mainly due to lower production at lignite-fired power plants. It's a consequence of unit 14 of Belchatów power plant being in medium overhaul from July 31 till October 16, 2017 and unit no. 2 at Turów power plant in modernization since March 1, 2017.
- Decline in electricity sales prices, which caused a decrease in revenue from sales. The average realised sales price for electricity at the Conventional Generation segment excluding the sales to final off-takers in the third quarter of 2017 was

PLN 165/MWh, compared to PLN 170/MWh in the third quarter of 2016. In addition, margin on the re-sale of electricity was lower by almost PLN 21/MWh.

- Higher proceeds from long-term contracts (LTCs), mainly due to recognition in revenues of final adjustment in amount of PLN 1 211 million in accordance with the decision of the ERO President of August 2017 (see p. 22.1 of the consolidated financial statements).
- Lower revenues from sales of certificates, mainly due to revaluation of certificates produced in Szczecin CHP recognised in September 2017 (PLN -57 million) (see p. 6 of the consolidated financial statements). In addition, limited production of green certificates in Szczecin CHP, as a result of termination of agreement for purchase of certificates by ENEA S.A., also contributed to lower.
- Lower revenue from Regulatory System Services, mainly lower revenues from reallocation of capacity due to lower sales on the Balancing Market in Dolna Odra power plant, what translates into lower volume settled within one accounting unit.

- **Higher revenues from sale of heat,** what resulted from higher demand for heat caused lower average outside temperatures.
- Higher fuel consumption costs, mainly hard coal. This is mainly the effect of higher power production at Opole power plant due to reallocation of electricity production during overhaul of unit 14 at Bełchatów power plant. In addition, hard coal price was by PLN 0.5/GJ higher. Main changes on different types of fuel are presented on the chart below.
- Lower CO<sub>2</sub> costs as a result of lower unit cost of CO<sub>2</sub> emission rights.
- Lower personnel costs, mainly due to Voluntary Leave Program costs in the comparable period, that did not occur in the current reporting period.
- Lower capitalised costs, among other, as a result of lower volume of overburden removal in mines and recognition
  of lower removal costs as asset. The above was partly offset by greater involvement of own services into investment
  execution.



### Chart: Costs of fuels consumption (including transport) in Conventional Generation (in PLN million).

## 3.3.2. Capital expenditures

Table: Capital expenditures incurred in Conventional Generation segment in the third quarter of 2017 and 2016.

in PLN million	Q3 2017	Q3 2016	% change
Investments in generating capacities, including:	1 030	1 304	-21%
<ul> <li>Development</li> </ul>	731	1 041	-30%
<ul> <li>Modernisation and replacement</li> </ul>	299	263	14%
Purchase of finished capital goods	7	12	-42%
Vehicles	1	0	-
Other	8	13	-38%
TOTAL	1 046	1 329	-21%
Capitalized costs of overburden removal in mines	89	125	-29%
TOTAL with capitalized costs of overburden removal	1 135	1 454	-22%

Highest capital expenditures in the third quarter of 2017 were incurred for the following projects:

construction of units 5 and 6 in Opole power plant	PLN 451 million;
construction of unit no. 11 in Turów power plant	PLN 243 million;
modernisation of units 1-3 in Turów power plant	PLN 44 million;
change in technology of furnace waste storage in Bełchatów power plant	PLN 30 million;
construction of a Thermal Processing Installation with Energy Recovery at Rzeszów CHP	PLN 27 million;
construction of installation to transport ash and suspension from unit 14 in Bełchatów power plant	PLN 17 million;
investment program of Pomorzany power plant	PLN 9 million.

Key activities for the Conventional Generation segment in the third quarter of 2017:

- On June 9, 2017, the Voivodeship Administrative Court in Warsaw, having examined a complaint by the ecological foundation Society for Earth, annulled a decision of the Minister of the Environment concerning an integrated permit for Opole power plant, which encompassed a water treatment station and units 5 and 6. After the receipt of a justification for the ruling, a cassation appeal was submitted to the Supreme Administrative Court in Warsaw on July 25, 2017.
- On August 30, 2017, PGE Group's Investment Committee recommended to commence the preparations phase for a new 500-MW gas-fired unit at Elektrownia Dolna Odra, including the drafting of a feasibility study as well as the commencement of administrative proceedings intended to obtain an environmental permit for this project.
- On September 26, 2017, a proposal was received to change the deadline for the construction of units 5 and 6 at Opole power plant, being implemented by the consortium: Polimex-Mostostal S.A., Mostostal Warszawa S.A., Rafako S.A. (the "Consortium") and GE Power, which is the lead designer and serves as Consortium leader managing the contract. The consortium's proposal includes a change of the investment's schedule, which would result in a change in the deadline for the commissioning of unit 5 from July 31, 2018 to December 20, 2018 and unit 6 from March 31, 2019 to July 31, 2019.

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## 3.4. Renewables segment

Diagram: Main assets of the Renewables segment.



From the third quarter of 2017 some of the companies from Renewables segment present installed capacity of installations of the segment's generating units in accordance with the Information of the ERO President regarding applying the term "installed electrical capacity" – according to date from rating plates. So fa the installed capacity was presented according to the connection agreements or project assumptions. As a result of the above changes, total installed capacity in: run-of-river hydro power plants amounts to 95.8 MW (decline by 1.0 MW), wind farms amounts to 542.0 MW (increase by 13.0 MW) and in pumped storage power plants amounts to 1542.6 MW (increase by 35.1 MW).

### 3.4.1. Key financial figures

Table: Key figures for Renewables.

in PLN million	Q3 2017	Q3 2016	% change
Sales revenues	161	126	28%
EBIT	4	-13	-
EBITDA	70	51	37%
Capital expenditures	21	18	17%





\* excluding revenues and costs relating to balancing market not affecting EBITDA result

Key factors affecting EBITDA of Renewables segment in the third quarter of 2017 compared to the results of the third quarter of 2016 included:

- Growth in revenues from electricity sales from wind farms results mainly from a higher electricity sales volume by 49 GWh compared to the third quarter of 2016.
- Increase in revenues from sale of certificates from wind power plants results mainly from: (i) recognition of revaluation of sold certificates, which resulted in a PLN (+) 24 million; (ii) higher volume of certificates production by 41 GWh in the third quarter of 2017 in comparison to the third quarter of 2016, what attributed to the growth of revenues by approx. PLN (+) 2 million in comparison to the previous year; (iii) lower volume of certificates sales by 28 GWh and lower price by approx. PLN 37.6/MWh, what attributed to the decline in revenues by approx. PLN (-) 13 million.
- Slight growth in revenues from electricity and certificates sales from hydro power plants.
- Higher revenues from sale of regulatory system services (contract with PSE S.A.) mainly due to higher usage of intervention reserve services (RIG) in the third quarter of 2017 compared to the third quarter of 2016.
- Increase in taxes and fees is mainly connected with the commissioning of new wind farms and a change in legal environment.
- Unfavourable deviation in the "Other" item results mainly from lower revenues from the other operating activity
  primarily due penalties received and accrued and compensations.

### 3.4.2. Capital expenditures

Capital expenditures incurred in Renewables segment in the third quarter of 2017 and 2016.

in PLN million	Q3 2017	Q3 2016	% change
Investments in generating capacities, including:	19	18	6%
<ul> <li>Development</li> </ul>	5	0	-
<ul> <li>Modernisation and replacement</li> </ul>	14	18	-22%
Other	2	0	-
TOTAL	21	18	17%

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## 3.5. Distribution segment

Diagram: Area of PGE distribution grid.



