



***Report on non-financial data
of PGE Polska Grupa Energetyczna S.A.
and PGE Group for 2018***

ended December 31, 2018

TABLE OF CONTENTS

1.	Introduction.....	3
2.	Dialogue with stakeholders	3
3.	PGE Group	5
3.1	<i>PGE Group's business model</i>	<i>5</i>
3.2	<i>PGE S.A. business model.....</i>	<i>7</i>
4.	Managing corporate social responsibility and sustainable development at PGE Group and PGE S.A.	10
4.1	<i>Involvement in CSR initiatives</i>	<i>11</i>
4.2	<i>Cooperation with industry organisations.....</i>	<i>11</i>
5.	Risk management at PGE Group and PGE S.A.	13
6.	Environment	14
6.1	<i>Policies concerning the natural environment.....</i>	<i>14</i>
6.2	<i>Investments in environmental protection.....</i>	<i>15</i>
6.3	<i>Cogeneration</i>	<i>18</i>
6.4	<i>Innovations at PGE</i>	<i>19</i>
6.5	<i>Biodiversity</i>	<i>21</i>
6.6	<i>Identified risks and management measures in the environmental area at PGE Group and PGE S.A.....</i>	<i>23</i>
6.7	<i>Selected indicators in the environmental area at PGE Group</i>	<i>25</i>
6.8	<i>Selected indicators in the environmental area at PGE S.A.</i>	<i>29</i>
7.	Society	31
7.1	<i>Policies concerning social issues.....</i>	<i>31</i>
7.2	<i>Good neighbourhood</i>	<i>31</i>
7.3	<i>Social sensitivity</i>	<i>34</i>
7.4	<i>Active education.....</i>	<i>36</i>
7.5	<i>Sports and culture sponsoring.....</i>	<i>38</i>
7.6	<i>Identified risks and management measures in the social area at PGE Group and PGE S.A.</i>	<i>39</i>
8.	Clients.....	41
8.1	<i>Our policies and approach to managing client relations</i>	<i>41</i>
8.2	<i>Communication with clients.....</i>	<i>45</i>
9.	Employees	46
9.1	<i>Our policies and approach to management in the area of labour matters at PGE Group and PGE S.A.</i>	<i>47</i>
9.2	<i>Workplace health and safety</i>	<i>52</i>
9.3	<i>Social dialogue and freedom of association.....</i>	<i>53</i>
9.4	<i>Managing the generational gap</i>	<i>54</i>
9.5	<i>Identified risks and management measures in the labour area at PGE Group and PGE S.A.....</i>	<i>56</i>
9.6	<i>Selected indicators in the labour area at PGE Group and PGE S.A.</i>	<i>58</i>
10.	Human rights	62
10.1	<i>Compliance.....</i>	<i>63</i>
10.2	<i>Training and education</i>	<i>64</i>
10.3	<i>Identified risks and management measures in the human rights area at PGE Group and PGE S.A.....</i>	<i>65</i>
11.	Combating corruption.....	66
11.1	<i>Identified risks and management measures in the anti-corruption area at PGE Group and PGE S.A.</i>	<i>68</i>
12.	Report approval.....	70
13.	Industry glossary.....	71
14.	Research and development projects in environmental protection at PGE GiEK and PGE EC.....	73
15.	Useful links	76
16.	List of GRI Standards and Global Compact indicators.....	77

1. Introduction

We present to you our report on non-financial data, prepared in compliance with the requirements specified in the Accounting Act, committing us to disclose non-financial information. Our report covers non-financial data for the period from January 1 to December 31, 2018. The report contains consolidated data for [PGE Group](#) ("Group," "PGE Group") and its parent company - PGE Polska Grupa Energetyczna S.A. ("PGE S.A."). You will find a diagram depicting PGE S.A.'s direct and indirect equity exposures is presented on page 6.

In order to present PGE Group's business in the best and most transparent manner, we focused on selecting the most essential subjects both from the viewpoint of the company and its surroundings. Based on conclusions from the stakeholder panel and internal analysis, which was performed by a working team in cooperation with the management, we developed a materiality matrix for the presented topics.

2. Dialogue with stakeholders

PGE Group maintains lasting relations with our surroundings, based on trust, openness and dialogue. This is why in 2014 we initiated a series of dialogue sessions - Stakeholder Panels. These meetings lead to clarify stakeholder expectations towards PGE Group and formulate opinions on the key issues that the Group should address in its annual reports.

The most recent Stakeholder Panel was held on October 26, 2017 at PGE S.A.'s headquarters in accordance with AA1000 SES (Stakeholder Engagement Standard). Its validity and transparency was overseen by an NGO - the Forum for Responsible Business.

Representatives of PGE Group's key stakeholder groups were invited, from the following areas:

- government administration
- media
- industry organisations
- NGO organisations
- business partners / suppliers
- academia
- shareholders / investors
- competition
- clients
- local communities
- regulators
- employees

Discussions were held in four thematic groups related to the overall procedure for managing activities in the CCI area at PGE Group, related to business strategy:

- society / local communities
- workplace
- environment
- market

Representatives of PGE Group's stakeholders selected the priority topics that they saw as crucial for the company as well as subjects that should be included in PGE Group's integrated report for 2017.

Work on selecting the key topics for stakeholders was conducted in three stages: individual stage, group work at tables and work in the forum.

During the stage summarising the effects of group work, the following topics were selected:

Area of PGE's social involvement	Key topics indicated by stakeholders
SOCIETY	<ul style="list-style-type: none"> ■ Educational activities as regards the operation of the electricity market, energy efficiency and the safe use of energy and its infrastructure (including educating children and youth) ■ Supporting local communities, actively implementing a good neighbour policy; activities at the level of each company.
ENVIRONMENT	<ul style="list-style-type: none"> ■ Investing in environmental protection projects, financing research projects focusing on reducing adverse environmental impact, investing in increasing the share of renewable energy ■ Reducing impact on environment ■ Emissions (types and quantities of substances emitted - measurements, targets)
WORKPLACE	<ul style="list-style-type: none"> ■ Doing business in an ethical manner, managing ethics in the organisation (including combating corruption) ■ Promoting workplace health and safety rules ■ Managing the generational gap
MARKET	<ul style="list-style-type: none"> ■ Investments for the development of renewable energy sources ■ Ensuring energy security - effective access to electricity and heating.

The key issues selected by PGE Group's stakeholders will be discussed in [PGE Group's integrated report for 2017](#).

In 2018, PGE Group continued to work on addressing the top-priority issues identified by stakeholders during the most recent dialogue session, as shown in this document.

The statement takes into account selected indicators from the Global Reporting Initiative (GRI) standards and PGE Group's own indicators. The list of GRI indicators is also based on information contained in the Management Board report on the activities of PGE Polska Grupa Energetyczna S.A. and PGE Group for 2018.

3. PGE Group

PGE Group ("PGE Group," "Group") is the largest vertically integrated producer of electricity and district heating in Poland. Thanks to a combination of our own commodity resources, generation of electricity and distribution network, PGE Group ensures secure and reliable electricity supplies to more than 5 million households, businesses and institutions.

3.1 PGE Group's business model

PGE Group operates in five segments:

CONVENTIONAL GENERATION

Scope of activities: lignite mining, generation of electricity and heating from conventional sources and transmission and distribution of heat.

RENEWABLES

Scope of activities: generation of electricity from renewable sources and in pumped storage plants.

SUPPLY

Scope of activities: trade of electricity throughout the country, wholesale trade of electricity on the domestic and foreign markets, trade of CO₂ emission allowances, property rights and fuels, along with provision of corporate centre services to PGE Group companies.

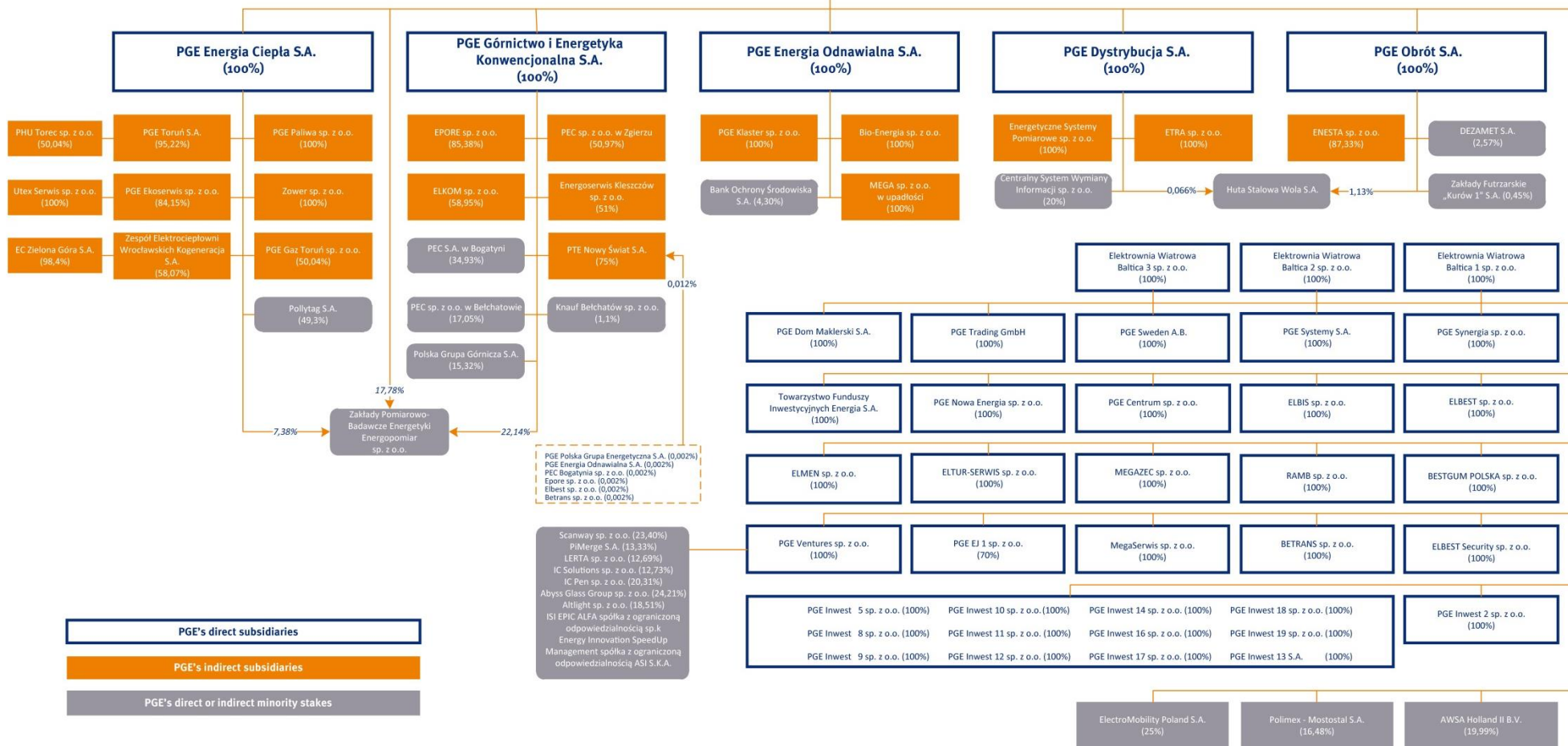
DISTRIBUTION

Scope of activities: provision of electricity supply services to end customers over high-, medium- and low-voltage power lines and equipment.

OTHER ACTIVITY

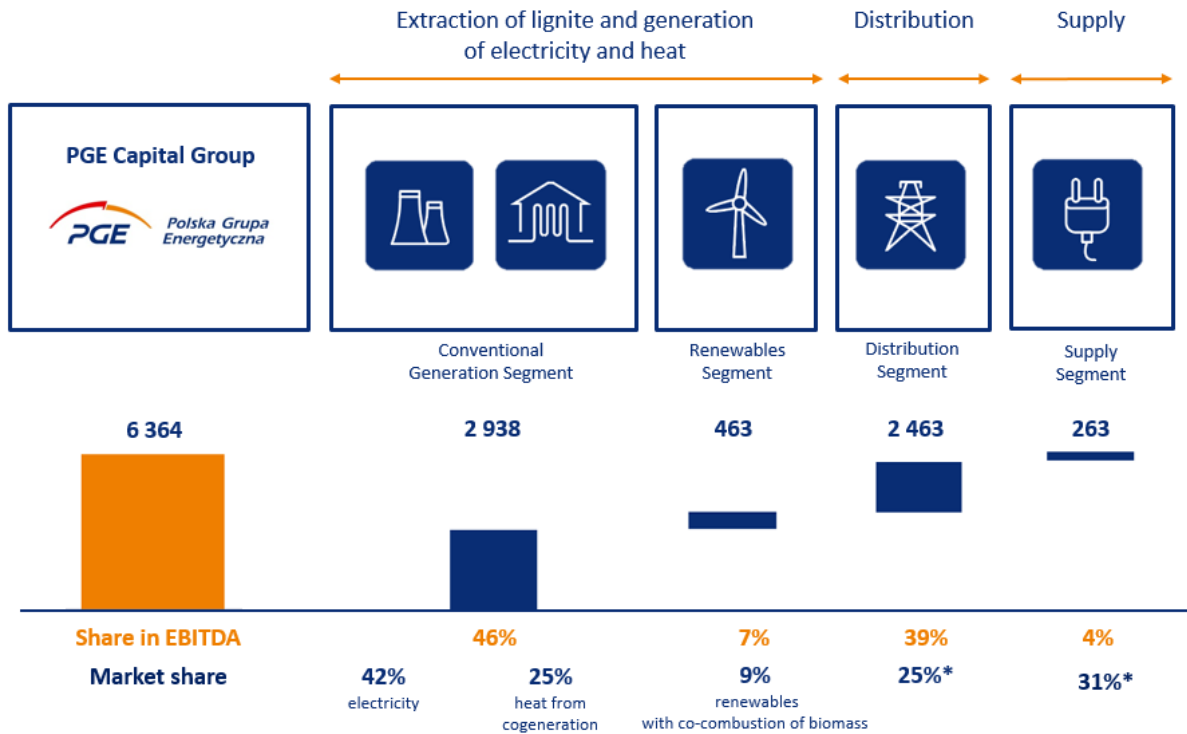
Scope: provision of services, through subsidiaries, to PGE Group, which includes organisation of capital raising in the form of eurobonds, provision of IT, telecommunications, payroll and HR and transport services. The scope of activities also covers subsidiaries formed to prepare and implement a project to build a nuclear power plant, management of investment funds and investments in start-ups.

Diagram: PGE S.A.'s direct and indirect equity exposures as at December 31, 2018



PGE GROUP'S BUSINESS MODEL

PGE Group is Poland's largest vertically integrated producer and supplier of electricity and the largest producer of district heating. The Group operates throughout the entire value chain: from lignite mining at its own mines, through electricity and heating production, to distribution and sales.



* Estimated data concerning sales to end customers and distribution

PGE Group's generating assets account for approx. 43% of the electricity produced in Poland (including 42% by the Conventional Generation segment), using a variety of technologies. Conventional installations use lignite from their own mines as well as hard coal, gas and biomass from external suppliers. Renewable sources are also used to produce electricity: wind energy in wind farms, water energy in hydropower plants and solar energy (PV).

With over 290,000 km of distribution lines, PGE Group distributes electricity to customers in an area covering approx. 40% of Poland's territory.