## 3.5.1. Key financial figures

Table: Key figures for Distribution.

in PLN million	Q3 2017	Q3 2016	% change
Sales revenues	1 552	1 444	7%
EBIT	297	289	3%
EBITDA	585	568	3%
Capital expenditures	431	422	2%

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



\* Except costs of transmission by PSE S.A.

\*\* Cost of materials and services for repair and maintenance

Key factors affecting EBITDA of Distribution segment in the third quarter of 2017 compared to the results of the third quarter of 2016 included:

- Increased volume of distributed energy by approx. 2 %, resulting from inter alia higher number of customers measured by power take-off points (by approx. 43.3 thousand) in comparison to the third quarter of 2016 and growth of the economic activity of customers 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 0.1/MWh after decreasing revenues by cost of fees for PSE S.A.
- Increase of revenues from connection fees results mainly from completion of large connection-related investment pursued by the Rzeszów Branch.
- Lower costs of energy to cover balancing difference mainly as a result of lower average purchase price of electricity along with higher by approx. 2% volume of electricity purchase.
- Increase of costs of tax on real estate in connection with an increase of grid assets value as a result of investments.
- Increase in personnel costs, resulting largely from an on-going process to optimise salaries.
- Lower costs of renovation and exploitation in connection with more effective use of the company's own resources and shift of some of the work to the following months.

## **3.5.2.** Capital expenditures

Table: Capital expenditures incurred in Distribution segment in the third quarter of 2017 and 2016.

in PLN million	Q3 2017	Q3 2016	% change
MV and LV power networks	123	134	-8%
110/ MV and MV/MV	34	39	-13%
110 kV power lines	64	16	300%
Connection of new off-takers	133	141	-6%
Purchase of transformers and energy counters	44	49	-10%
IT, telemechanics and communication	26	27	-4%
Other	7	16	-56%
TOTAL	431	422	2%

In the third quarter of 2017 the largest expenditures were incurred for the pursuing of tasks related to connection of new off-takers and modernization of MV and LV power networks, as well as expansion of HV lines. Construction of cable line 110 kV Łomianki – Czosnów in the area of Warsaw Branch, with total capex of more than PLN 51 million, was completed in August 2017.
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## 3.6. Supply segment

## **3.6.1.** Key financial figures

Table: Key figures for Supply.

in PLN million	Q3 2017	Q3 2016	% change
Sales revenues	3 610	3 785	-5%
EBIT	185	105	76%
EBITDA	192	112	71%
Capital expenditures	4	7	-43%

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



Key factors affecting EBITDA of Supply segment in the third quarter of 2017 compared to the results of the third quarter of 2016 included:

- Increase of result from electricity results from the change of sales policy, which currently is set at maximization of the total gross margin.
- Decrease in costs to redeem certificates, mainly as a result of lower market prices for green and co-generation certificates and lower demand for certificates.
- Decrease of revenues from the Agreement for Commercial Management of Generation Capacities ("ZHZW") due to lower trading volume by 1.1 TWh. Revenues of PGE S.A. from PGE GIEK S.A. decreased by PLN 8 million.
- Change in other results mainly from lower operating expenses by PLN 2 million and lower result on other operations by PLN 13 million.

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## 3.7. Other operations

#### **3.7.1.** Key financial figures

Table: Key figures for Other operations.

in PLN million	Q3 2017	Q3 2016	% change
Sales revenues	86	178	-52%
EBIT	3	-10	-
EBITDA	20	23	-13%
Capital expenditures	32	34	-6%

**Decrease in the EBITDA result of the Other operations segment by PLN 3 million** was mainly connected with the share sale agreement concluded on March 29, 2017, concerning the transfer of 100% shares of EXATEL S.A. to the State Treasury.

Increased EBITDA – by approx. PLN 6 million - of PGE Systemy S.A. that is a consequence of increasing the scope of provided services, positively attributed the segment's result.

#### 3.7.2. Capital expenditures

Capital expenditures in Other Operations in the third quarter of 2017 amounted to PLN 32 million compared to PLN 34 million in the third quarter of 2016.

Within the above amount, the highest capital expenditures in the third quarter of 2017 were incurred by the following companies:

PGE Systemy S.A. – for IT infrastructure and software development

PGE EJ 1 sp. z o.o. - for nuclear project development

PLN 24 million; PLN 7 million.

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## 4. Significant events of the reporting period and subsequent events

#### 4.1. Investment Agreement on the financial investment in Polska Grupa Górnicza sp. z o.o.

Investment Agreement on the financial investment in Polska Grupa Górnicza sp. z o.o. is described in note 22.2 to the consolidated financial statements.

#### 4.2. Capital investment in Polimex-Mostostal S.A.

Capital investment in Polimex-Mostostal S.A. is described in note 22.4 to the consolidated financial statements.

#### 4.3. Acquisition of EDF assets in Poland

Acquisition of EDF assets in Poland is described in note 22.3 to the consolidated financial statements.

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

Termination of agreements for sale of certificates by Enea S.A. is described in note 19.4 to the consolidated financial statements.

## 4.5. Description of material agreements

In the three quarters of 2017 there were no agreements meeting the criteria of material agreement.

## 4.6. Changes in the Management Board and Supervisory Board

#### **Changes in the Management Board**

On February 13, 2017 the Supervisory Board adopted resolutions on dismissal of following persons from the Management Board effective February 13, 2017:

- Mr. Henryk Baranowski, President of the Management Board;
- Ms. Marta Gajęcka, Vice-President for Market Development and International Relations;
- Mr. Bolesław Jankowski, Vice-President for Trading;
- Mr. Marek Pastuszko, Vice-President for Corporate Affairs;
- Mr. Paweł Śliwa; Vice-President for Innovations;
- Mr. Ryszard Wasiłek, Vice-President for Development;
- Mr. Emil Wojtowicz, Vice-President for Finance.

At the same time the Supervisory Board adopted resolutions on appointment of following persons to the Management Board of the tenth term of office as from February 14, 2017:

- Mr. Henryk Baranowski and entrusting him the position of the President of the Management Board;
- Mr. Bolesław Jankowski and entrusting him the position of the Vice-President for International Affairs;
- Mr. Wojciech Kowalczyk and entrusting him the position of the Vice-President for Capital Investments;
- Mr. Marek Pastuszko and entrusting him the position of the Vice-President for Corporate Affairs;
- Mr. Paweł Śliwa and entrusting him the position of the Vice-President for Innovations;
- Mr. Ryszard Wasiłek and entrusting him the position of the Vice-President for Operations;
- Mr. Emil Wojtowicz and entrusting him the position of the Vice-President for Finance.

On June 20, 2017 Mr. Bolesław Jankowski submitted his resignation from the position of Vice-President for International Affairs, effective as of July 1, 2017.

As at September 30, 2017 and as at the publication date of this report, the Management Board of the Company consisted of:

Name and surname of the Management Board member	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 Wasiłek	Vice-President for Operations	
Emil Wojtowicz	Vice-President for Finance	

#### **Changes in the Supervisory Board**

On April 6, 2017 the Company received a resignation from Mr. Mateusz Gramza from the Company's Supervisory Board with immediate effect.

On June 26, 2017, the State Treasury, represented by the Minister of Energy, by way of a written statement submitted to the Management Board of the Company, dismissed Mr. Radosław Osiński from the Supervisory Board. On June 27, 2017, Mr. Radosław Osiński was appointed by the Ordinary General Meeting to serve the function of a Member of the Supervisory Board

As at September 30, 2017 and as at the publication date of this report, the Supervisory Board of the Company consisted of:

Name and surname		
of the Supervisory Board member	Position	
Anna Kowalik	Chairman of the Supervisory Board	
Radosław Osiński	Vice-Chairman from September 19, 2017 – dependent	
Grzegorz Kuczyński	Secretary of the Supervisory Board - independent	
Jarosław Głowacki	Supervisory Board Member - independent	
Janina Goss	Supervisory Board Member - independent	
Witold Kozłowski	Supervisory Board Member - independent	
Mieczysław Sawaryn	Supervisory Board Member - independent	
Artur Składanek	Supervisory Board Member - independent	

Name and surname of the member of the Supervisory Board	Audit Committee	Corporate Gov- ernance Commit- tee	Strategy and De- velopment Com- mittee	Appointment and Remuneration Committee
Janina Goss	Member from March 2, 2016			Member from March 2, 2016
Jarosław Głowacki		Member from March 2, 2016	Member from March 2, 2016	
Anna Kowalik	Member			Member
Grzegorz Kuczyński	Member from March 2, 2016 Chairman from March 18, 2016	Member from March 2, 2016		
Witold Kozłowski		Member from Sept. 13, 2016 Chairman from October 25, 2016		Member from September 13, 2016
Radosław Osiński			Member from Sept. 13, 2016 till June 26, 2017 Chairman from October 25, 2016 till June 26, 2017 Member from Sept. 19, 2017	Member from September 13, 2016 till June 26, 2017 Member from Sept. 19, 2017
Mieczysław Sawaryn			Member from March 2, 2016	Member from March 2, 2016 Chairman from August 8, 2016
Artur Składanek	Member From Sept. 19, 2017	Member from March 7, 2016	Member from March 2, 2016	

As at September 30, 2017 the standing committees of the Supervisory Board consisted of:

## 4.7. Decisions of the President of the Energy Regulatory Office related to realisation of LTC Act

Decisions of the President of the Energy Regulatory Office related to realisation of LTC Act are described in note 22.1 to the consolidated financial statements.

#### 4.8. Legal aspects

#### 4.8.1. 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 19.4 to the consolidated financial statements.

#### 4.8.2. The issue of compensation regarding the conversion of shares

Information on the issue of compensation regarding the conversion of shares are described in note 19.4 to the consolidated financial statements.

## 4.9. Information concerning proceedings in front of court, body appropriate for arbitration proceedings or in front of public administration authorities

As at September 30, 2017 PGE S.A. and its subsidiaries were not a party of any proceedings concerning payables or debts whose total value would constitute at least 10% of the Company's equity.

Significant proceedings pending in front of courts, competent arbitration authority or public administration authority are described in note 19.4 to the consolidated financial statements.

#### 4.10. Information concerning the guarantees for loans granted by the Company or a subsidiary

Within the Group, in the three quarters of 2017 PGE S.A. and subsidiaries did not grant guarantees to other entities or to a subsidiary, where a value of guarantees constitute at least 10% of the Company's equity.

#### 4.11. 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. 1.2.1 of the foregoing report.

#### 4.12. Activities related to nuclear energy

The programme to build Poland's first nuclear power plant (the "Programme") is focusing on conducting site characterisation and environmental surveys until an environmental impact assessment report and site report are prepared. Decisions with regard to the continuation of the Programme, in the above scope or otherwise, will be made based on decisions by the Minister of Energy concerning a model for the procurement of nuclear power plant technology, financing model and an updated Programme for Poland's Nuclear Power.

#### Business partnership

As a result of the sale of shares on April 15, 2015 to the Business Partners (TAURON Polska Energia S.A., ENEA S.A. and KGHM Polska Miedź S.A.) by PGE S.A., PGE S.A. holds 70% in the share capital of PGE EJ 1 sp. z o.o. ("PGE EJ1"), and each of the Business Partners holds 10% in the share capital of PGE EJ1.

According to the Partners' Agreement, concluded on September 3, 2014, the Parties jointly undertook to finance operations under the initial phase of the Program (the "Development Stage"), proportionally to their shareholdings. The funds for the Program are paid to PGE EJ1 in form of the increase of the share capital. PGE's financial commitment in the Development Stage will not exceed amount of approx. PLN 700 million.

#### Proceeding for selection of technology

Further action with regard to delivery of technology is dependent on the final arrangements with the Ministry of Energy related to formula of technology selection, working out economic, organisational and legal solutions, including the risk distribution and estimated costs of implementation of those solutions.

#### Site characterisation, environmental and other surveys

Site characterisation and environmental surveys connected with preparations for the construction of Poland's first nuclear plant began in March 2017. Works are being conducted at two sites: Lubiatowo-Kopalino and Żarnowiec, within Choczewo, Krokowa and Gniewino municipalities in the Pomeranian Voivodeship.

The surveys are focusing on activities necessary to prepare an environmental impact assessment and a site characterisation report. The works are expected to finish by the end of 2020.

The aim of the environmental surveys is to specify the project's impact on the environment, broken down into the preparation, construction, operation and disassembly of the nuclear plant.

The aim of the site characterisation work is to obtain data to conduct an assessment of areas in terms of their usefulness as a nuclear plant site, including the verification of factors preventing the classification of area as one that meets nuclear safety requirements (major fault). The results of these works are necessary to develop solutions that ensure the plant's safe operation and reduction of its impact on the lives of nearby residents and the natural environmental to a minimum.

The surveys are being carried out by PGE EJ1, with the main role played by the survey programme contractor, ELBIS Sp. z o.o., which is part of PGE Group.

In the third quarter of 2017, PGE EJ1 continued environmental and site work, which included the signing of an agreement with a contractor for a technical and economic analysis for demolition work (for the Żarnowiec site). This work has already commenced.

Work intended to prepare the project's auxiliary infrastructure in the fourth quarter of 2017 is expected to include the acquisition of input data necessary for a transport study, analysis of the connection point for the nuclear power plant to the national transmission network, HV corridor study and water supply and waste-water discharge study.

Tender procedures to select contractors for the environmental impact assessment report and site report will also be continued in the fourth quarter of 2017.

#### Social acceptance

The main aim of activities in this area is to achieve and maintain a high level of community support at the planned nuclear plant sites (eventually, at the selected site), allowing the programme to construct Poland's first nuclear plant to be conducted and to deliver knowledge about nuclear power and about the Programme to selected stakeholder groups at national and local level.

In 2017, works in the area of community acceptance focused on continuing activities within the Site Municipality Development Support Programme, particularly within the Programme's budget for 2017 which was adopted in the first quarter of 2017.

During three quarters of 2017 further agreements were signed and executed under the Site Municipality Development Support Programme intended to reinforce partner relations of PGE and the local communities and authorities of the three municipalities by providing support to initiatives that are of significance to the residents and development of the region.

Work in the above scope is expected to be continued in the fourth quarter of 2017.

#### Legal regulations concerning nuclear energy

In the first half of 2017, PGE S.A. and PGE EJ1 participated in public consultations on a draft act on amendment of the Nuclear Law, on a draft of the Urban and Construction Code Law and on draft Water Law act.

In the third quarter of 2017, PGE S.A. and PGE EJ 1 took part in social consultations concerning a draft of the act on amendment of certain other acts in connection with a simplification of the investment and construction process and a draft of the act on investment administration and construction supervision organs.

Work in the above scope is expected to be continued in the fourth quarter of 2017.