With a combination of its own lignite resources, generation assets and distribution networks, PGE provides secure and reliable electricity supplies to more than 5 million customers throughout Poland, including households, businesses and institutions. This means that it supplies almost every third electricity consumer in Poland. PGE is also the leader in district heating production.

3.2 PGE S.A. business model

PGE Polska Grupa Energetyczna S.A. ("PGE S.A.," "PGE") is the parent company for PGE Group.

The company's core activities are as follows:

- wholesale trade in electricity and trade in related products and fuels,
- oversight of head offices and holding companies
- provision of financial services to PGE Group companies

TRADE IN ELECTRICITY AND OTHER ENERGY MARKET PRODUCTS

PGE S.A. sells electricity on the market and within PGE Group, mainly to PGE Obrót S.A. ("PGE Obrót"), which sells to most of the Group's business and household clients, and to PGE Dystrybucja in order to cover grid losses related to the distribution of electricity.

PGE S.A. purchases electricity under bilateral contracts with PGE Group companies: PGE Górnictwo i Energetyka Konwencjonalna S.A. ("PGE GiEK") and PGE Energia Odnawialna S.A. ("PGE Energia Odnawialna," "PGE EO") and on markets managed by Towarowa Gielda Energij, i.e. on the derivatives market and spot market.

Based on an Agreement concerning Commercial Management of Generation Capacities, PGE S.A. is responsible for securing generation capacity in the Conventional Energy segment and the Renewables segment. PGE S.A. is also responsible for purchasing CO₂ emission allowances for Conventional Generation segment companies and secures supplies of hard coal, natural gas and biomass for branches of the Conventional Generation segment.

Aside from wholesale electricity trade, PGE S.A. is active on the wholesale gas market, mainly in order to secure PGE Obrót's retail sales.

In 2018, PGE Group participated in capacity market processes. The Capacity Market Division was established within PGE S.A.'s Strategy Department, which coordinates preparations for and participation of PGE Group units in certifications and auctions.

The first main capacity market auctions for delivery years 2021, 2022 and 2023 were held in November and December 2018.

In the delivery year 2021 auction, PGE Group contracted 11 652 MW in capacity obligations for its units at 240.32 PLN/kW/year, including:

- 1 944 MW for new units (with a 15-year capacity contract),
- 2 698 MW for modernised units (2 419 MW with a 5-year capacity contract and 280 MW with a 7-year capacity contract),
- 7 009 MW for existing units (with a 1-year capacity contract).

In the delivery year 2022 auction, PGE Group units secured annual contracts for 7 397 MW in capacity obligations at 198 PLN/kW/year. In total, PGE Group's capacity obligations in 2022 amount to 12 040 MW, taking into account multiannual contracts from 2021.

In the auction for 2023, 6 850 MW in one-year capacity obligations was contracted at 202.99 PLN/kW/year (capacity obligations in 2023 will total 11 493 MW).

OVERSIGHT OF HEAD OFFICES AND HOLDING COMPANIES

PGE S.A. serves as the Group's parent entity and its tasks include development of growth strategy and strategic management, focusing on effective management of PGE Group's generation portfolio.

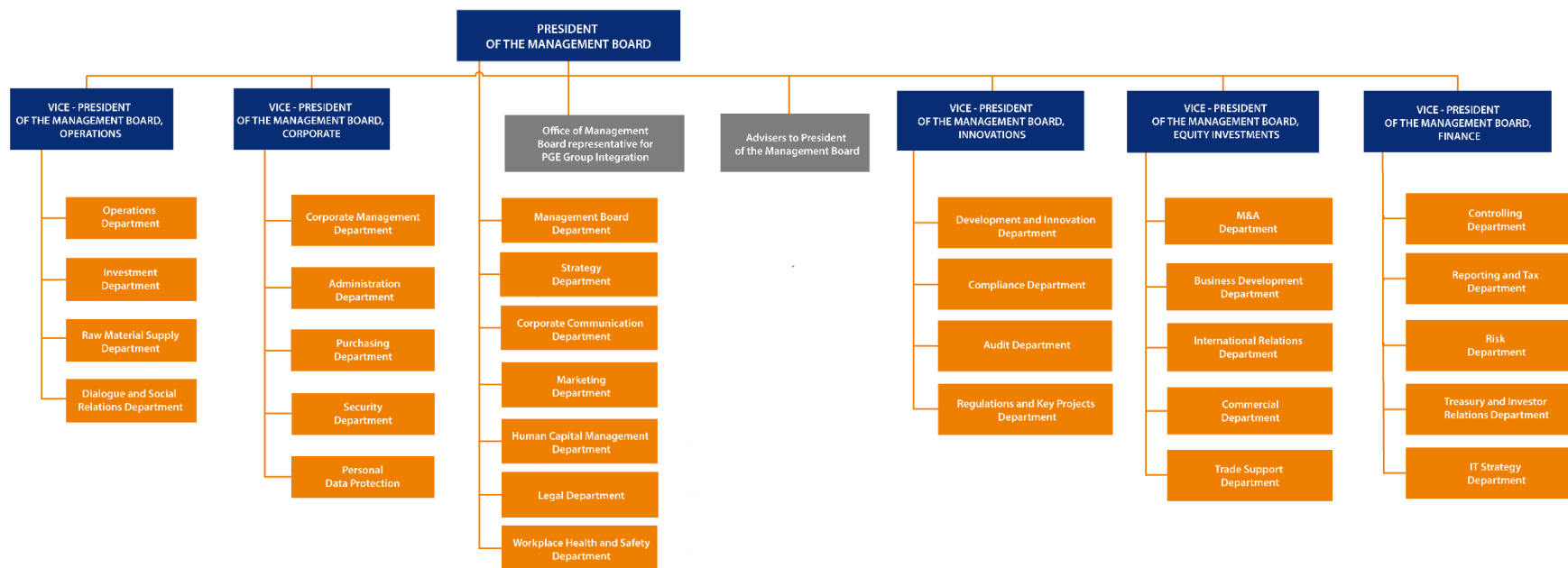
PROVISION OF FINANCIAL SERVICES TO PGE GROUP COMPANIES

PGE S.A. raises mid- and long-term financing for investments projects in each of PGE Group's business lines.

Within PGE Group's financing model, PGE S.A. re-allocates funds between Group subsidiaries. These funds are obtained through loans from PGE Sweden AB - PGE Group's issuer of eurobonds and a special purpose vehicle.

PGE S.A. also provides other services related to the performance of the above-mentioned tasks.

Diagram: PGE S.A.'s organisational structure at December 31, 2018



4. Managing corporate social responsibility and sustainable development at PGE Group and PGE S.A.

PGE Group responsibly approaches the tasks and expectations of the market, stakeholders and employees. The organisation is aware of its impact on surroundings and therefore in pursuing its mission it builds value for shareholders through sustainable business development. This is reflected in business decisions, which are made taking into account the natural environment, local communities and their needs, the national economy and customers.



We act for sustainable development throughout the entire value chain - from mining and generation to the final customers of electricity. We take care to ensure state energy security, we take care of our employees, and we take care of the quality of services and customer satisfaction, as well as the development of local communities and ensuring economic development in the areas in which we are active.

PGE Group's corporate social responsibility is thus not just a response to stakeholder expectations but rather an approach to operations. This is why responsible business is part of [the Group's business strategy](#), updated in 2016, in which CSR is defined as one of the success factors.

PGE's years of efforts emphasising responsible operations have been appreciated by the market. PGE Group placed first in the fuels, energy and mining industry and third overall in the Responsible Company Ranking 2018. This result is backed by planned activities and a strategic approach to managing corporate social responsibility and sustainable development.

4.1 Involvement in CSR initiatives

PGE Group participates in numerous domestic and global initiatives. Since 2008, we have been part of an initiative of the Secretary-General of the United Nations called "Global Compact." Participation in Global Compact is one of the manifestations of our support for respecting human rights.

The RESPECT Index, launched in November 2009, is a stock market index of companies that have high environmental and social standards and excel at corporate and information governance. On 12 December 2018, the Warsaw Stock Exchange announced the composition of the 12th edition of the index. PGE S.A. has been a constituent of the [RESPECT Index](#) since 2011, and Zespół Elektrociepłowni Wrocławskich KOGENERACJA S.A. since 2009. Both of the companies remain in the index continuously. Since first published in 2009, RESPECT Index has grown in value by 70%.

Since 2015 PGE Group is the Strategic Partner of Responsible Business Forum. It is one of 99 Polish companies that have so far signed the "Commitment by Polish business to sustainable development." This is an expression of engagement in sustainable development and PGE's drive towards achieving objectives set out in the Sustainable Development Vision for Polish Business 2050.

In 2016, PGE Group participated in work on developing a minimum standard for companies in the area of ethics as part of the Working Group at the Coalition of Ethics Spokespersons at Global Compact Poland Network. A year later, in 2017, we actively joined work on select UN Sustainable Development Goals.

We take action in all of the 17 SDGs, having set seven key goals that are a priority to us. These are:

- Goal 4. Quality education
- Goal 7. Affordable and clean energy
- Goal 9. Industry, innovation and infrastructure
- Goal 11. Sustainable cities and communities
- Goal 12. Responsible consumption and production
- Goal 13. Climate action
- Goal 17. Partnerships for the goals

4.2 Cooperation with industry organisations

As PGE Group, we take part in the work of numerous domestic and international organisations and associations. Rules for joining international organisations and industry associations are contained in PGE Group's Procedure for Activities in the International Area, which regulates:

- initiating and coordinating international activities with international industry organisations,
- cooperation between Business Lines and PGE Group companies that are direct subsidiaries of PGE S.A. with international organisations and institutions.

According to this procedure, approval from PGE S.A., in the form of a positive opinion, is necessary for Companies Managing Business Lines and direct PGE S.A. subsidiaries to participate in international organisations. Joining a specific organisation, leaving it or working with it is subject to coordination and monitoring.

In December 2018, PGE Group implemented "Good practices in working with domestic and international industry organisations", a document that contains detailed guidelines for PGE Group companies on working with domestic and international industry organisations.

In 2018, PGE Group companies continued their work at domestic and international industry organisations and associations. Participating in expert groups at these organisations allows us to represent the Group's interests domestically and internationally and influence decisions concerning the power sector. This is also an element of promoting the entire Group and a way to increase its value. Participation in domestic and international industry organisations makes it possible to actively shape the Group's business environment and constitutes an important element of its image-enhancing efforts.

As a member of the Polish Electricity Association, PGE S.A. is also a member of the Union of the Electricity Industry - EURELECTRIC. This association represents the interests of European energy companies that generate, distribute and supply electricity. This is the most powerful sector organisation participating in dialogue with European institutions.

PGE S.A. is also a member of Central Europe Energy Partners (CEEP), an international organisation with an interest in energy products such as coal, gas and crude oil as well as renewable fuels and nuclear power. CEEP plays a significant role in influencing

EU regulations and shaping the regulatory framework in accordance with the interests of the energy sectors of countries in Central and Eastern Europe.

PGE also belongs to the following domestic industry organisations:

- Chamber of Commerce of Energy and Environmental Protection
- Energy Trading Association
- Polish Committee of the World Energy Council
- Association of Polish Electrical Engineers
- Polish Association of Listed Companies
- Employers of Poland

PGE Group companies are also members of the following international organisations and associations:

- EDSO for Smart Grids,
- World Nuclear Association,
- FORATOM,
- European Association for Storage of Energy (EASE),
- WindEurope.

Moreover, PGE Group companies also belong to the following domestic organisations and associations:

- Chamber of Commerce of Energy and Environmental Protection
- Economic Society Polish Power Plants
- Polish Nuclear Society
- Polish Power Transmission and Distribution Association
- Energy Distribution Employers Union
- Energy Trading Association
- The Union of Employers: Association of Lignite Miners - through this organisation PGE Group is also represented at the international organisation Euracoal,
- Polish District Heating Chamber of Commerce,
- Hydropower Plant Society
- Polish Association of. Commercial Heat and Power Plant
- Employers of Poland
- Association of Polish Electrical Engineers
- Polish Wind Energy Association
- Renewable Energy Association

5. Risk management at PGE Group and PGE S.A.

As part of PGE Group's existing corporate risk management infrastructure, each identified risk has an assigned risk owner, who at the given company has an impact on the level of risk by undertaking activities intended to protect against such risk or reduce the effects of such risk as part of response to risk and established risk levels.

In accordance with the General Procedure for Corporate Risk Management, one of the responsibilities of risk owners at PGE Group is to submit alerts on risk occurrence to the corporate centre using dedicated reports. Information on events taking place at companies are also subject to separate analysis and report addressed to the Risk Committee, with the intention to ensure oversight of the effectiveness of the risk management process at PGE Group. Moreover, Key Risk Indicators (KRIs) are specified for selected risks, with the intention to monitor on an on-going basis risk and data that might have an impact on assessment of risk frequency and effects and the need to develop risk reduction plans.

Aside from the aforementioned procedures, separate regulations are dedicated to trading risks for their management, monitoring and reduction. These are: General Procedure for Managing Market Risk in Trading Activities, Credit Risk Management Policy and General Procedure for Internal Ratings.

In 2018, a consistent approach to managing risks was developed for nine key PGE Group companies: PGE S.A., PGE GiEK, PGE Dystrybucja, PGE Obrót, PGE EO, PGE EJ 1, PGE Systemy, PGE Synergia, PGE Dom Maklerski.

PGE S.A., as the Corporate Centre managing the Group, shapes and implements integrated risk management architecture solutions at PGE Group. It especially shapes PGE Group's risk management policies, standards and practices, develops and expands internal IT tools that support this process, sets global risk appetite and adequate limits and monitors their levels.

Other PGE Group companies are supervised at business line level or by other PGE Group units that are tasked with corporate management. The risk management system in place at business lines takes into account the activities of the other PGE Group companies.

6. Environment

As an organisation that is continuously conscious of its impact on surroundings, we continually strive to prevent or reduce any adverse impact of our activities on the natural environment. In making decisions with regard to modernisations and new investments, environmental effect is always an important criterion for us.

Business strategy objectives	CSR directions and rules Code of Ethics	Operations
<p>Supporting the country's energy security</p> <p>Ability to implement new products and technologies</p> <p>Pro-active response to trends</p>	<p>Security of supply</p> <p>We manage our impact on the surroundings</p> <p>At PGE Group, we care about sustainable and safe development</p>	<p>We limit our impact on the environment through:</p> <ul style="list-style-type: none"> ▪ Implementing modernisation investments intended to reduce gas and particulate matter emissions ▪ Working on limiting our environmental footprint <p>We use various sources of energy by searching for new solutions.</p> <p>We search for innovations inside and outside the organisation by creating conditions for the development of innovative ideas and implementing them</p>

6.1 Policies concerning the natural environment

Striving to improve the quality of the natural environment, we initiate, support and participate in initiatives intended to retain biodiversity and improve the state of the environment, the quality of which we monitor.

PGE Group's Environmental Protection Policy is a document that defines our attitude towards protecting the environment. It is in effect at the Group's key companies: PGE S.A., PGE GiEK, PGE Energia Ciepła, PGE Dystrybucja, PGE EJ 1 and PGE Energia Odnawialna, and its objectives are as follows:

- defining general rules, authorisations and responsibilities in PGE Group's environmental protection area,
- defining PGE Group's processes and activities having key meaning for environmental protection,
- assigning the key roles in the process of managing environmental protection to appropriate levels in PGE Group's management organisational structure,
- identifying environmental processes within business lines, taking into account their specific nature,
- continuously increasing PGE Group employees' awareness of environmental protection.