#### **Compensations from WorleyParsons**

In 2013, PGE EJ1 sp. z o.o. signed an agreement for environmental studies, site characterisation and services related to obtaining permits and permissions necessary in the investment process associated with the construction of a nuclear power plant with a consortium of WorleyParsons Nuclear Services JSC, WorleyParsons International Inc. and WorleyParsons Group Inc. ("WorleyParsons"), in the amount of approximately PLN 253 million net (including basic scope of approximately PLN 167 million). Due to delays in the implementation of the agreement, in 2013 PGE EJ1 accrued to WorleyParsons a contractual penalty in the amount of approximately PLN 7 million. In addition, in connection with a further improper execution of services in 2014, PGE EJ1 accrued contractual penalties in the total amount of approximately PLN 43 million. On December

23, 2014, PGE EJ 1 terminated the contract for reasons attributable to WorleyParsons.

Contractual penalties of 2013 were deducted from the remuneration payable to WorleyParsons in 2014. Penalties for 2014 were partly deducted from the remuneration payable to WorleyParsons and partly obtained from the bank guarantee. After all deductions and amounts received by the company from the bank guarantee, PGE EJ1 is entitled to claim towards WorleyParsons for payment of approximately PLN 14 million as a penalty by way of delay.

On August 7, 2015 PGE EJ 1 filed with the District Court in Warsaw a claim against WorleyParsons for the payment of approximately PLN 15 million plus statutory interest for late payment of the amount due.

On November 13, 2015, PGE EJ1 received a payment demand from WorleyParsons for about PLN 59 million due for WorleyParsons remuneration, which - according to the claimant - was deducted unduly, for the works that in opinion of WorleyParsons were unjustifiably not accepted and for the project management, as well as funds collected from the bank guarantee. The court obligated PGE EJ 1 sp. z o.o. to submit a statement of defence within three months from receipt. Moreover, value of claims by WorleyParsons amounting to approximately PLN 54 million was included in the WorleyParsons' payment demand for PLN 92 million of March 13, 2015 with regard to termination of the agreement. On March 24, 2017, PGE EJ1 received a procedural document expanding the action being brought by WorleyParsons from approximately PLN 59 million to approximately PLN 104 million (i.e. by around PLN 45 million). It is possible that WorleyParsons will file another claim amounting to approximately PLN 32 million representing the difference in amount of claims from the demand for payment of March 13, 2015 and the expanded claim received on March 24, 2017.

On March 29, 2017, mediation between the Parties took place – the meeting did not result in a settlement. The court meeting in this case is postponed until December 8, 2017. The deadline for replying to WorleyParsons' letter expanding their claim is February 3, 2018.

PGE EJ1 does not accept the claim and regards its possible admission by the court as less likely than its dismissal.

Furthermore, on May 20, 2016, PGE EJ1 filed a motion with the District Court for the Capital City of Warsaw in Warsaw to commit WorleyParsons to attempt reaching a settlement concerning PGE EJ1's claims of PLN 41 million together with statutory interest for compensation for undue contractual performance. A conciliation meeting at the court is scheduled for June 8, 2017. During the hearing on June 8, 2017, the Court stated that a certified copy of the application was not delivered to the American WorleyParsons companies, and therefore it adjourned the hearing without setting a date. On July 3, 2017, a representative of PGE EJ1 received information that a certified copy of the application was delivered to the American companies. At a hearing on September 19, 2017, the court ruled that a settlement had not been agreed and concluded the case.

## 4.13. Sale of 100% stake in Exatel S.A. to the State Treasury

Information on sale of 100% of the shares of Exatel S.A. to the State Treasury are described in note 8 to the consolidated financial statements.

## 4.14. Distribution of profit for 2016

Information on distribution of profit for 2016 is presented in note 16.3 to the consolidated financial statements.

#### 4.15. Termination of agreements for sale of certificates by Energa-Obrót S.A.

Termination of agreements for sale of certificates by Energa-Obrót S.A. is presented in note 19.4 to the consolidated financial statements.

#### 4.16. Network failures caused by strong wind

In the third quarter of 2017, PGE's distribution network area was subject to hurricane-level winds, which resulted in mass power network failures. Due to these downtimes caused by catastrophic events, the Company's SAIDI and SAIFI quality targets for 2017 might be beyond reach. Any potential impact of the Company's failure to reach its SAIDI and SAIFI targets in 2017 on the Group's financial results will be visible in 2019 (see p. 8.4.2 in this report). Currently, all Distribution Network Operators are in talks with the Energy Regulatory Office concerning the exclusion of the effects of extraordinary events from these indicators, which are taken into account in the quality. Management Board's report on activities of the Capital Group of PGE Polska Grupa Energetyczna S.A. for the 3-month and 9-month period ended September 30, 2017

## 5. Transactions with related entities

Information about transactions with related entities is presented in note 21 to the consolidated financial statements.

## 6. Publication of financial forecasts

PGE S.A. did not publish financial forecasts.

## 7. Information about shares and other securities

#### 7.1. 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%
Total	1 869 760 829	1 869 760 829	100.00%

# 7.2. 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 first half of 2017 held following number of shares:

Table: PGE S.A. shares held and managed directly by the members of management and supervisory authorities of the Company.

Shareholder	Number of shares as of date of publishing of the consolidated report for H1 2017 (i.e. August 8, 2017)	Change in number of owned shares	Number of shares as of submission date of the quarterly report (i.e. November 7, 2017)	Nominal value
Management Board	-			-
Supervisory Board	7		- 7	71.75
Jarosław Głowacki	7		- 7	71.75

Other member of the Management Board and Supervisory Board did not hold shares of the Company.

Table: shares of entities related to PGE S.A. held and managed directly by the members of management and supervisory authorities of the Company.

Shareholder	Number of shares as of date of publishing of the consolidated report for H1 2017 (i.e. August 8, 2017)	Change in number of owned shares	Number of shares as of submission date of the quarterly report (i.e. November 7, 2017)	Nominal value
Management Board	-			-
Supervisory Board	1		- 1	2.00
Jarosław Głowacki*	1		- 1	2.00

\* 1 share of Polimex – Mostostal S.A.

Other members of the Management Board and Supervisory Board did not hold shares in the entities related to PGE S.A.

## 8. Electricity market and regulatory and business environment

## 8.1. 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 the third quarter of 2017, gross electricity consumption went up 2.6% compared to the analogical period of the previous year. The increase was higher than in the previous year, when consumption went up 0.7% compared to the analogical period of 2015.

Economic trends in the third quarter of 2017 remained positive in general. Median from the financial institutions forecasts for the GDP after three quarters of 2017 indicates growth by 4.4% compared to the same period of the previous year.



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

Source: GDP forecasts of financial institutions according to the survey by the Central Statistical Office of Poland, PSE

Economic growth and rising electricity consumption were accompanied by optimistic condition of Polish industry, which is responsible for approx. 45% of domestic electricity consumption. The Purchasing Managers' Index (PMI) for industry reached 52.2 points in the third quarter of 2016, and 52.8 points on average in the third quarter of 2017. This is above the 50-point threshold, which means the respondents expect the sector's situation to improve. The positive result stems mainly from growing production, employment and consumption. The results of the Polish industrial sector should be further strengthened by the Eurozone, whose PMI for the third quarter of 2016 reached an average level of 52.1 points, and 57.4 points in the analogical period of 2017.

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



Source: Markit Economics

Positive development in the Polish economy is confirmed by dynamics in overall industrial production. In the third quarter of 2017, it went up by 6.3% y/y, compared to 2.5% in the comparable period of the previous year. The change resulted from increase in industrial production dynamics (7.1% y/y in the third quarter of 2017 versus 3.3% in the third quarter of 2016). Simultaneously, production in the whole energy sector increased by 8.8% y/y in the third quarter of 2017 vs -7.3% in the third quarter of 2016). The value of industrial manufacturing depends on volumes of goods produced and prices. PPI in the third quarter of 2017 amounted to 3.3% in relation to comparable period of the preceding year. CPI reading amounted to 2.2% y/y at the end of September 2017.

Table: Key economic indicators for Poland.

Key economic indicators (% change y/y)	Q3 2017	Q3 2016
GDP <sup>1</sup>	4.4	2.2
CPI <sup>2</sup>	2.2	-0.5
PPI <sup>3</sup>	3.3	0.2
Sold industrial production <sup>3</sup>	6.3	2.5
Sold production – manufacturing <sup>3</sup>	7.1	3.3
Sold production – energy <sup>3</sup>	8.8	-7.3
Dynamics of domestic electricity consumption <sup>4</sup>	2.3	0.7
Gross domestic electricity consumption (TWh) <sup>4</sup>	40.6	39.6
EUR/PLN <sup>5</sup>	4.27	4.34

Source: <sup>1</sup> For H1 2017 GDP - survey among financial institutions, for H1 2016 - data by the Central Statistical Office of Poland, <sup>2</sup> National Bank of Poland, <sup>3</sup> Central Statistical Office of Poland, <sup>4</sup> PSE S.A., <sup>5</sup> National Bank of Poland.

## 8.2. Regulatory environment

	nment – current issues
Domestic	<ul> <li>work on the National Action Plan concerning the power effectiveness for Poland 2017, works on new Energy Policy of Poland until 2050</li> <li>changes in scope of services like:         <ul> <li>modification of current Operational Reserve mechanism</li> </ul> </li> </ul>
	<ul> <li>implementation of further packages for demand reduction services</li> </ul>
	<ul> <li>implementation of capacity market</li> <li>further amendments to the Law on Renewable Energy Sources, defining support scheme for energy generation in renewables, including in particular the entry into force of a change in the substitute fee calculation procedure and work on a draft that includes new technological baskets</li> </ul>
	<ul> <li>publication of the regulation of the Minister of Energy of August 11, 2017 concerning a chang in the volume share in total electricity resulting from redeemed certificates of origi confirming generation of electricity from renewable sources of energy in 2018-2019</li> <li>parameters and auction schedule for RES installations and level of reference prices – o September 29, 2017 the Council of Ministers issued a new regulation pursuant to which the</li> </ul>
	<ul> <li>volume of energy that must be sold in auctions in 2017 is 0 MWh</li> <li>act on investments with regard to wind power plants – inability to build new power plants at a distance less than 10 times the height of the turbine, divergent court rulings regardir property tax base (whether just the mast or the entire installation with turbine)</li> <li>introduction of support scheme for highly-efficient co-generation</li> </ul>
	<ul> <li>publication of Commission Implementing Decision (EU) 2017/1442 of July 31, 201 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of th European Parliament and of the Council, for large combustion plants</li> <li>results of explanatory proceedings before the ERO President and court disputes in case</li> </ul>
	<ul> <li>results of explanatory proceedings before the ERO President and court disputes in case of issue of certificates of origin of energy produced from biomass for some of the branches of PGE GIEK S.A.</li> <li>matter of implementation of quality tariff in distribution, that will make regulated incom</li> </ul>
	<ul><li>dependant on SAIDI and SAIFI ratios and connection time, among others</li><li>possible different decision in law disputes, from which most relevant were presented in not</li></ul>
	<ul> <li>19.4 to the consolidated financial statements</li> <li>work on a draft regulation of the Council of Ministers concerning fees for water services ar specific use of water, establishing unit fee rates for use of water for energy purposes</li> <li>work on a legislative package that is intended to transform linear economy towards a circula economy and might contribute to a change in the classification of coal combustic by-products</li> </ul>
	<ul> <li>work on the act on electrical mobility whose purpose is to facilitate the construction of infrastructure for charging electrical cars</li> </ul>
International	<ul> <li>regulations of climate and energy package determining reduction targets for years 2021-2030 legal implementation of energy union concept, including inter alia:</li> <li>legislative proposal regarding revision of Directive 2003/87/EC (the EU ETS Directive including provisions specifying the following: level of linear reduction factor (LRF), division of emission allowances into emissions sold at auctions and allocated free of charge, removal of a specific volume of emissions, operation of the Market</li> </ul>
	<ul> <li>Stabilisation Reserve mechanism, level of funds and ways of fund distribution for the Modernisation Fund, ways of distributing free of charge emission allowances. Currently final arrangements are under way concerning the position of the European Commission the European Parliament and European Council within the so-called "trilogues"</li> <li>legislative proposal with regard to revision of the Renewable Energy (RED II) Directive including setting out the means by which Poland is to contribute to the 27% share</li> </ul>
	<ul> <li>renewable energy in the energy mix at EU level by 2030. The draft includes, inter alia, proposal for legislation that restricts the use and further support of biomass</li> <li>legislative proposal related to internal electricity market regulation ("EMR") and a legislative proposal related to common rules for internal electricity market ("EMD"), the second second</li></ul>

aim of which is the creation of a new structure for a single energy market, including through the introduction of numerous pro-consumer solutions and increasing market flexibility and intervention into the capacity mechanism structures (specifically, the proposal to introduce European assessment of capacities sufficiency and a  $CO_2$  emission standard for capacity market units at a level of 550 g/kWh)

- legislative proposal regarding regulation on energy union governance, which is to create a system for managing the implementation of energy union objectives that is based on cooperation with other member states and on arrangements made by the European Commission. As regards achieving the renewable energy objective, the draft includes the creation of a financial platform funded by contributions from member states
- legislative proposal with regard to revision of the Energy Efficiency Directive (EED), including setting out the means by which Poland is to contribute to the 30% improvement in energy efficiency at EU level by 2030.
- regulations connected with the reduction of emissions of pollutants implemented within the framework of environmental policy, including:
  - completed process of revising the Best Available Techniques ("BAT") conclusions concerning best available techniques for large combustion plants were published in the EU Journal on August 17, 2017. In connection with this, the deadline for adapting installations is four years from publication, i.e. August 17, 2021.

#### 8.3. Electricity prices

#### **Domestic market - Prices**

#### **Day-ahead market**

In the third quarter of 2017, the average price of energy on the day-ahead market<sup>1</sup> was PLN 163/MWh and was 9% higher than the average price (PLN 149/MWh) in the same period of last year. The increase in price was connected with the situation on related markets: the prices for  $CO_2$  emission allowances increased in the third quarter of 2017 by 1/3 in comparison to the same period last year. Moreover, coal prices went up – the average level of the Polish Steam Coal Market Index ("PSCMI1") in the period July-August<sup>2</sup> 2017 increased 7% to PLN 9.3/GJ, compared to PLN 8.7/GJ in the same period last year. On the other hand, a 34% increase in wind energy supply compared to the same period last year was a factor limiting the rise of energy prices.

On a cumulative basis, in the first three quarters of 2017 the average price on the day-ahead market was PLN 155/MWh, down 2% from the average price of PLN 158/MWh in the same period last year. The decline in price over the first three quarters of 2017 resulted from a lighter overhaul schedule at lignite-fired generating units than in the same period of the previous year, which made it possible to shift production in the National Power System to units with lower variable costs. Another factor was an increase in wind energy generation by 25% from the same period last year. Meanwhile, the average prices of  $CO_2$  emission allowances ("EUA Dec17") in the first three quarters of 2017 remained largely unchanged (y/y) and did not contribute to the declines in energy prices, while the index PSCMI1 during the period January-August 2017 was at PLN 9.1/GJ, i.e. 3% higher (y/y).