All employees are committed to rationally using natural resources. Managing environmental impact is also addressed in PGE Group's Code of Ethics. The rule "We care for the natural environment" describes the company's attitude towards standards for emissions into the air, water and ground. In line with this rule, we undertake the following activities:

- We regularly monitor and reduce the negative impact of our operations on the environment. We continuously strive to reduce environmental footprint both in the area of technologies applied in operations and during our every-day responsibilities.
- We effectively use natural resources. We reduce our environmental footprint and promote the sustainable use of essential natural resources. We set environmental objectives for our supply chain. Our initiatives cover activities aimed at the sustainable

development of electricity generation and transmission technologies, afforestation, reducing water and energy consumption and recycling. Every year, we publish information on our progress in this domain.

- We are championing innovations. We support innovative solutions that contribute to reducing the environmental impact of our products and services.

Moreover, in 2016 a [Declaration by the Management Board of PGE S.A. regarding environmental protection](#) was adopted, in which this company's leadership committed to continuous improvement of efforts aimed at protecting and improving the state of the environment and at preventing pollution - implementing high, economically justified technological standards.

ENVIRONMENTAL MANAGEMENT SYSTEM

Aside from the environmental protection policy, all branches of PGE GiEK and PGE EC have an Integrated Management System. This covers an Environmental Management System, established and implemented in accordance with the standard PN-EN ISO 14001. The main task of the Environmental Management System is to support environmental protection and prevention of pollution in a way that takes into account social and economic considerations, in line with the sustainable development concept.

In 2018, an interdisciplinary project team was formed out of the employees of PGE S.A., PGE GiEK, PGE EO and PGE Dystrybucja, with the aim to build an Environmental Management System at PGE S.A. based on the standard PN-EN ISO 14001. The system will take into account the ownership role of PGE S.A. in respect of the Group's companies, requirements for suppliers, and it will strengthen the role of the organisational unit tasked with supervising the environmental protection area. Works are expected to finish by the end of the third quarter of 2019.

EMAS

In 2005, the Opole power plant, as the first such facility in Poland, implemented an EMAS system and was entered in the national register under number PL.2.16-001-01. EMAS (EcoManagement and Audit Scheme) is an EU environmental certification system that operates pursuant to Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS). Registration in the EMAS system means full transparency in the environmental impact area, which facilitates conducting open dialogue with interested parties. One of the EMAS requirements is to publish an Environmental Statement - a document that transparently and credibly presents our organisation's impact on the environment. Each year, the document is verified by an accredited entity (DNV GL) and subsequently published.

In December 2018, during the COP24 conference in Katowice, the Wyrbrzeże branch of PGE Energia S.A. received an anniversary EMAS certificate from the Minister of the Environment, Henryk Kowalczyk, and Director General for Environmental Protection, Andrzej Szweda-Lewandowski. This accolade was given to just ten organisations, which have been registered in the EMAS system in Poland the longest.

6.2 Investments in environmental protection

We carry out investments based on the best solutions available on the market in order to ensure the security of energy supplies. Prior to the start of each investment, we survey the scale of its impact on surroundings and we try to minimise its impact on the natural environment. To this end, we conduct dialogue with local communities, municipal authorities and NGOs, we consult our plans and investments. We educate about our impact on the environment, measures taken to reduce this impact and on development opportunities for the region and new jobs.

PGE GiEK and PGE EC spent a total of PLN 12.3 million in 2018 on research and development in the environmental protection area. A selection of these projects is available on page 73.

RESEARCH AND DEVELOPMENT

Generating electricity from conventional sources gives rise to particulate matter emissions and the emission of such compounds as SO₂, NO_x and CO₂.

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The Bełchatów plant constantly analyses its impact on the environment and implements wide-ranging activities aimed at environmental protection, also initiating numerous research and development initiatives. Reductions in emissions of the aforementioned substances into the air resulted from these intensive works. Since the 1990s, the Bełchatów plant has reduced SO₂ emissions by 88%, NO_x by 45% and particulate matter by 97%. This effect was possible only by implementing innovative technologies.

In the case of mercury emissions, PGE GiEK S.A. has for several years been preparing and researching various methods for flue gas demercuration in order to select the most effective and eco-friendly ways to reduce this substance. To this end, in 2011 the "Mercury programme at PGE Górnictwo i Energetyka Konwencjonalna S.A." was developed, adopted and implemented, with the aim to identify risks and threats related to mercury emissions, prepare recommendations for the use of various methods for reducing mercury from the company's generation assets, testing these methods and evaluating their performance.

Mercury emission calculations for 2013-2015 were based on indicators developed by one of the Polish technology universities. These values were estimated mainly on the basis of assumptions resulting from guidelines from the General Inspector for Environmental Protection and guidelines developed for PGE GiEK's purposes. Prior to 2016, legal regulations did not require emission measurements. Since 2016, mercury measurements are taken in compliance with the Regulation of the Minister of the Environment of November 7, 2014, as amended, concerning requirements for emission measurements and water collection measurements.

Mercury measurements at the Bełchatów plant are performed by an accredited firm - Zakłady Pomiarowo-Badawcze Energetyki "Energopomiar" - once a year for each flue pipe, and an average is taken of two results (from each hour), based on which the value of annual emissions is calculated. The methodology for calculating annual values is thus based on a two-hour measurement, meaning that due to different mercury content in coal samples these results do not reflect actual annual emission values. However, the annual average emission value for 2016, which was based on a one-off measurement, gave PGE GiEK an approximate depiction of how significant a challenge the Polish energy industry is facing in the context of adapting to the more restrictive environmental requirements resulting from BAT Conclusions.

Measurement practices show that it is difficult to obtain stable mercury emissions in measurement sessions involving the combustion of lignite, and the presented average hourly results during eight hours or 24 hours might significantly differ depending on the measurement dates. This is why the results are averaged. A precise result will only be obtained through continuous measurement, for which the power plant is preparing. The first continuous measurement at the Bełchatów plant is expected to begin in 2020, i.e. a year before BAT conclusions enter into force, which introduce mandatory continuous monitoring of mercury from August 21, 2021. All of this is intended to really face the challenge of reducing mercury emissions and adapting installations to future environmental requirements.

The quantity of mercury emissions, in tonnes, at the Bełchatów plant results directly from the size of the generating unit and the quantity of electricity produced. According to PGE GiEK's knowledge, no lignite-based power plant in Europe currently applies secondary techniques for mercury reduction. This is only appearing as the BAT Conclusions enter into force. Mercury removal rates are similar at all units - approx. 44%. This is why the amount of mercury emitted depends on its levels in fuel, boiler capacity and boiler operation time.

Emission volumes should be presented on an indicator basis (e.g. per MWh), making it possible to compare various combustion-based energy facilities. At the Bełchatów plant, mercury emissions per MWh were 0.000086 kg/MWh in 2016 and 0.000063 kg/MWh in 2018.

MODERN UNITS

Modern units are also being built at Opole and Turów. As of the end of 2018, the two units in Opole, with total output of 1800 MW, were approx. 95% complete, while the unit in Turów was 90% done. Units 1-3 at PGE's Turów plant are being comprehensively modernised in order to adapt them to BAT conclusions, increase the units' electric capacity by 15 MWe, average availability to 90% and efficiency to over 41%. Additionally, PGE S.A.'s Investment Committee has indicated gas as the most favourable fuel for the planned two new units at the Dolna Odra plant.

BAT conclusions, which will enter into force in 2021, include stricter emission parameters for SO₂, NO_x and particulate matter. They also introduce emission requirements for other substances and a new obligation concerning emission measurements as well as new standards for waste water, e.g. from flue gas treatment installations. This is why in order to ensure the further operation of units at PGE EC's CHP in Bydgoszcz it is necessary to implement an investment programme adapting

these generating assets to future stringent requirements. Implementing this investment programme adapting generating assets to future strict requirements will make it possible to reduce SO₂ emission by a factor of nine and NO_x emissions by a factor of four.

Thanks to an extensive flue gas desulphurisation system and a re-design of the flue gas denitrogenation system, the branch will meet strict environmental requirements, which will considerably reduce its generating units' impact on the environment.

THERMAL WASTE PROCESSING WITH ENERGY RECOVERY

The Group has also completed the project Thermal Waste Processing Installation with Energy Recovery at PGE's CHP in Rzeszów. The installation, which is already live, is capable of processing yearly up to 100,000 tonnes of mixed municipal waste and waste other than hazardous waste, as indicated in the decision on environmental conditions issued for the installation. The installation is intended to:

- supplement the existing municipal waste management system by recovering energy from waste,
- reduce the quantity of waste stored in landfills,
- reduce the production of heating in the winter and completely eliminate the production of heating in the summer at the existing coal-based boilers and reduce the impact of these boilers on the environment,
- diversify the fuels used at the CHP (municipal waste, natural gas, hard coal).

CIRCULAR ECONOMY

The concept of re-using combustion by-products has been around in the energy sector for over 20 years. Reducing emissions is causing an increase in the number of substances being caught by air protection installations and makes it possible to make use of combustion by-products. PGE Group places strong emphasis on the economic use of combustion by-products, implementing the concept of reducing environmental footprint in practice. Re-using combustion waste in various industry sectors brings considerable benefits for the environment:

- no need to use new land for the construction of waste landfills and associated infrastructure,
- reduces the use of natural resources (e.g. gypsum, aggregates) and thus contributes to a reduction in the area of land degraded by the mining of natural resources,
- leads to reduced burden of landfills on both people and the natural environment.

This project promotes the use of resources from secondary sources and thus material effectiveness. The rule 'secondary first' makes it possible to re-direct combustion by-products from landfills to the economy. It develops and provides alternatives to securing the economy's needs as regards natural resources in infrastructure building and the cement industry. In the last 10 years, the company sent to the market over 10 million tonnes of synthetic gypsum, thus limiting the use of natural resources.

Very good combustion waste re-use indicators are also being reached in the coal combustion ash and slag management area, especially hard coal. As valuable anthropogenic minerals, commodities and products, combustion by-products feature properties that are sought after by the market. They have no adverse impact on the environment or human life and health, as confirmed by research conducted for the purposes of substance registration in compliance with the REACH system.

PGE'S GREEN OFFICES

In 2017, PGE S.A. again went through a certifying audit and got a Green Offices certificate from the Environmental Partnership Foundation. The certificate is valid until the end of December 2019.

We have implemented the Green Office concept at the headquarters of four key PGE Group companies: PGE S.A., PGE EO, PGE Dystrybucja and PGE GiEK. In 2018, we began preparatory works to implement a similar eco-friendly certificate for offices - Green Office - issued by the Environmental Partnership Foundation. Green Office is planned to be implemented at PGE Obrót's central office in Rzeszów as well as in all of its branches in the country, i.e. Łódź, Warsaw, Zamość, Białystok, Lublin and Skarżysko.

The Green Office certification is a declaration on resource and material management at central office so as to minimise impact on the environment in the area of office activities. Waste sorting, monitoring the consumption of electricity, heating, water and paper, using energy-efficient lighting, promoting ecology amongst employees - these are just several practices

that characterise Green Offices. Simple actions bring considerable results for protecting the natural environment, e.g. giving up plastic straws, plastic food boxes, cups, etc.

6.3 Cogeneration

2018, like 2017, was marked by preparations for and implementation of PGE Group's investments in the district heating sector, especially district heating generation assets based on cogeneration technologies - combined generation of heating and electricity. The sector's development has a positive impact on air quality improvements and on the environment. Heating produced in cogeneration and introduced to district heating networks is one of the most effective ways of improving the quality of air in cities, especially in the autumn/winter season.

[PGE Group's District Heating Strategy](#) puts the clients and the environment at the centre. PGE Energia Ciepła is in charge of implementing the strategy. By 2030, in line with the District Heating strategy, PGE Energia Ciepła is expected to reach a 50% level of low-emission energy sources in its fuel mix. Just days after the District Heating Strategy was published, PGE Energia Ciepła signed an agreement with the authorities of Rybnik intended to reduce household emissions in the region. The planned investment involves a conversion of PGE's power plant in Rybnik in a way that makes it possible to generate heat in combination with generating electricity, i.e. cogeneration.

The District Heating Strategy also includes preparations to build a new CHP in Czechnica based on a cogeneration gas source, which will replace the existing coal-based CHP in 2023. Preparations for a project to build gas-based cogeneration sources at EC Zielona Góra, EC Gdynia, EC Bydgoszcz, EC Kielce and EC Zgierz are also in progress.

In March 2018, the Management Board of PGE EC adopted a strategy for adapting the assets of eight CHPs and the Rybnik plant to BAT conclusions by August 2021, which entails further reductions in sulphur dioxide, nitrogen oxides, particulate matter and HCL and HF mercury emissions. Ten technological projects were set up in July 2018. Preparations to select contractors for these projects are also in progress.

The following six CHPs are also preparing to adapt to BAT requirements: Bydgoszcz, Rzeszów, Gorzów Wielkopolski, Lublin Wrotków, Zgierz and Kielce. The adaptation programme being implemented at these installations includes especially the construction of new and modernisation of existing flue gas desulphurisation and denitrogenation systems as well as dust removal systems. Implementing this investment programme will ensure compliance with BAT conclusions when they go into force in 2021 or after the end of derogation for some of these assets. Moreover, in the case of retired sources, they will be replaced with new gas-based sources, while peak coal sources will be replaced with gas and oil boilers to increase the share of low-emission fuels.

PGE EC's programme for small local cogeneration sources is also in line with PGE Group's District Heating Strategy. Preparations for several projects were launched in 2018 as part of this programme. Arrangements are being made with district heating network owners and feasibility studies are in progress for new cogeneration sources.

Research programmes being run by PGE EC's Research and Development Department focusing on reducing environmental impact are also worth noting. The key programmes conducted in 2018 and continued in 2019 include:

- "Measurement and control of ammonia content in fly ash" - project completed in 2018,
- "Development of flexible coal-fired power plants with CO₂ capture in Calcium Looping technology" project
- "Removal of various forms of nitrogen from wastewater - advisory activities, pilot plant for the removal of nitrates at Gdansk CHP" project
- "Removal of heavy metals from wastewater at IMOS - development of technology based on Polymer Inclusion Membranes (PIM)" project
- "Removal of heavy metals from wastewater from IMOS - implementation of INNUPS technology in Gdynia" project
- "Optimisation of water consumption for energy purposes" project

A list of research and development projects focusing on environmental protection at PGE EC and PGE GiEK is presented on page 73.

ANTI-SMOG TARIFF

An anti-smog tariff is one of the solutions resulting from PGE Group's District Heating Strategy, introduced in December 2017. Under this tariff, a price discount of 50% of the base tariff price (G11) was introduced for increased energy consumption at night. With a combination of preferential energy pricing in the product with distribution fees, each kilowatt hour consumed additionally at night will be 65% cheaper than during the day. A special pricing model is applied in the tariff:

- zone one (6:00-22:00): equal to tariff G11 price.
- zone two (22:00-6:00): equal to half of the tariff G11 price.

The reduced rate is in effect for electricity volumes in excess of the volumes used at a given off-take point in the same period of the preceding year.

6.4 Innovations at PGE

Innovativeness is one of the pillars of PGE Group's business strategy. The Group will spend approx. PLN 400 million on research, development and innovations by 2020, half of which is its own funds and the other half will be financed externally. The Group intends to provide PLN 50 million in financing per year, to be used in developing new technologies, products and business lines.

PGE Ventures, a specialised corporate investment fund, is responsible for equity investments, while PGE Nowa Energia is in charge of incubation and acceleration of early-stage projects.

PGE Ventures carried out six equity investments in 2018, taking stakes in the most innovative technological startups of strategic significance to PGE Group. With funding from programmes run by the Polish Development Fund (PFR) and the National Centre for Research and Development (NCBiR), PGE Ventures formed two satellite funds in 2018, with total capitalisation of PLN 140 million. These external funds aim to invest in startups widely connected to PGE Group's value chain or featuring high innovativeness and growth potential.

Moreover, PGE Ventures is active in the wide academia community. Universities are both a source of interesting investment projects and grounds for building future business relations. PGE Ventures offers universities in Poland free workshops on venture capital and the widely-defined entrepreneurship. The aim of these activities is to steer students in Polish universities toward business, including by raising the awareness of young people as regards building their own businesses based on innovations and creative thinking about business. PGE Ventures held workshops in 2018 at the Warsaw University of Technology as part of the BEST Engineering Meeting conference and at the Warsaw School of Economics as part of the educational cycle "Build a good startup with PGE Ventures."

In 2018, PGE Ventures signed a letter of intent with the Collegium Mazovia Innovative University in Siedlce, which includes the company's active support for the second edition of the competition "II Youth Forum - Entrepreneurial Eastern Poland" addressed to secondary schools. The forum will be held in 2019 and its aim is to popularise knowledge about entrepreneurship and the concept of establishing and running your own business among young people.

PGE ACCELERATOR

PGE Nowa Energia in 2018 launched the AkceleratorPGE programme for collaboration with innovative technological projects and startups. AkceleratorPGE is a partner to innovation creators, actively seeking them out and building relations with them. This project aims to open PGE up to solutions from the outside by cooperating with startups in developing innovative products and services. A description of the needs of specific business lines as regards new technologies is available at www.akceleratorpge.pl, and startups submit their projects in response.

In 2018, AkceleratorPGE in cooperation with Agencja Rozwoju Przemysłu SA organised and held a competition for startups focused on customer services, billing and sales for PGE Obrót SA. Several ideas were selected, which will be successively implemented at PGE Obrót, first on a pilot basis and eventually at full scale.

Cooperation with business lines made it possible to obtain funding from the Polish Agency for Enterprise Development to conduct pilot runs for startups under the ScaleUp programme. The programme consists of implementing and testing innovative technological solutions, including for the energy industry, pitched by startups supported by large enterprises, including PGE Group companies. Ten startups that will be selected for PGE from submissions to the programme will receive a total

of over PLN 2 million in external funding for individual pilot projects, which will be implemented at PGE Energia Odnawialna, PGE GiEK, PGE EC and PGE Systemy.

The company also uses less conventional tools to search for innovations. In cooperation with ICM UW, AkceleratorPGE organised the "Switch to Smart" contest - the third hackathon in the Great Programming Challenge series. This competition was part of PGE's "Turn on the future" programme promoting solutions in the area of smart energy. The hackathon's objective was to develop prototypes for tools that will enable customers to manage electricity at home.

AkceleratorPGE is also seeking interesting technological ideas from foreign startups. To this end, it is participating in the international project SmartUp Accelerator. The project is addressed to several countries in the Baltic basin and financed by the EU. It offers know-how, acceleration tools and startups in the consumer cleantech area. Innovations from the smart home, smart mobility and smart citizen area are a highlight of the project.

AIR QUALITY IMPROVEMENTS

PGE Energia Ciepła has established cooperation with the local authorities in Gorzów Wielkopolski and Kielce to protect the environment, reduce the consumption of fuels and improve air quality for residents. This initiative consists of removing high-emission sources of heating and replacing them with individual heating hubs powered from the district heating networks, i.e. from a high-efficiency cogeneration source. 13 local boiler rooms will be removed, which will result in a reduction of fuel combustion and emissions, fewer failures and improved air quality in Gorzów Wielkopolski and the entire region. New district heating networks totalling 3.9km are being constructed. The project will also reduce the scale of low-efficiency heating generation and reduce small-scale emissions from household furnaces.

PGE EC Kielce in cooperation with the local government offers residents the option to connect to the central heating system for water. "Warm household water" is a project that eliminates the risk of carbon monoxide poisoning as a result of improper use of gas heaters at home. The Kielce CHP in cooperation with MPEC has developed a project to connect apartments to the central heating system for water. As part of the programme, PGE finances some of the expenses incurred by heating customers to install a warm water system in residential buildings. MPEC is adapting the district heating network and will equip the heating hub so that it can operate central warm water. The heating produced at EC Kielce will contribute to the security of Kielce residents, while maintaining the level of costs currently incurred by residents using gas furnaces to heat water.

Reducing small-scale emissions, supporting ecology and energy efficiency are the goals of sustainable development agreements that the Wyrzeże branch executed with the local governments in Gdańsk and Gdynia several years ago and with the Kosakowo municipality in 2018. The heating distributor is also a partner to the agreements in Gdynia and Kosakowo. Cooperation with local government helps in better understanding the needs of local communities and in coordinating and improving joint activities. PGE Energia Ciepła cooperates with the local governments in Kraków, Wrocław, Zielona Góra and Toruń.

PGE Toruń has been for several years supporting the development of green areas in Toruń (including the Philadelphia Boulevard, Rynek Nowomiejski, Dolina Marzeń and the ToMiTo square). This support is part of activities intended to reduce small-scale emissions by connecting buildings to the district heating network, funding programmes to remove coal-based furnaces in the Starówka and Bydgoskie Przedmieście districts and improve air quality in the city.

PGE Energia Ciepła becomes involved in local initiatives related to ecology and environmental protection. The Gdynia-based CHP plant together with the Gdynia Town Hall co-organises the competition "Beat the smog," which is part of the Clean Pomeranian Air project co-financed by the Voivodship Fund for Environmental Protection and Water Management in Gdańsk. The competition is intended to raise school children's interest in clean air and to shape ecological attitudes. In 2018, a photo competition for youth was organised in Gdynia: "Smog is scary. Show how you can beat it." The plant in Rybnik organises a campaign to clean up the river Rudy, which in 2018 was held for the ninth time. An ecological path was established at the CHP plant in Kraków, which allows visitors to meet the fauna and flora within the grounds and learn about activities addressing the protection of biodiversity.

ENERGY CLUSTERS

The formula of a cluster based on synergy between diffuse and conventional sources may be a response to the ambitious objectives for all energy clusters, such as self-sufficiency in terms of meeting the energy needs of the region, local energy security, reducing small-scale emissions and using local resources.

In September 2017, an agreement was signed on the formation of the South-Western Energy Cluster. Its signatories and founding partners were the local governments of: Zgorzelec powiat, Bogatynia municipality, Węgliniec municipality, Pieńsk municipality, Zawidów municipality, PGE Group companies: PGE Górnictwo i Energetyka Konwencjonalna (Turów plant and Turów lignite mine) and PGE Energia Odnawialna, as well as local businesses: Przedsiębiorstwo Usługowo-Produkcyjne ELTUR-SERWIS sp. z o.o., Przedsiębiorstwo Usługowo-Produkcyjne TOP SERWIS sp. z o.o., MegaSerwis sp. z o.o., EPORE sp. z o.o., Przedsiębiorstwo Transportowo-Sprzętowe „Betrans” sp. z o.o., ELBEST sp. z o.o., Polskie Pomidory S.A., Citronex I Sp. z o.o., Przedsiębiorstwo Energetyki Ciepłej S.A. and Wielospecjalistyczny Szpital – Samodzielny Publiczny Zespół Opieki Zdrowotnej w Zgorzelcu. Letters of intent concerning cooperation under the South-Western Energy Cluster were also signed by Tauron Dystrybucja SA, the Economic Society Polish Power Plants, the Technology Universities in Wrocław and Warsaw and the National Energy Conservation Agency.

The cluster's aim is to ensure the balancing and joint operation of renewable energy sources and the more easily controlled conventional sources, which is one of the key advantages of the South-Western Energy Cluster. PGE Energia Odnawialna is planning to build an energy warehouse intended to ensure the stability of energy supplies to end users. Electricity produced at the South-Western Energy Cluster will go to its partners.

At the end of February 2018, representatives of the Leski powiat, Solina municipality and Elbest signed an agreement with PGE Energia Odnawialna to form the Solina Energy Cluster. Its aim is to improve the air quality in the region, enhance local energy security and support development of this area. This is in line with the Group's activities intended to develop diffuse energy sources. PGE EO's objective is to develop PV farms, while the Podkarpackie voivodship has the best solar conditions, aside from the Lublin voivodship, to develop this type of installation.

ELECTROMOBILITY

Since December 2017, when PGE launched its first EV charging station, a team of experts from PGE Nowa Energia has been working on developing charging infrastructure in Poland and creating a market for electromobility services. PGE Nowa Energia is the largest partner for local governments when it comes to developing infrastructure, knows their requirements and has an investment process tailored to their specific nature. PGE's charging stations are currently located in Łódź, Warsaw, Rzeszów, Zakopane, Bełchatów, Nowy Sącz, Krynica Zdrój and Siedlce. In Siedlce, aside from launching five charging stations, a commercial carsharing service, i.e. short-term rental of EVs, was introduced. This controlled-scale project is helping to prepare a test of the solution, which in the future will provide PGE Group with a competitive position on the electromobility market. In 2018 this project received a new name: PGEmobility.pl

NATURALLY IT'S ENERGY

PGE Obrót introducing a renewables sales package for all existing and future business customers who have eco-friendly activities listed in their strategies. The "Naturally it's energy" offering gives clients a guarantee (in accordance with the Act on renewable energy sources of February 20, 2015) of the origin of electricity from renewable sources, especially wind. The document confirms to the final customer that the quantity of electricity specified in it and introduced to the distribution or transmission grid was produced from renewable energy sources. Clients receive a certificate from PGE Obrót S.A. showing that they are using the "Naturally it's energy" offering and confirming what percentage of the energy purchased in a given year comes from renewable sources. In addition, the URE President issued an energy origin guarantee, which is sent to the Origin Guarantee Register maintained at the Towarowa Giełda Energii power exchange by PGE Obrót for the final customer.

6.5 Biodiversity

We invest in numerous eco-friendly projects in order to minimise our footprint. Reclamations conducted thus far have given rise to vast forest and water complexes where many animal and plant species are present.

REHABILITATION

Following the end of operations, we return the given area's useful and habitat values so that they are as close to natural as possible. The Góra Kamięńsk mountain is an example of post-mining rehabilitation. It was formed with 1.354 billion m² of overburden taken out of the Bełchatów field (overburden consists of sand, gravel, silts and their mixtures as well as clay). The hill was first properly shaped, connected with the adjacent lands by constructing a system of roads and ramps and a surface

drainage system. The rehabilitation phase followed, consisting of replacing the soil and introducing flora, tree species and managing plantings. Currently the heap is managed by State Forests.

In 2018, as part of PGE Group's project "Forests full of energy," employees with families and in cooperation with State Forests Regional Directorates, schools and local communities planted 108,950 young trees in 14 voivodships. The "Forests full of energy" campaign celebrates Earth Day every year.

Aside from environmental benefits, development of post-industrial land brings the company image benefits around care for returning land that had been used for production purposes to forestry management. As part of rehabilitating post-mining areas at KWB Bełchatów and KWB Turów, we have planted approx. 46.5 million trees (until the end of 2018).

ECOLOGICAL TRANSFORMERS

PGE Dystrybucja has for many years been systematically adapting its HV/MV power stations to environmental requirements concerning protection of water and land against uncontrolled oil spills. To this end, it builds ecological power transformer pods for oil, equipment for separating the insulating oils together with drainage installations that drain purified rainwater and snowmelt to the environment or rain drainage system. The company also uses transformers that are filled with biodegradable insulating liquid that replaces crude-based oils. We are also acting to protect the ground against insulating oil pollution around transformers.

BIRD PROTECTION

PGE Energia Ciepła supports the "Sokół" association in its campaign to reintroduce the peregrine falcon in Poland. The first female peregrine falcon was observed at a chimney in Gdynia in 2006. The first nest was installed a year later. In February 2016, the Gdynia falcons received a completely new nest with cameras, which made it possible to observe the chimney's new residents - [peregrine falcons](#). Three falcons were born in Gdynia in 2018. New-borns were also observed at the Toruń CHP's chimney. In Poland, there are just 30 pairs. They are strictly protected. By supporting the reintroduction of these birds, PGE EC promotes and builds social support for biodiversity.

PGE Dystrybucja cares about the natural environment on a daily basis, taking numerous actions intended to protect birds. White storks are a special focus, with special platforms that raise nests above power lines being installed for many years. This metal structure provides safety for the storks and reduces powerline failures thus improving energy supply continuity. The structure serves well to separate birds from power lines and protects them against electrocution. So far, more than 24.2 thousand platforms have been installed in areas where the company operates, providing safe nesting for the storks during their stay in Poland. The electricians not only build new nests but continually repair existing ones when the birds are in warmer regions. In addition, on HV and MV lines special warning balls are installed for birds, along with structures and equipment preventing bird collisions with power lines. In 2018, the company installed protective covers on MV and LV pillars in places indicated by ornithologists from the Lublin Ornithology Society. Thanks to this, bird mortality in the selected area was reduced to zero.

PGE Dystrybucja's Warsaw branch together with Grupa EkoLogiczna is involved in ringing young white storks in the Siedlce powiat. Ringing the birds allows their journeys to be tracked, identify locations that are a threat to them and protect the most valuable feeding sites. The information collected is used by the company in works related to installing, repairing and sometimes relocating platforms for white storks. Research and observations make it possible to select locations for all equipment that deter large birds. 605 white storks were ringed in 2018.

FISH PROTECTION

In accordance with environmental protection requirements, PGE Energia Odnawialna builds hydro-technical fish ladders at its facilities. Another one was built in 2018, at the Krzywaniec barrage.

Fish ladders are structures placed on barrages, i.e. next to hydropower plants, weirs and dams. Their task is to make it possible for fish and invertebrates to safely and comfortably migrate.

PGE Energia Odnawialna uses biodegradable oils and greases at its site, with no impact on the natural environment.

SEPARATE COLLECTION OF SECONDARY RAW MATERIALS

PGE Group promotes eco-friendly attitudes among its employees. Most of the companies collect caps from PET-type bottles.

At PGE Dystrybucja's Łódź branch, batteries are collected in the spring every year. Employees collect batteries throughout the year using special boxes, ramping up their efforts on the first day of spring (March 21) until April 22, competing against other locations to win a prize from the branch's general director. 756kg of electrical waste was collected in 2018, with more than 2kg of batteries per employee at the winning location. Employees at the winning location receive an "ecological" prize - a tree or shrub to be planted and care for in front of the building, along with a sweet surprise, e.g. cake. PGE's clients also join this campaign. The campaign has been running for several years, with nearly 3 tonnes of batteries collected and utilised so far.