<sup>2</sup> At the time of writing this report, PSCMI1 for September was not available

<sup>&</sup>lt;sup>1</sup> Statistics counted for data from the fixing

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Chart: Monthly prices and price volatility at the day ahead market in 2016–2017 (TGE)\*

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

#### **Forward market**

The average price for BASE\_Y-18 contracts in the third quarter of 2017 reached PLN 165/MWh, while in the same period of last year BASE\_Y-17 was PLN 159/MWh on average (+4% y/y). Trading volume for BASE\_Y-18 in the third quarter of 2017 was 11.6 TWh – this is 7% higher than the BASE\_Y-17 trading volume in the third quarter of 2016.

The average price for PEAK5\_Y-18 contracts in the third quarter of 2017 reached PLN 210/MWh and remained at the same level as analogical contract PEAK5\_Y-17 quoted in the third quarter of 2016. PEAK5\_Y-18 trading volume in the third quarter of 2017 amounted to 1.7 TWh – this is by 81% higher than the PEAK5\_Y-17 in the third quarter of 2016.

Cumulatively, in the three quarters of 2017 the average price for BASE\_Y-18 contracts amounted to PLN 163/MWh and was by 3% higher than analogical BASE\_Y-17 quotations in the three quarters of 2016 (PLN 159/MWh). BASE\_Y-18 trading volume in the three quarters of 2017 amounted to 28.7 TWh – this is 13% lower than the BASE\_Y-17 trading volume in the three quarters of 2016.

The average price for PEAK5\_Y-18 contracts in the three quarters of 2017 reached PLN 210/MWh and remained at unchanged level compared to average price of PEAK5\_Y-17 in the three quarters of 2016. PEAK5\_Y-18 trading volume in the three quarters of 2017 amounted to 3.4 TWh – this is 6% higher than the PEAK5\_Y-17 trading volume recorded in the three quarters of 2016.



Chart: Monthly prices and price volatility on the forward market in 2016–2017 (TGE)\*.

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

#### **International market**

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

In the third quarter of 2017, wholesale energy prices increase in all countries in the region: the largest increases were recorded in Hungary (44% y/y, nominally by PLN 66/MWh). The smallest increases were noted in Lithuania and Latvia, where the year-on-year dynamic was close to 2-3% (PLN 3-4/MWh). In most of the region's countries, wholesale energy prices went up by over a dozen percent: 12% y/y in Sweden (PLN 15/MWh), 14% in Germany (PLN 17/MWh) and 18% in the Czech Republic (PLN 24/MWh). From this perspective, the increase in price on the day-ahead market in Poland – by 9% y/y (PLN 14/MWh) – is in line with the regional trend. The common driver of energy price hikes in the region's countries was the situation on related commodity markets: increase in coal and  $CO_2$  emission allowance prices.

As regards cross-border exchange balances, differences in energy prices between Poland and its neighbours are important. In the third quarter of 2017, the average energy price in Poland was higher than in the neighbouring countries: by PLN 19/MWh in the case of Sweden and by PLN 23/MWh in the case of Germany. Energy was also cheaper in the Czech Republic, by an average of PLN 8/MWh, and in Lithuania, by an average of PLN 5/MWh.

Chart: Comparison of average prices on Polish market and on selected European markets in the third quarter of 2017 (prices in PLN/MWh, average exchange rate EUR/PLN 4.26).



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

#### **International trading**

Chart: Monthly imports, exports and cross-border exchange balance in 2016-2017 (in GWh).



Source: own work based on PSE data.

During the third quarter of 2017, Poland was a net importer of electricity: the balance of commercial exchange amounted to 1.02 TWh (1.58 TWh of import and 0.56 TWh of export). In the same period last year, Poland was also a net importer, with an exchange balance of 0.89 TWh (including 1.11 TWh import and 0.22 TWh export). On a year-on-year basis, the trade 53 of 65

exchange between Poland and Germany was observed. Net import from Germany in the third quarter of 2017 was close to 0.18 TWh (0.29 TWh import and 0.11 TWh export). In the same period last year this volume was marginal (0.01 TWh). The key partner in trade exchange is Sweden – this direction accounted for approx. ¾ of total net import, similar to the previous year.

On a cumulative basis, in the first three quarters of 2017 Poland remained a net importer of energy, with a balance of 2.26 TWh (4.82 TWh import and 2.56 TWh export), compared to 3.55 TWh in the same period of the preceding year (4.00 TWh import and 0.45 TWh export). Sweden remains the key import direction: the balance of 2.23 TWh remained close to last year's level. Comparing to the same period last year, the first three quarters of 2017 featured significantly larger export in the southern/western direction: the total volume of net export to Germany, Czech Republic and Slovakia was 1.38 TWh, compared to just 0.10 TWh a year earlier.

Diagram: Geographical structure of commercial exchange in the three quarters of 2017 (GWh).



Source: own work based on PSE 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 2017<sup>3</sup>, an additional burden for individual customers accounted for 24% of the electricity price, compared to the EU average of 31%. In Denmark and Germany the proportion of additional charges in the price of electricity exceeded 50%.

<sup>3</sup> Eurostat data are published every six months.

Chart: Comparison of average prices for individual customers in selected EU countries in the first half of 2017 (prices in PLN/MWh).



Source: own work based on Energy prices in the EU. Eurostat, the statistical office of the European Union. EUR/PLN 4.27

Diagram: The share of additional charges in electricity prices for the individual customers in selected EU countries in the first half of 2017 (prices in PLN/MWh, calculated with average exchange rate EUR/PLN 4.27).



Source: Eurostat.

## 8.3.1. Prices of certificates

In the third quarter of 2017, the average price of green certificates (PMOZE) reached PLN 43/MWh and was 12% lower than in the same period last year (index OZEX\_A). At the same time, the third quarter brought a reversal of a down-trend that had lasted six quarters (the increase was 54% on a quarter-on-quarter basis). The reversal for the green certificate market was driven by an updated act on renewable energy sources, which amended the way in which the substitute fee is calculated – nominal establishment of the substitute fee (previously at PLN 300/MWh) was replaced by establishing the substitute fee on a relative basis as 125% of the average market price from the previous year. At the same time, market price changes were also affected by a regulation of the Minister of Energy that introduced an obligation to redeem<sup>4</sup> green certificates at 17.5% in 2018, compared to 15.4% in 2017.

The average price of yellow certificates in the third quarter of 2017 reached PLN 116/MWh and was 3% lower than in the same period last year. The decline resulted from a higher supply of energy produced in gas-fired cogeneration sources and a reduction of the substitute fee from PLN 120/MWh in 2017 to PLN 115/MWh in 2018. The obligation to redeem yellow certificates will increase to 8% in 2018, compared to 7% in the current year.

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-15, PMGM-16, PMGM-17.

<sup>&</sup>lt;sup>4</sup> Redemption obligation concerns the sale of electricity to the final customer. The seller is obliged to redeem a number of "coloured" certificates (in relation to the volume of electricity sold) specified by the regulator.

## 8.3.2. Prices of CO<sub>2</sub> emission rights

Two types of emission rights are available on the market – European Union Allowances ("EUA") and Certified Emission Reductions ("CER"). CER-type rights may be redeemed by business operators only to a limited extent, in settlement period 2013-2020 up to 11% of the allocations granted under the National Allocation Plan for years 2008-2012.

EUA prices are one of the key factors determining wholesale energy prices and PGE Group's financial results. PGE Group bears the costs of purchasing EUA allowances to cover the deficit, i.e. the difference between  $CO_2$  emissions at PGE Group's generating units and the free-of-charge allowances received under derogation in accordance with the National Investment Plan.