6.6 Identified risks and management measures in the environmental area at PGE Group and PGE S.A.

ENVIRONMENTAL MATTERS AT PGE GROUP	
Environmental protection risk	Concession risk
<i>resulting from the consequences of improper activities in the area of environmental protection and the risk of extraordinary events taking place</i>	<i>related to the possibility of failing to comply with concession terms</i>
Risk reduction tools	
<ul style="list-style-type: none"> Environmental protection training for employees Monitoring the technical state of equipment and installations Monitoring laws and regulations related to environmental protection Cooperation with company providing ecological emergency services Conducting, in accordance with plans and regularly, maintenance and repair work in compliance with manufacturer recommendations and regulations (standards, laws) 	<ul style="list-style-type: none"> Monitoring the Company's key operating areas in terms of compliance with concession requirements Monitoring deadlines and amounts of concession fees Monitoring legal regulations regarding concessions Active participation in drafting and assessing regulations Training for employees concerning the Energy Law and executive legislation as well as concession obligations

<p>Internal standards for managing water abstraction</p> <p>Environmental management system - control of emission volumes and technological process</p> <p>Monitoring the environment in the impact area of power equipment and installations</p> <p>Updating and modernising installations for waste treatment</p> <p>Up-to-date ISO 14001:2015 environmental management system certificate</p>	<p>Constant oversight of application preparation process at the Company</p>
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ENVIRONMENTAL MATTERS AT PGE S.A.

Environmental protection risk

resulting from the consequences of improper activities in the area of environmental protection and the risk of extraordinary events taking place

Risk reduction tools

- Environmental protection training for employees
- Monitoring the technical state of equipment and installations, and modernisations
- Monitoring laws and regulations related to environmental protection
- Adapting the company's internal regulations and activities in the area of environmental protection to the changing legal regulations
- Reporting to appropriate authorities and institutions responsible for managing the natural environment
- Use of protective means to reduce harm for the natural environment

6.7 Selected indicators in the environmental area at PGE Group

Our Common Environmental Policy commits all PGE Group companies to caring for the natural environment. Given the specific nature of the operations of our key companies, we present those indicators that are the most relevant to our impact on the environment.

Table: CO₂ at key PGE Group installations in 2018, compared to the allocation of CO₂ emission allowances for 2018 (in Mg).

	CO ₂ emissions in 2018*	CO ₂ emissions in 2017	Allocation of CO ₂ emission allowances for 2018**
Elektrownia Bełchatów	38 348 298	37 646 220	6 211 022
Elektrownia Turów	6 892 852	7 108 058	2 500 954
Elektrownia Opole	7 458 645	6 278 862	1 437 267
Zespół Elektrowni Dolna Odra	3 898 992	4 250 126	1 187 286
Zespół Elektrociepłowni Bydgoszcz	743 779	766 247	290 951
Elektrociepłownia Lublin Wrotków	453 102	507 729	166 164
Elektrociepłownia Gorzów	477 730	433 258	129 987
Elektrociepłownia Rzeszów	283 082	317 164	78 433
Elektrociepłownia Kielce	185 187	197 402	52 905
Elektrociepłownia Zgierz	174 579	192 520	22 210
TOTAL FOR PGE GIĘK	58 916 246	57 697 586	12 077 179
Elektrownia Rybnik	5 249 573	6 484 111	335 237
Elektrociepłownie Wybrzeże	1 907 109	1 905 110	583 064
Elektrociepłownia Kraków	1 721 648	1 775 841	497 470
Zespół Elektrociepłowni Wrocławskich Kogeneracja	1 591 047	1 535 621	477 859
Elektrociepłownia Zielona Góra	562 785	570 888	47 491
Elektrociepłownia Toruń	237 721	218 956	52 056
TOTAL Acquired assets	11 269 883	12 490 527***	1 993 177
including Assets acquired from November 14, 2017	-	1 755 106	-
TOTAL Conventional Generation segment	70 186 130	59 452 692****	14 070 356

*estimated data, unverified emissions - emissions will be accounted for and certificate by an authorised CO₂ emissions certifying expert based on annual reports concerning CO₂ emissions.

** the quantities of allocated CO₂ emission allowances will be confirmed through an ordinance of the Council of Ministers in Q1 2019

*** The units' volumes are on a pro-forma basis and are presented for illustration purposes in order to adequately show the scale of the acquired assets in comparison with PGE GiEK S.A.'s generating units (without the distortion related to proportional recognition in annual results).

New assets: Elektrownia Rybnik, EC Gdańsk, EC Gdynia, EC Kraków, EC Wrocław, EC Czechnica, EC Zawidawie, EC Zielona Góra, EC Toruń

****sum of CO₂ emissions concerns emissions for full year 2017 at PGE GiEK and the Acquired Assets from November 14, 2017.

The third settlement period in EU ETS, covering 2013-2020, began in 2013. During this period, rules regarding allocation of free CO₂ emission allowances for all EU ETS participants changed, especially for producers of electricity and heating. As a rule, starting from 2013, each subsequent year of the third settlement period means a linear decline in the quantity of free CO₂ emission allowances allocated to installations. It is estimated that PGE GiEK's installations will receive a total of 145 296 727 allowances for 2013-2020, including:

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

The volume of free allowances will constitute approx. 30% of PGE GiEK's needs, which are estimated at 480 million Mg of CO₂. CO₂ emissions for 2018 (unverified) will reach 58 916 246 Mg. The difference between allowances and actual CO₂ emissions (unverified) is a shortage of allowances of 46 839 067. This shortage will be balanced by purchasing allowances on the external market.

GRI

305-1

GRI

EU5

GC

GC-7

Table: Emissions of NO_x, SO_x and other significant compounds at PGE GiEK and PGE EC in 2018.

Weight of significant emissions into the air [tonnes]	PGE GiEK		PGE EC	
	2018	2017	2018	2017
NO _x	47 966	47 014	9453	14 667
SO ₂	63 130	55 631	7330	7 710
Particulate matter	2 492	2 145	509	628
Emissions per net energy generated for all generation capacities [kg/MWh]:				
NO _x	0.89	0.89	0.48	0.72
SO ₂	1.18	1.05	0.38	0.38
Particulate matter	0.05	0.04	0.03	0.03

Emission standards and conditions for compliance with them are specified in the Ordinance of the Minister of Environment of March 1, 2018, regarding emission standards for installations and integrated permits issued for installations. From January 1, 2016, PGE Group's conventional installations operate in compliance with IED Directive emission standards or use the derogation mechanisms specified therein. Derogation is intended to give existing installations additional time to technically adapt to the more rigorous emission requirements specified in the IED or exempt them from the requirement to observe these if modernising such a facility would be unjustified due to a limited expected life-cycle.

The significantly lower NO_x emissions at PGE EC in 2018, as compared to 2017, are mainly the result of SNCR investments completed in 2017 at the Rybnik plant, Kraków CHP and Gdańsk CHP, along with a reduced in energy output, which translated into lower SO₂ and particulate matter emissions.

Growth in particulate matter emissions at PGE GiEK resulted from a long-term decline in coal quality at the Bełchatów mine. Similar increases and declines of this indicator occurred in previous years.

Table: Total water abstraction for production purposes by source [m³] in 2018

	PGE GiEK		PGE EC		PGE EO	
	2018	2017	2018	2017	2018	2017
Total volume of water abstracted for	1 042 814 300.00	1 176 371 367.61	528 781 595.50	731 062 150.32	12 431 666 681.90	17 721 590 022.50
surface waters, including water from groundwater	1 040 611 060.00	1 174 331 817.81	524 456 463.31	726 729 661.00	12 431 621 230.90	17 721 580 761.50
rainwater directly collected and stored	1 713 527.00	1 365 176.50	2 901 559.60	2 892 267.00	37 415.00	3 381.00
wastewater from other organisations	-	-	-	-	-	-
supplies of city water and supplies from	3 824.00	13 495.00	-	-	-	-
	485 889.00	660 878.30	1 423 572.576	1 440 222.32	8 036.00	5 880.00

At PGE GiEK, the terms for conducting water and wastewater management are specified in relevant permits, including mainly integrated permits and water-law permits. Monitoring of the quantity and quality of water intake and wastewater discharge at the company's branches is conducted on an on-going basis. Surface waters are used for technological purposes, which are subject to treatment and purification processes. In order to limit the use of raw water, closed circuits are used, and the used technological water and sewage are directed to other processes.

Measurements of water abstraction at PGE EO are based on installed meters or the plant's actual operations. The calculation methodology at EW Porąbka - Żar changed in 2018, compared to 2017. The plant's overall operational time was used for calculations, rather than the annual period indicated in the permit. The quantity of groundwater collected in 2018 results from addition to the report of groundwater collected from a well drilled through the cooling system, which is discharged at EW Krapkowie into the Odra river (32,100 m³ in 2018), which had not been taken into account in 2017.

Table: Total volume of wastewater by quality and target destination [m³] in 2018:

	PGE GiEK		PGE EC		PGE EO		PGE Dystrybcja	
	2018	2017	2018	2017	2018	2017	2018	2017
Total actual quantity of wastewater	16 409 934.90	20 188 191.85	9 052 856.94	10.442.419.04*	283 790.48	224 798.18	1 352	1 034**
Quantity of wastewater broken down to waters								
Ground	16 226 412.40	19 681 160.98	4 925 721.13	7 349 567.79	279 028.48	220 607.18	1 352	1 034**
communal enterprises - to sewage	-	452.03	-	-	-	-	-	-
	183 522.50	506 578.84	598 577	2 153 594.25	4 762	4 191	-	-
Water from mine de-watering / treated mine water	211 854 878	214 919 799.50	not applicable	not applicable	not applicable	not applicable	not applicable	not applicable
Cooling water from open cooling water circuit, not requiring treatment	916 984 342.25	1 054 634 377.49	541 288 560.03	723 422 747.49	4 683	35 784	not applicable	not applicable

*The report on non-financial data for 2017 contained incorrect data for the actual quantity of sewage at PGE EC; it was: 23,951,739.04, and should have been: 10,442,419.04

**The report on non-financial data for 2017 contained incorrect data for the actual quantity of sewage at PGE Dystrybcja; it was: 2406, and should have been: 1034

Wastewater from PGE GiEK's power plants and CHPs are treated, also in a multi-stage process, and released to surface waters or transferred to municipal companies. Water from excavations is channelled to field reservoirs, where it is treated in a natural sedimentation process, assisted with plant filters. After treatment, water is of at least second class in purity.

PGE EO's power plants have water treatment plants and separates for wastewater purification. Samples are surveyed on an on-going basis. The decline in wastewater volumes in 2018 in the item 'cooling waters from open cooling cycle' results from groundwater taken from a drilled well not being included. This year, this is recognised in the item 'groundwater,' which is released following treatment to the Odra reader at EW Krapkowice (32,100 m³ in 2018). The growth in the quantity of wastewater is related to significant increase in wastewater discharge at the Dychów branch. This was caused by an increase in the quantity of drainage water. The main reservoir was filled throughout most of the year to a maximum level.

The smaller quantity of wastewater at PGE EC in 2018, compared to 2017, is related to lower energy production, and thus lower water abstraction, and lower quantity of wastewater from the wet flue gas desulphurisation system.

Increase in wastewater discharge at PGE Dystrybcja in 2018, compared to 2017, results from higher water consumption for employee accommodation purposes and a long and hot summer. In addition, until the end of 2017, rainwater released at PGE Dystrybcja facilities had been classified as wastewater. After the new Water Law entered into force (January 1, 2018), rainwater is no longer classified as wastewater. In accordance with the new Water Law, rainwater and snowmelt constitute water resulting from precipitation.

Table: Total weight of waste by type and method of utilisation in 2018 [t]

	PGE GiEK		PGE EC		PGE EO		PGE Dystrybucja	
	2018	2017	2018	2017	2018	2017	2018	2017
Quantity of hazardous waste by method of	1606.04	1 058.35	79.96	67.46*	11.88	101.62	2 141.19	2 350.05
Recovery (including energy recovery)	601.97	521.06	11.63	4.17	-	6.49	-	-
Recycling	157.61	188.70	58.87	45.93**	-	-	-	-
Mass burn	-	-	-	-	-	-	-	-
Disposal	183.10	215.93	9.18	9.95	4.22	5.02	-	-
Storage at landfills	176.55	27.28	-	0.57	-	-	-	-
Storage on plant site and warehousing	820.97	105.39	-	-	4.49	65.97	-	-
Other (e.g. transfer to authorised recipients)	-	-	0.28	6.84	15.15	24.13	2141.19	2350.05
Quantity of waste other than hazardous, by method of utilisation:	7 095 231.73	5 333 625.82	423673.86	571 048.38	78.67	193.39	3424.85	6 913.09
Recovery (including energy recovery)	2089246.11	1 994 904.72	143 774.90	271 535.89	-	-	-	-
Recycling	6314.08	9 322.60	261 792.03	282 192.32	-	0.28	-	-
Mass burn	-	7.40	-	-	-	-	-	-
Disposal	3 027.375	14 392.91	21.04	8.89	1.67	1.17	-	-
Storage at landfills	4 949 595.45	3 238 673.03	15 582.10	12 599.59	77	-	-	-
Storage on plant site and warehousing	53 362.80	76 325.17	65.52	69.48	-	73.76	-	-
Other (e.g. transfer to authorised recipients)	-	-	2 409.32	4 620.84	-	118.18	3 424.85	6 913.09

* The report on non-financial data for 2017 contained incorrect data for the quantity of hazardous waste by method of utilisation at PGE EC; it was: 685.24, and should have been: 67.46.

** The report on non-financial data for 2017 contained incorrect data for hazardous waste recycling at PGE EC; it was: 663.71, and should have been: 45.93.

PGE GiEK generates mostly waste other than hazardous waste. More than 7,095.23 thousand Mg of this waste (99.98%) was generated in 2018. Hazardous waste accounted for 0.02% of total waste (1.61 thousand Mg). The growth in the quantity of hazardous waste in comparison with 2017 results mainly from the launch in 2017 of the thermal waste processing installation with energy recovery at the CHP in Rzeszów. The waste generated in 2018 was subject to utilisation by storage in landfills (69.79%) and recovery processes (29.45%). A small quantity of waste (0.76%) was temporarily deposited in waste warehouses.

Non-hazardous waste constitutes mainly combustion waste.

A significant portion of the ash generating in hard coal and lignite firing as well as part of the synthetic gypsum are generated as a by-product and are not classified as waste. Combustion by products generated in energy and heating production processes are a raw material used in various branches of industry as valuable anthropogenic minerals, commodities and products. The feature sought-after parameters and do not have an adverse impact on the environment or human life and health. They also limit the use of natural resources.

PGE EO in 2018 reduced the quantity of waste in the item: Storage on plant site and warehousing, in comparison to 2017. This is due to the fact that waste from 2016 and 2017 was stored at EW Porąbka in 2017. Waste generated in 2018 was successively collected by specialised entities. The decline in waste generated at EO's facilities is related to a smaller number of maintenance works, repairs, etc.

Waste produced as a result of PGE Dystrybucja S.A.'s operations is transferred to authorised entities for utilisation. The quantity of waste generated depends on the scope of operational works being conducted on power grids and the investments in progress.

Table: Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations at companies with the largest footprint

PGE GiEK	2018	Additional information
Amount of monetary penalties imposed and paid in given year for violations of environmental protection laws and regulations	PLN 0	
Amount of cash penalties not yet imposed but estimated for non compliance with environmental protection laws and regulations	PLN 862,261.72	1) PLN 841,181.30 - estimated penalty for emission standard breaches: dust - PLN 729, SO _x - PLN 279,148.5, NO _x - PLN 561,303.8 (EC Bydgoszcz) 2) PLN 19,202.70 - estimated penalty for noise emission breaches (KWB Bełchatów): 3) PLN 1,877.72 - estimated penalty for exceeding average 48-hour concentration of dust emission from water boilers (EC Lublin) Decisions imposing administrative penalties have not yet been issued

In 2018, PGE GiEK did not receive administrative monetary penalties for violations of environmental protection laws and regulations. Administrative penalties for exceeding emission levels (noise emissions and emissions into the air) that occurred in 2018 will be issued in 2019. Once a decision imposing an administrative penalty is issued, the company takes action intended to decrease the penalty by the amount of own funds spent on activities that will remove the reason for the penalty. Activities intended to rectify reasons for administrative penalties are continuously being undertaken.

In 2018, no other PGE Group company received or does not expect to receive administrative monetary penalties for violations of environmental protection laws and regulations.

6.8 Selected indicators in the environmental area at PGE S.A.

The following indicators present our approach to managing our environmental footprint in terms of energy, water and paper consumption at PGE S.A. headquarters.

Table: Annual electricity consumption at PGE S.A.'s headquarters:

MWh	2018	2017
Energy for administrative purposes	1 864.27	1 701.20
Energy for administrative and technical purposes (server rooms)	1 083.51	1 191.58

Energy consumption for administrative purposes increased slightly y/y. This was caused by a long and hot summer in 2018 and intensive use of air-conditioning. Growth in average annual employment at PGE S.A. in 2018 (see data below) also contributed to higher demand for electricity. At the same time, demand for energy for administrative and technical purposes declined.

Table: Annual thermal energy consumption at PGE S.A.'s headquarters:

GJ	2018	2017
Annual thermal energy consumption (in GJ)	6 940.10	7 413.60
Annual thermal energy consumption (in GJ/m ³ *)	0.06	0.07

*Volume of PGE S.A.'s building at ul. Mysia 2, Warsaw: 111 599 m³

Annual consumption of thermal energy declined slightly y/y. The 2018 heating season began later than in 2017.

Table: Annual paper consumption at PGE S.A.'s headquarters:

	2018	2017
Paper for office printing (counted in A4 format and size)	1 019 889	1 100 964
Use of paper for office printing (A4 format/person)	1 800*	2 126**

*Average annual employment at PGE S.A. in 2018 (in persons): 566.70

**Average annual employment at PGE S.A. in 2017 (in persons): 517.85

Consumption of paper per one employee at PGE S.A. decreased by 326 A4 sheets y/y. The total number of sheets used for office printing declined by 7.36% y/y.

Table: Annual water consumption and wastewater discharge at PGE S.A.'s headquarters:

	2018	2017
Annual water consumption and wastewater discharge (m ³)	7 301	6 284
Annual water consumption and wastewater discharge (m ³ /person)	12.88*	12.14**

Table: Annual toner consumption at PGE S.A.'s headquarters:

	2018	2017
Annual toner consumption (in pcs)	135	173
Annual toner consumption (in pcs/person)	0.24*	0.33**

Table: Energy-efficient LED lamps at PGE S.A.'s headquarters:

	2018	2017
LED lamps (in %)	60	40

7. Society

PGE builds relations with local communities through long-term, planned social and business activities. This approach is defined in our business strategy. We build local partnerships for development and cooperation. We make every effort to be a good and responsible neighbour.

7.1 Policies concerning social issues

Since 2014, PGE Group has a procedure for managing social involvement that sets out directions for cooperation in this area. Operating standards for both the company and its employees are also specified in PGE Group's Code of Ethics, including the following rule: "We care about relations with local communities."

Actions aimed at ensuring equal access to electricity and heat are an important aspect of the firm's social responsibility.

CSR – AREA: ECONOMY

Business strategy objectives	CSR directions and rules Code of Ethics	Operations
Active participation in shaping the business environment	Economy We support the development of local communities We care for good relations with local communities	We build local partnerships for development and cooperation through regular dialogue with the local community We pursue a sophisticated employee volunteering programme We support organisations and people in need through PGE's corporate foundations.

7.2 Good neighbourhood

Activities addressing the local community include numerous investments in power grids, as locally needed.

A considerable part of PGE Dystrybucja's investments is aimed at increasing the capacity for connecting new generation assets that are based on renewable energy sources, thus increasing the share of "green energy" being put online across the country and reducing CO₂ emissions.

In 2018, PGE Dystrybucja spent almost PLN 1.6 billion on grid modernisation and construction of new energy infrastructure. Investment and modernisation works were performed throughout the company's entire operating area.

PGE Dystrybucja is ramping up activities in the field of live working technologies, which make it possible to conduct investment and modernisation works on overhead medium voltage power lines without inconvenient interruptions in electricity supply and thus reduce the SAIDI and SAIFI electricity supply quality indicators. A system for cable line servicing was developed on the basis of a mobile medium voltage cable line with an additional external cover resistant to mechanical factors and adapted to multiple cable roll-out. Moreover, the company has introduced new technologies for live working using a mobile 15/0.4kV transformer station. Connecting a mobile power source using elements from the cable line service system makes it possible to provide supply to customers at different points of an extensive MV power line without the need to use generation sources such as generators powered by a combustion engine.

A programme to rebuild overhead lines into cable lines, which is being implemented at all of PGE Dystrybucja's branches, is aimed at reducing negative impact on the natural environment. Replacing "naked" overhead lines with insulated lines, which are used as a standard solution in modernisation work, is also aimed at environmental protection.

Implementing a multi-annual modernisation investment plan, PGE Dystrybucja received an energy efficiency certificate from the President of the Energy Regulatory Office, i.e. White Certificate. This is more evidence that the state of the distribution grid is improving, the role of energy efficiency is gaining in importance and PGE Dystrybucja is ramping up the scale of modernisation of its infrastructure.

PGE FOR PROSUMERS

The owners of household micro-installations are increasingly able to use the energy they produce for own purposes or "warehouse" it in the power grid, thus becoming a prosumer. In April 2018, a consortium implementing a project that increases the role of prosumers in the power grid began its work. The consortium's leader is the Łódź University of Technology, and members include: PGE Dystrybucja S.A., Lublin University of Technology and Apator Elkomtech. The project aims to integrate active prosumers' systems with the electricity grid and create a system for managing the operation of micro-installations. This will result in a safe and efficient operation of the electricity grid with the support of prosumer devices. The project's main assumption is the active participation of prosumers in the operation of a low-voltage distribution grid. The consortium is developing an integrated and automated system that will use new, specially designed equipment and the existing prosumer installations. For the Distribution System Operator, increasing the reliability of electricity supplies and ensuring grid stability are an especially important factor in the case of connecting numerous micro-installations to a single transformer station. The project is expected to run for several years. Works on industrial and development research are currently progressing in line with the plan. The project is co-financed by the EU.

ENERGY FORUMS

PGE Dystrybucja regularly organises partner meetings with the representatives of local government authorities. Every two years, each of the company's branches organises an Energy Forum for local government authorities, where PGE Dystrybucja representatives discuss cooperation with city presidents and mayors and municipality leaders. Discussed during meetings are subjects relating to key investments in each of the company's branches. Much attention is paid to ways of regulating the legal status of land occupied by power equipment, highlighting the role of active participation of both sides in the process of developing local spatial development plans. These meetings are also planned for 2019.

COOPERATION WITH CRISIS MANAGEMENT CENTRES

Based on arrangements, the company closely cooperates with Voivodship Crisis Management Centres. In 2018, an operational meeting was held at the Łódź branch between the branch's representatives and the Voivodship Crisis Management Centres and local government authorities from the municipalities covered by the branch. These meetings are devoted to rules of cooperation, especially information sharing during power failures. Procedures in place in the case of mass-type failures were presented to the participants. A contact person (member of crisis team) was appointed as a result of these meetings for contacts with Powiat Crisis Management Centres in each of the energy regions - in the event of a mass-type failure. In addition, a letter from the Łódź Voivodship Governor and PGE Dystrybucja, Łódź branch, was sent to powiat leaders and city mayors with a request to place information on planned shut-downs at the websites of all municipalities and use of the Company's newsletter in the case of planned interruptions.

PROGRAMME TO SUPPORT DEVELOPMENT OF SITE MUNICIPALITIES

PGE EJ1, which is currently conducting site and environmental surveys intended to select the final location for the nuclear power plant build, is in constant dialogue and cooperation with local communities since the potential sites were identified. The Programme to Support Development of Site Municipalities, launched in 2015, is one of the forms of such cooperation in the area of corporate social responsibility. It aims to strengthen partner relations with the local community and the authorities of three site municipalities: Gniewino, Choczewo and Krokowa, as well as the Puck and Wejherowo poviats. The programme consists of financing or co-financing initiatives from residents and local governments as regards educational and information activities concerning nuclear power, activities related to the job market and support in professional development (Puck and Wejherowo poviats), cooperation on implementation of municipal infrastructural projects, charitable initiatives and sponsorship projects. The programme's beneficiaries include local government units, residents and organisations operating within these municipalities as well as tourists visiting these regions. Decisions on project funding are made by an advisory council, which consists of the representatives of local government, local community and PGE EJ1. PLN 7,200,000 was spent to support projects within the programme in 2015-2018.

The programme constitutes a response to the needs and expectations of local communities and is perceived by them as important. It supports both larger initiatives from local governments, such as road and sidewalk construction, as well as smaller initiatives such as activity centres or kids' centres. In public opinion surveys, local communities view PGE EJ 1 as friendly, reliable and supportive of the region. The programme is positively viewed by residents - four out of five think that it is important to the local community (79%).

SHARE THE HEAT

For over 10 years, PGE Energia Ciepła's branches and companies have been running programmes to support socially sensitive customers. Their beneficiaries include NGOs, foundations and associations that act for people in hardship and for families in need referred by social assistance centres. The support provided by PGE Energia Ciepła as part of campaigns and programmes for socially sensitive people exceeded PLN 400 thousand in 2018 and over PLN 3.5 million in the last ten years. At each PGE Energia Ciepła branch, this solution works in a slightly different way.

The "Share the heat" programme at the CHP plant in Kraków is operated in cooperation with district heating distributor MPEC and other heating producers for the city since 2007. Partners provide grants to cover heating bills for NGOs that work with people who are socially excluded. The organisations (tens every year) are selected by the social affairs division of the city office together with the social assistance centre.

Wrocław-based KOGENERACJA has been cooperating with the Wrocław municipality and Siechnice municipality for ten years. Thanks to an agreement signed every year, public benefit entities or home-based orphanages that use district heating receive grants to partially cover their bills. Locations are selected by the social assistance centres in Wrocław and Siechnice.

In Toruń, a programme entitled "Supporting socially aware customers" has been in place for five years. Its idea is to support district heating clients (public benefit organisations) that help others - people with illnesses or hardship. The committee, which comprises employees (representatives) of divisions and labour unions, selects the programme's beneficiaries every year. In addition, the Toruń-based company has for ten years been organising the competition "Safe work at PGE Toruń," as part of which employees - competition winners provide donations won in the competition (points are converted to cash) to organisations that help those in need. A similar competition is held by the Wybrzeże branch.

The CHP plant in Zielona Góra provides donations to a social assistance programme for Zielona Góra residents who are in material hardship every year (since 2008). The programme aims to help with payments for house heating and use of warm water for families that qualify for social assistance in accordance with criteria from the act on social assistance, with the stipulation that they must be using district heating supplied through the city district heating network. Every year, the Company's representatives sign an agreement with the mayor of Zielona Góra pursuant to which a cash donation is made to the Zielona Góra Town Hall's account to be used by the city for implementing the programme. The programme's beneficiaries, who are natural persons, are selected by the City Centre for Social Assistance. In 10 years, EC ZG has helped 1900 families.

On the coast, PGE Energia Ciepła together with Gdańsk-based distributor OPEC Sp. z o.o. conducts the "Pass the heat forward" campaign. This is a campaign that supports the most valuable initiatives by NGOs and social assistance entities from the Tri-City area. In 2018, the campaign's key theme was "Inter-generational city in open social spaces." Nearly 20 000 votes were cast for the best projects in an online vote. Cash prizes were given to three NGOs from Gdańsk and Gdynia. The 10th anniversary edition was held under the slogan: "Human-friendly innovations."

PGE EC's power plant in Rybnik also helps people with disabilities and those socially excluded and in need. For many years, it has been working with the Rybnik-based Special Olympics group, schools for children with special needs, co-financing summer vacations and year-round activities for children from poor families. A vocational class specialising in printing will be established at the Zespół Szkół Specjalnych 6 school for children with special needs with the assistance of the power plant. The Oligos Association has received support thanks to which it will establish an emergency centre for people with disabilities and their caregivers facing unexpected hardships.

Employees of the Rybnik plant who are in a bowling club volunteer their time to train people at the Silesian branch of the Special Olympics Polska club. A year-round training cycle ends with a gala in December during which finals are held with the participation of local government and the world of sports and culture.

In Gdańsk, PGE Energia Ciepła participates in the "Pomerania runs and helps" project. This campaign aims to promote running and active leisure and more. By buying a special running shirt, runners support a charitable goal. Thanks to this campaign, we helped three people in 2018.

We share the heat with those in need also through an in-house project at the PGE Energia Ciepła Foundation. The programme "Share the heat" aims to support NGOs involved in helping those in need, including the poor, disabled, children with special needs, in funding district heating and warm water. Official NGOs involved in helping those in need and which have access to the city district heating system may apply for donations. Being up to date with payment of heat and warm water bills is required to receive support. In 2018, PGE Energia Ciepła Foundation adopted a resolution to support 25 NGOs.

INTEGRATION OF DISABLED PERSONS

In 2018, nearly 3000 children participated in workshops organised by Wrocław-based foundation L'Arche Wspólnota and funded by Zespół Elektrociepłowni Wrocławskich KOGENERACJA. The goal was to break the taboo surrounding disabilities. In 2018, a team from foundation L'Arche presented a doll play as part of the project "Together we are changing the world" to children from dozens of educational institutions in Wrocław and the surrounding areas. The main characters in these stories struggled with disabilities and talked about their lives and matters of importance to them in an open, funny manner.

The project "Together we are changing the world" has been financed by KOGENERACJA for four years. So far, the specially designed plays have been viewed by close to 13 000 kindergarten pupils and students in grades I-III. These activities make the children sensitive to the needs of others and help them to understand that everyone deserves equal respect.

PGE Toruń helps local public-interest institutions and organisations that act to help children from poor families, sick and disabled persons and those facing social exclusion. Thanks to the support received as part of the company's programmes, it was possible to purchase essential equipment and expand these institutions' capacity. The company cooperates with Alfa Sport Toruń in organising a Disabled Olympics event and is also involved in hosting a climbing competition with Fundacja na Rzecz Osób Niepełnosprawnych "ARKADIA."

7.3 Social sensitivity

Two corporate foundations are the pillars of our organisation's social involvement: PGE Foundation and PGE Energia Ciepła Foundation.

PGE FOUNDATION

In 2018, PGE Foundation prepared the project "Heroes of our Future" dedicated to the participants of the Warsaw Uprising, as part of which 500 Warsaw Uprising veterans received benefits that they could spend on medicines and medical care costs, electricity and similar bills and other essential expenses. The programme was implemented by PGE Foundation, which financed 100% of these benefits, in cooperation with Cultura Memoriae Foundation, which served as the programme operator, the Office for War Veterans and Victims of Oppression, the Warsaw Uprising Veterans Association and the Warsaw branch of the World Association of Home Army Soldiers.

The Foundation also continued the programme "Boxes for Veterans," under which gift boxes are given to Warsaw Uprising veterans, soldiers of the Polish Underground and former prisoners of German concentration camps. Just as in the case of the "Heroes of our Future" project, "Boxes for Veterans" was fully funded by PGE Foundation, while Cultura Memoriae Foundation served as operator. The campaign was not only an opportunity to give gifts to the veterans but, more importantly, to hold intergenerational meetings and discussions.