In the third quarter of 2017, the average weighted price of EUA DEC 17 was EUR 6.15/t and was 34% higher than the EUR 4.58/t price of EUA DEC 16 in the same period last year. The increase was driven inter alia by uncertainty over the EU-ETS reform concerning the settlement period after 2020. Moreover, the CO<sub>2</sub> market sentiment correlated with strong uptrend observed since August on other commodities markets. Unfavourable hydrological conditions and low level of generation in hydro power plants and limitation of production in nuclear power plants announced in France, attributed to the rising prices of electricity and fossil fuels.

On a cumulative basis, in the first three quarters of 2017 the average weighted price of EUA DEC 17 was EUR 5.43/t and was 1% lower than the EUR 5.47/t price of EUA DEC 16 in the same period last year. In the first three quarters of 2017, trade on the primary market reached 716.8 million t of  $CO_2$ , compared to 550.2 million t of  $CO_2$  in the same period of the preceding year.

The initial decline of prices in comparison with 2016 could have been caused by the end of a three-year backloading period, which led to an increase in the supply of EUAs on the primary market. The price continued to decline until May 11, 2017, when the DEC17 product recorded its lowest price of EUR 4.35/t. From then, the price systematically rose, reaching quarterly maximum on September 25, 2017 (EUR 7.28/t).

In the first three quarters of 2017, EUA prices in forward contracts for December 2017 were in the range of EUR 4.35-7.28/t. In this period, CER units in forward contracts for December 2017 were valued at EUR 0.18-0.29/t.



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

Source: Bloomberg, own work

#### 8.3.3. 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 2017 and energy for 2016, while free allowances for electricity for 2017 will be received by the Group by the end of April 2018, 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 2016 was completed in April 2017.

Table: Emission of  $CO_2$  from major Group installations in the third quarter of 2017 and in three quarters of 2017 in comparison to allocation of  $CO_2$  emission rights for 2017 (in Mg).

Operator	CO <sub>2</sub> emissions in Q3 2017*	CO <sub>2</sub> emissions in 9M 2017*	Allocation of CO <sub>2</sub> emission rights for 2017**
Bełchatów Power Plant	9 512 444	28 661 414	7 788 822
Turów Power Plant	1 795 128	5 385 908	3 135 350
Opole Power Plant	1 897 426	4 718 933	1 802 162
ZEDO	1 027 327	3 178 067	1 484 923
Bydgoszcz CHPs	104 160	529 860	347 386
Lublin Wrotków CHP	18 654	314 191	202 222
Gorzów CHP	68 705	299 683	158 071
Rzeszów CHP	24 102	206 956	94 345
Kielce CHP	14 303	129 217	64 141
Zgierz CHP	31 253	135 347	26 016
TOTAL	14 493 502	43 559 576	15 103 438

\* estimates, emissions not verified - the data will be settled and certified by the authorised verifier of CO2 emission on the ground of yearly reports of volume of CO2 emissions

\*\* amount of granted CO2 emission rights will be confirmed in the Regulation of the Council of Ministers in the first quarter of 2018

## 8.3.4. Termination of long-term contracts (LTC)

Due to the termination of LTCs in accordance with the LTC Act, the producers being earlier the parties to such contracts obtained a right to receive compensations for the coverage of so called stranded costs. Stranded costs were capital expenditures resulting from investments in generating assets made by the generator before May 1, 2004 that a generator is not able to recoup from revenues obtained from sales of generated electricity, spare capacity and ancillary services in a competitive environment after early termination of LTC. The LTC Act limits the total amount of funds that may be paid to all generators to cover stranded costs, discounted as at January 1, 2007, to PLN 11.6 billion, including PLN 6.3 billion for PGE.

Table: Key data relating to PGE Group generators subject to the LTC Act.

Generator	LTC maturity	Maximum amount of stranded and additional costs	
		(in PLN million)	
Turów Power Plant	2016	2 571	
Opole Power Plant	2012	1 966	
ZEDO	2010	633	
Lublin Wrotków CHP	2010	617	
Rzeszów CHP	2012	422	
Gorzów CHP	2009	108	
TOTAL		6 317	

In the period provided for by the LTC Act, i.e. till December 31, 2007, PGE S.A. signed LTC termination agreements with generators being parties to the then applicable LTCs. Therefore generators obtained a right to receive funds to cover their stranded costs.

An adjustment period for PGE GIEK S.A. producers covered by the compensation system ended in December 2016.

On April 5, 2017, PGE GiEK S.A. received information about the initiation of a proceeding regarding the amount of annual adjustment of stranded costs for 2016. On April 10, 2017, PGE GiEK S.A. received information about the initiation of a proceeding regarding the amount of final adjustment of stranded costs.

According to the provisions of the LTC Act, the process of establishing the annual adjustment of stranded costs for 2016 was completed on July 31, 2017 by way of the ERO President decision, while the process of establishing the final adjustment of stranded costs by way of the ERO President decision of August 25, 2017. Due to lack of disputes in above cases, decisions issued by the ERO President ultimately concluded the participation of PGE GIEK S.A. producers in the compensation system.

The impact of LTC compensations on results achieved by the PGE Group is described in note 22.1 to the consolidated financial statements.

## 8.4. Supply markets

## 8.4.1. Fuel purchase costs

Table: Volume and cost of purchase of fuels from third party suppliers in the third quarter of 2017 and 2016.

	Q3 2017		Q3 2016	
Type of fuel	Volume (tons ths)	Cost (PLN m)	Volume (tons ths)	Cost (PLN m)
Hard coal	1 305	293	1 417	303
Gas (cubic metres ths)	76 735	37	68 688	35
Biomass	108	21	247	57
Fuel oil	8	10	11	11
TOTAL		361		406

Table: Volume and cost of purchase of fuels from third party suppliers in the three quarters of 2017 and 2016.

	9M 2017		9M 2016	
Type of fuel	Volume (tons ths)	Cost (PLN m)	Volume (tons ths)	Cost (PLN m)
Hard coal	3 751	839	3 755	807
Gas (cubic metres ths)	445 421	303	422 575	291
Biomass	361	67	748	168
Fuel oil	21	28	31	29
TOTAL		1 237		1 295

In the three quarters of 2017 the costs of purchasing primary fuels from providers outside the Group amounted to PLN 1 237 million and were lower by PLN 58 million than in the three quarters of 2016. Costs of purchase of the fuels in PGE Capital Group were mainly affected by biomass and hard coal.

Biomass

- Lower purchase volume by 52% (PLN -87 million)
- Lower average price by 18% (PLN -14 million)

The lower volume of biomass purchases resulted from lower electricity production based on combustion and co-combustion of biomass given the non-profitability of biomass combustion (see p. 3.2.1 of this report).

Hard coal

Higher average price by 4% (PLN +32 million)
 The higher price of hard coal in the three quarters of 2017 mainly results from the growing prices on the domestic and international mining market, which translates directly into higher contractual prices.

Gas

Higher purchase volume by 5% (PLN +12 million)

Higher volume of gas used is related to increases production at gas-fired CHPs (see p. 3.2.1 of this report). Fuel oil

Lower purchase volume by 32% (PLN -9 million)

The lower volume of heating oil purchases in the three quarters 2017, comparing to the same period of 2016, was caused by a lower number of energy unit start-ups connected with failures, planned repairs and demand from the TSO.

Higher average price by 43% (PLN +8 million)
 The significant increase in the average price for heating oil was driven by growth in oil and refinery product prices across the world.

In the three quarters of 2017 approximately 72% of the electricity was produced from internally sourced lignite, whose extraction price is fully controlled by PGE Capital Group. In the analogical period of 2016 the share of lignite-based electricity generation amounted to 70%.