PGE Foundation also supported the memory of WWII heroes by co-financing the "International Football Tournament for the Small Soldier Cup," which was organised by the Foundation for Development and Promotion of Youth Sports. It also continued to work with the Warsaw Uprising Museum, becoming involved in the outdoor exhibit "Let's keep them in our memory."

Last year was also marked by the support of initiatives related to the 100th anniversary of Poland regaining its independence. PGE Foundation financed anniversary festivities, concerts, monuments and other forms of celebration. Participation in organising the 100th anniversary of Polish women gaining the right to vote, which took place at the Polish consulate in New York, was one of the more interesting tasks.

As part of celebrations for the 100th anniversary of Poland regaining its independence, the Foundation participated in bringing hand-written copies of "Potop" to the Henryk Sienkiewicz Museum in Wola Okrzejska. It also financially supported modernisation works on the Oak Room in the Cistercians Abbey in Henrykowo and an exhibit of exact copies of the Henrykowo Book, which is an historic document of key importance to Polish heritage and European culture, listed in the UNESCO World Memory Register since 2015.

PGE ENERGIA CIEPŁA FOUNDATION

Under the auspices and with the participation of the Deputy Prime Minister, Minister of Culture and National Heritage, PGE Energia Ciepła Foundation in cooperation with the National Remembrance Institute initiated the project "Boards of Memory," which aims to modernise monuments related to the 80th anniversary of the start of WW2. The "Boards of Memory" project is a three-party social and educational initiative that meets three basic goals:

- showcasing and commemorating places of remembrance - boards and monuments - that depict the heroic and dramatic events from WW2,
- bring historic facts to foreign tourists,
- popularise and increase awareness of places of remembrance.

On the 100th anniversary of Poland regaining its independence, PGE Energia Ciepła Foundation in cooperation with a Katowice-based film studio and the Jagiellonian Club created a 60-second educational spot as part of a social campaign focusing on the national flag. The movie shows that the flag is not an object that can be written on or used as advertising space. The flag must be clean, without markings or symbols and it cannot be bleak. It must unite us rather than divide because it is a symbol of community.

In 2018, PGE Energia Ciepła Foundation organised for the 22nd time the National Festival of Artistic Song in Rybnik, with talented and sensitive artists. PGE Energia Ciepła Foundation is also active in sports. In response to people over the age of 55, it organised the YOU WIN National Sports Olympics for Seniors. This was a sporting and recreational event dedicated to seniors wishing to develop their physical activity. This form of activity improves the lives of senior citizens by improving their social relations and their mental and physical condition. The meeting, with approx. 400 participants from seven cities, also contributes to inter generational integration. Aside from sports competition, the Foundation made it possible for participants to get free medical check-ups, e.g. sight or hearing, as well as free services such as medical massages and pearl baths from PGE Energia Ciepła Foundation's Medical Rehabilitation Centre.

ENERGETIC BACKPACK

The Energetic Backpack campaign for families in need wherever we operate has been happening for 16 years. By working with local social assistance centres, first grades from low-income families receive colourful backpacks with school supplies. This is how they can start their school adventure full of energy. In 2018, PGE Foundation together with PGE GiEK and PGE EJ 1 prepared 619 Energetic Backpacks with the most essential school supplies.

PGE'S EMPLOYEE VOLUNTEERING PROGRAMME

Local community support is also pursued through PGE's employee volunteering programme "We help" This responds to the needs of local communities, mainly in areas where PGE Group operates. These needs are best identified by our employees, who themselves are part of the local communities. They come up with their own projects, which with PGE's support bring about positive changes in the surroundings in a meaningful and lasting manner. They reach different groups: children, youth, disabled people, single mothers and the poorest people. A Regional Leaders Network is being created as part of the programme, which constitutes a place for further development for those volunteers who have gained experience implementing their own projects. There are already 740 volunteers at PGE. In the five-year history of the volunteering programme, they have completed 220 projects throughout the country, including 18 by the employees of PGE S.A.

Table: PGE's "We help" employee volunteering programme

PGE's employee volunteering programme by the numbers	2018		2017		2016	
	PGE Group	PGE S.A.	PGE Group	PGE S.A.	PGE Group	PGE S.A.
Number of employees involved in PGE's employee volunteering programme "Pomagamy"	327	20	276	17	180	9
Number of volunteering hours	15024	505.5	12500	1077	13000	347
Number of projects completed	60	5	50	5	40	3
Number of applications submitted	122	7	106	9	109	8
Total amount of PGE's support	PLN 350 000	PLN 25 000	PLN 300 000	PLN 25 000	PLN 200 000	PLN 15 000

BLOOD DONATIONS

There are six Honorary Blood Donor Clubs, with several hundred members, at PGE GiEK and PGE Energia Ciepła branches. Honorary blood donations at PGE Group companies date back to 1970s. Blood donors at these clubs in PGE Group donate blood cyclically throughout the year and become involved in helping the local communities, e.g. by visiting small patients in hospitals and donating blood for these institutions. PGE GiEK in 2018 received the 60 Years of Honorary Blood Donations medal from the Polish Red Cross for special merit in effective support for the Polish Red Cross Honorary Blood Donation activities.

The employees of all key PGE Group companies joined in 2018 the initiative "Drop of Energy for Independent Poland," organised by Polish energy professionals. The campaign was initiated by the Drop of Energy Foundation at Energa and was conducted under the auspices of the Minister of Energy, Krzysztof Tchórzewski, and Minister of Health, prof. Łukasz Szumowski.

501 PGE Group employees, including 385 men and 116 women, throughout the country donated blood between 7 August and 11 November as part of the campaign "Drop of Energy for Independent Poland." Each "drop" meant 450ml of blood for local blood banks. The employees of PGE Group companies donated blood in Zamość, Łódź, Rzeszów, Białystok, Skarżysko-Kamienna, Lublin, Wrocław, Kraków, Zielona Góra, Rybnik, Bydgoszcz, Bełchatów, Turów, Gdańsk and Warsaw.

ELECTRICITY FROM THE HEART

In 2018, PGE's new brand Lumi, dedicated to the residents of Warsaw, prepared the offering "Electricity from the heart" By buying electricity, customers can select a charitable organisation to help (Rak'n'Roll, Caritas or ViVa). Lumi makes a PLN 100 one-time payment to the selected organisation for each contract and PLN 10 for each MWh of electricity used.

The foundations decided to use the proceeds for specific objectives:

- Rak'n'Roll - for psychiatric and oncological therapy,
- Caritas - for helping children in hospices,
- Viva - for heating places where animals sleep.

In order to increase the effectiveness and emphasise the importance of this initiative, PGE's Lumi promoted its offering in local newspapers, radio, social media and by organising a Santa Claus event.

7.4 Active education

As a socially responsible business, PGE Group supports education in the area of safe and efficient use of electricity. PGE Group companies initiate their own educational programmes. This is how we shape proper habits amongst electricity users - kids, youth and adults.

THEATRE FOR THE YOUNGEST

In pursuing this mission, PGE Foundation has prepared an unusual educational adventure for the youngest school children - a theatre play about the safe use of electricity entitled "How Pstryk and Bzik became enlightened." A professional acting team - Teatr O rety - travels around Poland to visit schools for kids aged 5-9. These are mostly primary schools but also social community centres and hospitals with child wards. Young viewers get the opportunity to learn about how electricity is created, when it can be dangerous, how to act in case of a danger, what the markings on transformers mean and how to save electricity. Modern dolls, stage design and songs make it a real treat for kids and their teachers who want to conduct their teaching in an interesting manner. In 2018, the theatre play was shown at 262 locations around the country, with more than 23 000 kids attending.

EDUCATIONAL PROJECTS

PGE Dystrybcja has been for years organising educational campaigns for kids under the name "Safe electricity." The campaign has many forms. At some of the company's branches, kids visit the dispatch centre or meet teams of electricians, while at others energy professionals visit children at schools and kindergartens. There is always one goal - to teach children how to safely use electricity and instil in them safe habits. In 2018, energy professionals from the Łódź branch of PGE Dystrybcja together with police officers from the Poviát Police Command in Pabianice visited kindergartens and primary schools (grades 1-3) in the Pabianice Poviát. Each edition of the campaign is divided into three stages, with talks and an arts competition with prizes entitled "My safe electricity." Thanks to the campaign, kids learned the most important tips on the safe use of electricity and behaviour in vehicle traffic.

The Podkarpacie Museum of Energy, which was established five years ago on the 100th anniversary of this region's energy industry, is located at PGE Obrót's headquarters in Rzeszów. An educational programme is being implemented there entitled "Electromagnetic stores, a scientific adventure at the Podkarpacie Museum of Energy." This is addressed mainly to primary school, gymnasium and middle school students as well as the Third Age University students. Aside from viewing the exhibits, included in the plan of activities are interactive games, plays and experiments in physics. This educational project combines physics with learning about the history of the region's energy industry. Admission to the museum is free. Visitors can view unique exhibits from the beginning of the previous century, which have been saved by PGE Dystrybucja employees from destruction. Science guides accompany visitors.

One of the social initiatives under the auspices of PGE Energia Odnawialna in 2018 was the Powiat Electricity Competition "ISKRA," which addressed knowledge about electrical technology, electronics, energy and mechatronics. The aim of the competition was to motivate students to gain and expand their knowledge. The second edition of the competition was held last year. The "ISKRA" competition included 114 students from 4 secondary schools from the Gorlice Powiat, who had to pass through two stages: theoretical and practical.

PGE Energia Odnawialna sponsored the Nationwide Tournament of Water Machines for the seventh time, with school children from around the country participating. Their task was to build a machine that converts the potential and kinetic energy of water into mechanical energy. Machines were evaluated in two independent categories: "power" and "efficiency." The Nationwide Tournament of Wind Machines was a similar concept. This was the seventh year of the competition. The participants' task was to build a machine that converts wind energy into mechanical energy. School children participated either on their own or in 2-3-person teams and they had to design and build wind turbine blades with diameter of up to 500 mm.

OPEN DAYS

In order for the local community to learn about the specific nature of our work, PGE GiEK, PGE Energia Ciepła and PGE Energia Odnawialna each year organise open days at their facilities during which visitors can get to know the work of miners and energy professionals.

PGE Group's power plants in Bełchatów, Turów, Gryfino and Rybnik as well as CHPs in Gdańsk, Gdynia, Toruń, Kraków, Wrocław and Zielona Góra are facilities of strategic significance to state energy security. Normally they are inaccessible to residents but once a year they organise open days and invite visitors to learn about the inner workings of electricity and heat production. Aside from opening PGE Group's production facilities to visitors, they also conduct educational activities concerning clean air.

The opportunity to visit PGE Group's production facilities with guides is the biggest attraction of the open days. Participants are able to see the machinery, control room and modern pro-environment installations. The guides explain to the residents how electricity and heat are produced in a single technological process known as cogeneration. Additionally, they explain what low and high emission is and why using heat produced at plants and CHPs is beneficial to the quality of air in cities. PGE EC's open days are not just about visiting but are also an opportunity to take part in an educational picnic, which is organised at the CHP and the power plant. Numerous electrical and chemical experiments are conducted, electricity production can be attempted by cycling on a bicycle and first aid rules are taught. Specialists can be consulted on ecological heating.

In 2018, the residents of Toruń participated in two events at the company - an educational family festival entitled "Electrician's Day - science full of energy" and a visit to the gas-powered CHP during open days. In total, over 1000 people viewed how the district heating that heats the homes of more than 60% of Toruń residents is produced.

Similar rationale is behind trips to PGE Energia Odnawialna's Solina hydropower plant, which are organised year-round.

LOCAL INFORMATION POINTS

PGE EJ 1, a company in charge of building the first Polish nuclear power plant, named in 2011 the potential locations for the plant, thus beginning continuous dialogue with the local communities. In 2012, responding to the information and educational needs of the residents of the municipalities of Choczewo, Gniewino and Krokowa, the company launched Local Information Points, where residents could obtain information on nuclear power and the on-going investment.

The Local Information Points are located in each of the three potential location municipalities and they are the first point of contact for representatives of the local community or tourists visiting the region, who seek information on nuclear power, PGE EJ 1's investment programme, the on-going site and environmental surveys and the company's current activities. The Local Information Points are staffed with people born and raised in these municipalities, who given their role act as the programme's local ambassadors. These people are the company's representatives in contacts with the local administration and are in charge

of on-going cooperation as regards educational and information activities with both local government authorities and their units as well as with the residents themselves. During the holiday period, the Local Information Points move into places that are visited by tourists, closer to beaches and tourist attractions, and they change into Vacation Information Points.

Based on a public opinion poll conducted at the request of PGE EJ 1 at the turn of November and December 2018 within the potential location municipalities, almost half of the responders had noticed information points in their area where they could obtain information on nuclear energy. Every fourth resident of the potential location municipalities has visited a Local Information Point. The people who have visited the information points view them positively - 89% of the responders assess them favourably, while 94% view the point's service positively.

7.5 Sports and culture sponsoring

We are close to local communities also thanks to our sponsoring activities which focus on two areas: sports and culture. Sponsoring activities are intended to build PGE's reputation and garner public sympathy. They also support objectives within corporate social responsibility.

Sponsoring activities promote the PGE brand, increasing its awareness and reach. The strategic marketing goal of PGE S.A. and PGE Group is to retain existing clients and gain new ones.

We sponsor numerous important cultural events. These often are history-themed projects. In 2018, PGE's activities focused on supporting initiatives related to the 100th anniversary of Poland regaining its independence. These projects had very far reach and thematic range.

Nationwide and regional events were part of the supported projects. In November 2018, the movie "Independence" had its premiere. Previously unknown archive footage from 1914-1923 from Poland as well as from Germany, France, the U.S. and Russia was used. Digitally restored and coloured archive footage take the viewers back 100 years. The premiere of "Independence" took place at the Teatr Wielki in Warsaw and was an important element of state celebrations of the 100th anniversary of Poland regaining independence, while the movie's broadcasts in TVP and Polsat had over 5 million viewers. This was an excellent opportunity for brand promotion.

PGE Polska Grupa Energetyczna also sponsored the "Concert for Independent Poland" as part of the government programme "Independent Poland." During the concert well-known Polish artists recalled the most important songs in Poland over the past 100 years. It was held at the stadium PGE Narodowy and broadcast by TVP, attracting over 2.3 million viewers.

The company was also involved in numerous local projects. The residents of Rzeszów had the opportunity to watch worthwhile history-themed movies in an outdoor holiday cinema. A Pusz & Soyka concert was held in Gdańsk, during which the artists sang patriotic songs in new and intriguing covers. In 2018, PGE SA continued its years-long work with the Warsaw Philharmonic and the Warsaw Uprising Museum. We also supported events such as: Music Festival in Łańcut, Mozart Festival, Crazy Music Days, as well as many other local and nationwide events. The company sponsored a movie about Jan Nowak Jeźniorański entitled "The Courier."

PGE Group companies get involved in many interesting and meaningful local initiatives. PGE Energia Ciepła's Kraków branch supports the Kraków Philharmonic. In 2018, the CHP plants in Gdańsk and Gdynia once again sponsored artistic events at the Polish Baltic Philharmonic. The CHP in Toruń supports the Bella Skyway - International Festival of Light.