## 8.4.2. Tariffs

PGE Group companies earn part of their income based on tariffs approved by the President of the Energy Regulatory Office:

- tariffs for the sale of electricity to households (G tariff group);
- tariffs of the distribution companies;
- tariffs for heat.

#### Distribution of electricity

Methodology of and assumptions for tariffs determination were published in the document "Tariffs for the DSO for the year 2017", which was prepared and published by the President of the Energy Regulatory Office.

On December 15, 2016 the ERO President approved the Tariff of PGE Dystrybucja S.A. for electricity distribution services for the period from January 1, 2017 until December 31, 2017.

#### Tariff came into force on January 1, 2017.

Distribution tariffs for 2017 approved by the President of the Energy Regulatory Office, contributed to changes in average tariff in particular tariff groups (calculated for revenues and volume in a given tariff year) in comparison to year 2016:

- A tariff group decrease by 0.15%;
- B tariff group increase by 5.89%;
- C+R tariff group increase by 3.77%;
- G tariff group increase by 6.23%.

The change in distribution service rates takes into consideration a significant increase in the transition fee (from approx. 80% for tariff B groups to 106% for customers with highest consumption in tariff G groups) related to the costs of liquidating long-term contracts and RES fee (by approx. 47%) related to support mechanisms for the production of energy from renewable sources. These fees have an impact on growth of regulated revenue and distribution service fees, but they are fully transferred to entities in charge of support instruments, thus they do not impact profit of the distribution companies.

Changes in average tariff in particular tariff groups (not including RES fee and transition fee) are as follows:

- A tariff group no change;
- B tariff group decrease by 0.55%;
- C+R tariff group decrease by 0.22%;
- G tariff group increase by 0.64%.

The quality regulation elements introduced in 2016 are being continued in 2017. It has been settled that the ratios directly impacting the regulated revenue will be following key performance indicators:

- SAIDI System Average Interruption Duration Index;
- SAIFI System Average Interruption Frequency Index;
- Connection time;
- Transfer time of metering and billing data ("CPD"), which will be included in the quality regulations as of 2018.

Not meeting the levels of ratios indicated by the ERO President will result in penalty of decreasing the regulated revenue through reduction of amount of return on capital in year t+2. In the initial period no rewards are anticipated for achieving better indicators than the required ones.

Impact of quality parameters realized in 2017 will be included in tariff for 2019. In accordance with the assumptions adopted by the ERO, a penalty cannot exceed 2% of regulated revenue and value of 15% of return on capital in a given year.

#### Tariff for heat

Pursuant to the Energy Law, energy companies holding concessions set tariffs for heat and propose their duration. Conduction of proceedings concerning heat tariffs approval lies within the competence of regional branches of the Energy Regulatory Office. Average sale price of heat in PGE decreased by approximately 2% in comparison to the prices in the three quarters of 2016.

## 9. Statements of the Management Board

## 9.1. Statement on the reliable preparation of the financial statements

To the best knowledge of the Management Board of PGE S.A., the periodic consolidated financial statements and comparative data were prepared in accordance with the governing accounting principles, present a fair, true and reliable view of the material and financial situation of PGE Capital Group and its financial result.

The report of the Management Board on the activities of PGE Capital Group presents a true view of the development, achievements and situation of the Capital Group.

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

The foregoing Management Board's Report on activities of the Capital Group of PGE Polska Grupa Energetyczna S.A. was approved for publication by the Management Board of the parent company on November 7, 2017.

Warsaw, November 7, 2017

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

President	
of the Management Board	Henryk Baranowski
Vice-President	
of the Management Board	Wojciech Kowalczyk
Vice-President	
of the Management Board	Marek Pastuszko
Vice-President	
of the Management Board	Paweł Śliwa
Vice-President	
of the Management Board	Ryszard Wasiłek
Vice President	
Vice-President	
of the Management Board	Emil Wojtowicz

#### Glossary

Glossary	
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.
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.
CCS	Carbon Capture and Storage Technology used to capture $CO_2$ from the emissions of fossil fuel power plants followed by its underground storage.
CDM	Clean Development Mechanisms, one of the flexible mechanisms introduced under Article 12 of the Kyoto Protocol.
CER	Certified Emission Reduction.
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.
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.
ERO	Energy Regulatory Office (pol. URE).
ERU	Emission Reduction Units.
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 GW = 109 W.
GWe	one gigawatt of electric capacity.
GWt	one gigawatt of heat capacity.
НІСР	Harmonised Index of Consumer Prices
High Voltage Network (HV)	a network with a nominal voltage of 110 kV.

## Management Board's report on activities of the Capital Group of PGE Polska Grupa Energetyczna S.A. for the 3-month and 9-month period ended September 30, 2017

Highly efficient co- generation	the generation of electric or mechanical power and useful heat through co-generation, in such a way as to ensure savings of primary energy used in: (i) a co-generation unit in the amount not lower than 10 per cent. as compared to generation of electric power and heat in separated systems with reference efficiency for separated generation; or (ii) co-generation unit with an installed capacity under 1 MW as compared to generation of electric powers with reference efficiency for separated of electric power and heat in separated systems with reference efficience.
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.
JI	Joint Implementation: one of the flexibility mechanisms introduced under Article 6 of the Kyoto Protocol.
Kyoto Protocol	the Kyoto Protocol to the United Nations Framework Convention on Climate Change of December 11, 1997 (Dz.U. of 2005, No. 203, Item 1684), in force since February 16, 2005.
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; 1kV= 103 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 kWh = 3,600,000 J = 3.6 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 MW = 106 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
NAP II	<ul> <li>emission trading system by the National Administrator of the Emission Trading System.</li> <li>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).</li> </ul>
Nm <sup>3</sup>	normal cubic meter; a unit of volume from outside the SI system signifying the quantity of dry gas in 1 m3 of space at a pressure of 101.325 Pa and a temperature of 0°C.
NO <sub>x</sub>	nitrogen oxides.
Operational Capacity Reserve (ORM)	ORM constitutes of generation capacities of active Production Schedular 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	a special kind of hydroelectric power plants. In addition to river flow and the difference in the water table levels they need two bodies of water connected with a channel or a pipeline. The power station is situated next to the lower lake or at the dam of the upper lake. The pumped storage facilities provide ancillary control services for the national power system. Their functions are to secure stability, provide passive energy, store excessive power in the system and supply power to the system in peak time. The pumped storage plants that have a natural inflow of water to the upper lake also generate electricity from renewable sources. The main off-taker of electricity produced by the peak power pumped storage power stations and their services is TSO
Property rights	negotiable exchange-traded rights under green and co-generation certificates

## Management Board's report on activities of the Capital Group of PGE Polska Grupa Energetyczna S.A. for the 3-month and 9-month period ended September 30, 2017

PSCMI1	Polish Steam Coal Market Index
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 only to breakdowns in the medium (MV) and high voltage (HV).
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 only to breakdowns in the medium (MV) and high voltage (HV).
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.
TFS	Tradition Financial Services, an electricity trading platform used for concluding various transactions, purchase and sale of conventional energy, property rights, renewable energy and CO <sub>2</sub> emission allowances.
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 energy transmission.
TWh	terawatt hour, a multiple unit for measuring of electricity unit in the system SI. 1 TWh is 109 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 V= $1J/1C = (1 \text{ kg x m}^2) / (A \text{ x s3})$ .
W (watt)	a unit of power in the International Systems of Units (SI), $1 \text{ W} = 1 \text{ J}/1\text{ s} = 1 \text{ kg x m}^2 \text{ x s-3}$ .
Yellow certificate Yellow energy	a certificate confirming generation of energy in gas-fired power plants and CCGT power plants. popular name for energy generated in gas-fired power plants and CCGT power plants.