PGE Group works with professional teams in various sports that are fans' favourites, including volleyball, basketball, football and handball. In 2018, we sponsored PGE Skra Bełchatów (Poland's champions in men's volleyball), PGE Viva Kielce (Poland's champions in men's handball), PGE FKS Stal Mielec (football, first division), PGE GKS Bełchatów (football, second division). PGE also continued its cooperation with individual sports-people: Zofia Noceti-Klepcka (windsurfing) and Waldemar Stawowczyk (sleddog racing), an employee of PGE GiEK. In September 2018, PGE signed sponsoring contracts with five talented sports-people: Alicja Tchórz (swimming), Klaudia Siciarz (athletics), Damian Czykier (athletics), Konrad Czerniak (swimming) and Artur Nogal (speed skating). These sports-people were recommended by the Ministry of Sport and Tourism.

From 2015, PGE S.A. is the name sponsor of speedway world league - PGE Ekstraliga. We also have a sponsorship agreement with PL.2012+, pursuant to which we are the name sponsor of the most popular and most modern multi-functional arena in Poland, i.e. PGE Narodowy.

PGE S.A. also supports local initiatives related to promoting amateur sports, especially by promoting sports amongst children and youth. In June 2017, we launch an amateur sports sponsorship initiative for the most interesting projects. As part of this, in 2018 we supported football academies including PGE FKS Stal Mielec, Widzew Łódź, Stal Stalowa Wola i Avia Świdnik and FC Lesznawola, as well as many local initiatives promoting sports education amongst children and youth.

Sports sponsoring in 2018 also took into account initiatives related to celebrations for the 100th anniversary of Poland's independence. Some of them, such as 100 tournaments for 100th anniversary of Poland's independence or the "Strength of Independent Poland" Olympics were nationwide in reach. Sports clubs that work with PGE Polska Grupa Energetyczna to support amateur children and youth sports were eager to join. Widzew Łódź and PGE Stal Mielec organised football competitions for the youngest that were associated with the 100th anniversary in 2018. Other smaller clubs from various parts of Poland also came up with their own initiatives: JKS Jarosław, Łada Biłgoraj, Błękitni Stargard and Orzeł Piątkowisko, as well as local governments and NGOs.

7.6 Identified risks and management measures in the social area at PGE Group and PGE S.A.

SOCIAL MATTERS AT PGE GROUP		
Risk of damage to third parties	Risk associated with violating collective interests of consumers	Reputation risk
<i>associated with the possible occurrence of property, personal or financial losses as a result of the company's core business activities</i>	<i>being the result of a potential lack of due care in the area of competition and consumer protection</i>	<i>related to possibly image damage to PGE Group in the course of its business</i>
Risk reduction tools		
<p>Monitoring the technical state of equipment and installations</p> <p>Control of work environment</p> <p>Noise and electromagnetic field measurements</p> <p>Use of protective means to reduce harm for the natural environment</p>	<p>Following rulings by the Competition and Consumer Protection Court and opinions of the President of the Office of Competition and Consumer Protection</p> <p>Observing internal standards regarding information sharing</p> <p>Monitoring of Company processes in terms of potential abuse of dominant position</p> <p>Provision of universal access to regulations related to the company's operations (codes, rules, regulations)</p>	<p>Media monitoring</p> <p>Undertaking effective PR activities (in agreement with the Corporate Centre)</p> <p>Conducting regular media relations activities.</p> <p>Cyclical meetings of management with employees</p>

<p>Employee training in environmental protection (as part of workplace health and safety training)</p> <p>Appropriate preparation of workplaces</p> <p>Periodic inspection of the security of facilities and assets</p>	<p>Employee training</p> <p>Verification of contracts for legal compliance</p> <p>Verification of existing internal regulations as regards abuse of dominant position Legal consultations</p> <p>Legal consultations</p> <p>Internal monitoring and reporting (ad hoc)</p>	<p>Observing procedures for managing internal, external and crisis communications</p> <p>Observing rules for representing PGE Group in the media (Regulations concerning communications activities)</p> <p>Internal training for management team and employees</p> <p>Diversification of internal communication channels</p> <p>Monitoring of marketing activities</p> <p>Marketing strategy</p>
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SOCIAL MATTERS AT PGE S.A.

HR risk

resulting in unwanted personnel turnover

Risk reduction tools

Long-term hiring plans based on optimal staff size supported by internship programmes in cooperation with technology-oriented schools

8. Clients

PGE Group is a reliable and modern supplier of electricity and heat. We gather knowledge about the needs of our clients on an on-going basis, thanks to which we are able to offer products and services that are tailored to their needs. We are also continuously working on the reliability of supplies and we are introducing increasingly more efficient mechanisms that limit interruptions in electricity supplies. As a regulated area, the provision of electricity distribution services is subject to quality requirements.

CSR – area: CLIENT

Business strategy objectives	CSR directions and rules Code of Ethics	Operations
Reliable and modern supplier	Client	We are improving the quality parameters of electricity supplies, measured in SAIDI/SAIFI.
Wide offering of products other than electricity/heating	We are a responsible partner on the market	We care about our clients' needs by: developing an offering that is tailored to their needs, measured in opinion polls, and improving the quality of customer service
Knowledge about client needs	We are here for our clients	We educate them in how to effectively use energy and on environmental impact. PGE Group conducts harmonised educational activities

8.1 Our policies and approach to managing client relations

PGE Dystrybucja, aside from general norms and regulations, is required to maintain service quality parameters, which are increased every year and include supply interruption time and frequency and time to connect to low-voltage grids. At companies whose employees have direct contact with clients (PGE Obrót, PGE Dystrybucja, PGE EC) we have developed and implemented policies and approaches to managing relations in this area. We place a strong emphasis on the quality of relations with clients. The Polish Power Transmission and Distribution Association (PTPIREE) has developed the "[Code of Good Practices for Distribution System Operators](#)." PGE Dystrybucja participated in this process.

In the distribution area, investments intended to improve supply reliability and reduce SAIDI and SAIFI by 56% and customer connection time by 40% between 2015 and 2020 are under way.

Table: Operating data

Operating data	Unit	2018	2017
SAIDI, average outage duration for each customer served, including:			
Planned	min	299	557
Unplanned, with catastrophic		87	95
		212	462
SAIFI, System Average Interruption Frequency Index, including:			
Planned	units	3.92	5.48
Unplanned, with catastrophic		0.47	0.48
		3.45	5.00

Achievement of quality targets will be supported by focused infrastructure modernisation, development of energy quality monitoring systems, intelligent grid metering and automation and development of a digital transmission system.

PGE Obrót has a Service Quality Book and Customer Service Procedures. Adherence to these rules is regularly monitored and reported. These documents address all sales and post-sales service matters.

The same goes for PGE Dystrybucja - the company has harmonised customer service rules and standards, which are regularly monitoring and reported. In addition, PGE Dystrybucja has a Visual Identity Manual for Distribution Customer Service Locations. This document addresses an area that is related to the visualisation of locations intended for direct customer service.

PGE Obrót has a procedure for accepting and examining client submissions. Most of them are replied to within a few days although the maximum statutory deadline is 14 days. We encourage clients to send in their comments and observations other than those concerning contracts to a special email address in the Głos Klienta campaign. Every comment is examined and taken into consideration in work on improving our processes.

Procedures for complaint processes are in place at PGE Dystrybucja and PGE Obrót. We monitor the volume and type of customer complaints on an on-going basis. The owners of specific business processes and the support area are in charging of handling complaints. Process optimisation conclusions and recommendations are formulated based on complaint and grievance reports. This is intended to build positive relations with clients and increase their satisfaction with PGE. Clients can submit complaints through remote channels as well as at brick-and-mortar customer service sites.

High customer service standards are also in place at PGE Energia Ciepła S.A. Codified Customer Service Standards that focus on quickness, quality and comprehensiveness of service are in place at the CHPs in Zielona Góra, Toruń and Wrocław, which are not just producers but also distributors of heat. All customer questions are examined within 14 days (up to 30 days, if additional analyses and explanatory procedures are performed) and each submission is analysed and used in service improvement processes. The Company constantly responds to any disruptions in heat supplies to our clients through the District Heating Emergency Office, which operates around the clock. At PGE Energia Ciepła's locations where we have assets only to produce heat, i.e. in Gdańsk, Gdynia and Kraków, and our main clients are local distributors or large direct clients, we follow equally strict Customer Service Standards. These are supported by Integrated Management Systems and pro-consumer trade rules.

SATISFACTION INDICATORS

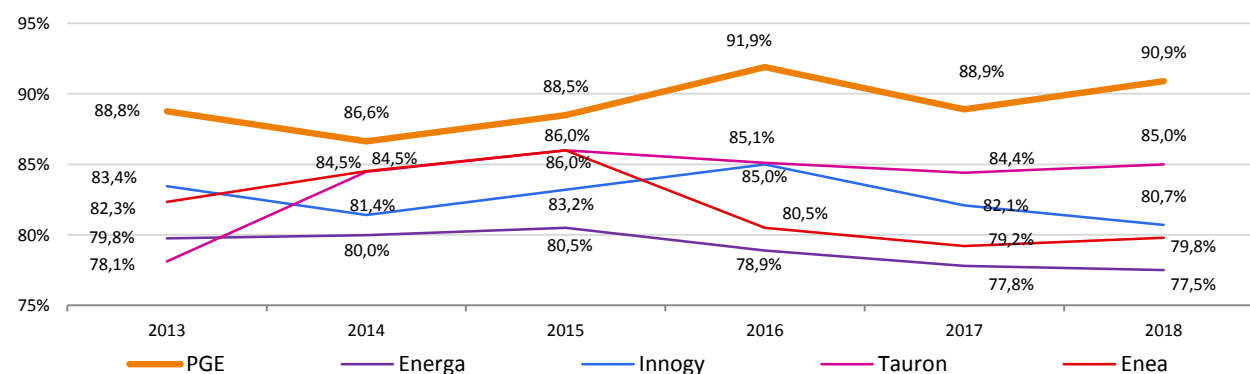
For six years, we have been conducting cyclical multi-dimensional client satisfaction monitoring. We place the greatest emphasis on aspects related to customer service at PGE Obrót at its Customer Service Offices and Contact Centers. The CSI (Customer Satisfaction Index) index remains at a high level for clients in both tariff G and C1.

PGE Obrót is the industry leader, with the highest overall customer satisfaction scores both in Customer Service Offices and Contact Centers. Household clients in tariff G give us high marks for consultant courtesy, focus on clients and issues and the use of simple and understandable language by our consultants. Business clients in tariff C1 appreciate a focus on clients and issues as well as our consultants' kindness.

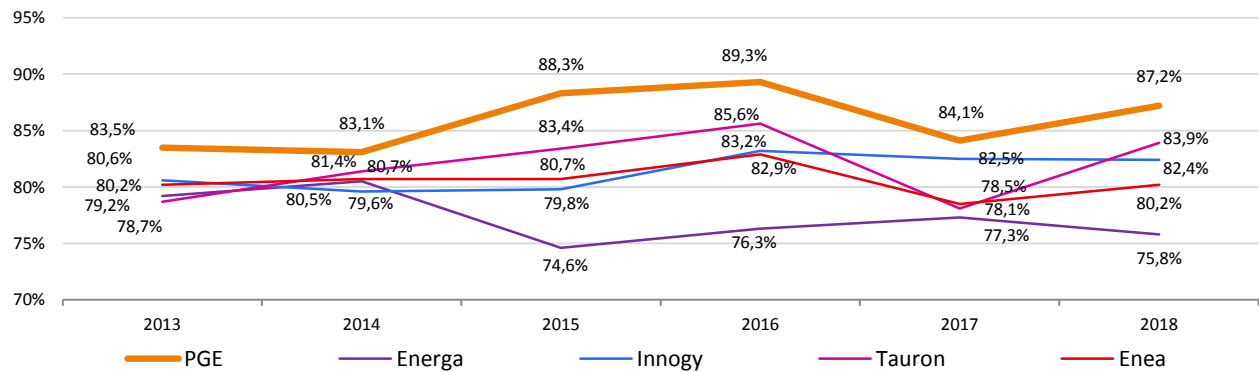
Regardless of the tariff, responders show high satisfaction with issue handling - PGE Obrót receives the highest scores in this area, compared to its competitors ("Satisfaction survey after contact with customer service office and Contact Center" 2018, iAnswer).

Diagram: Customer Satisfaction Index

CLIENTS IN TARIFF G



CLIENTS IN TARIFF C1



Source: "Customer satisfaction survey after contact with customer service office and contact center" iAnswer, BrainLab.

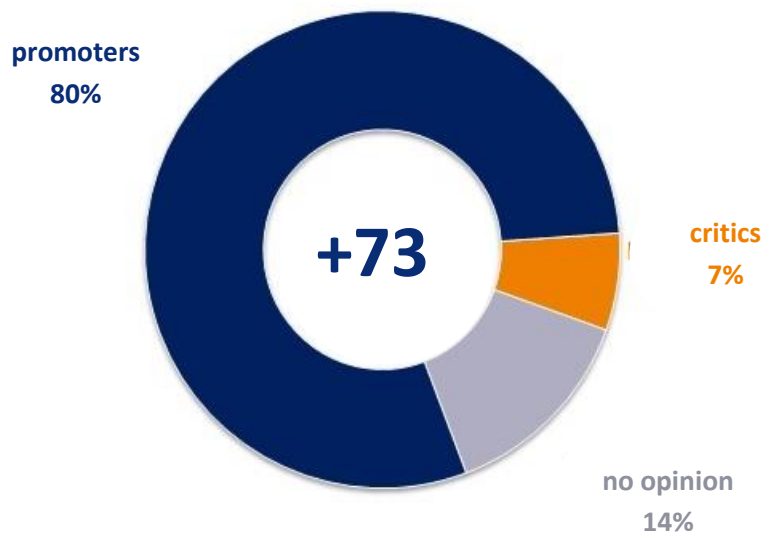
Electricity sales always go together with ensuring comfort of supply therefore we continually monitor customer satisfaction from PGE Dystrybucja's services. We regularly analyse data on connection processes, track information on contacts with the Energy Emergency Unit and visits by electricians. This allows us to improve customer service processes and procedures.

LOYALTY INDICATOR

The NPS (Net Promoter Score), which measures loyalty based on visits by electricians, is reaching 73 points (on a scale from -100 to 100). Electricians receive very high marks for reliability, involvement and attitude during their work, which translates into high customer satisfaction ("Survey of customer satisfaction after electrician visits" 2018, 4P Research Mix).

Diagram: NPS for PGE Dystrybucja's electrician services

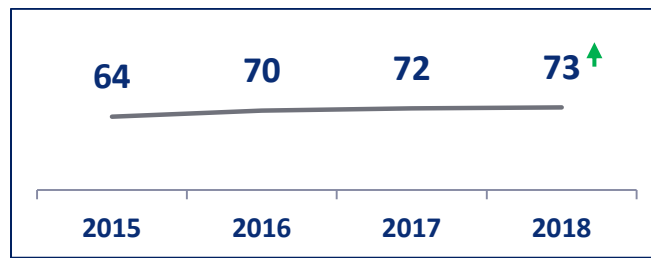
Question: Would you recommend PGE Dystrybucja's electrician services?



Source: „Customer satisfaction survey after electrician visit” 2018, 4P Research Mix

All NPS measurements show a moderate growth trend. The most recent assessment is much higher than the overall change in time (2015-2018).

Diagram: NPS for PGE Dystrybucja's electrician services over the years

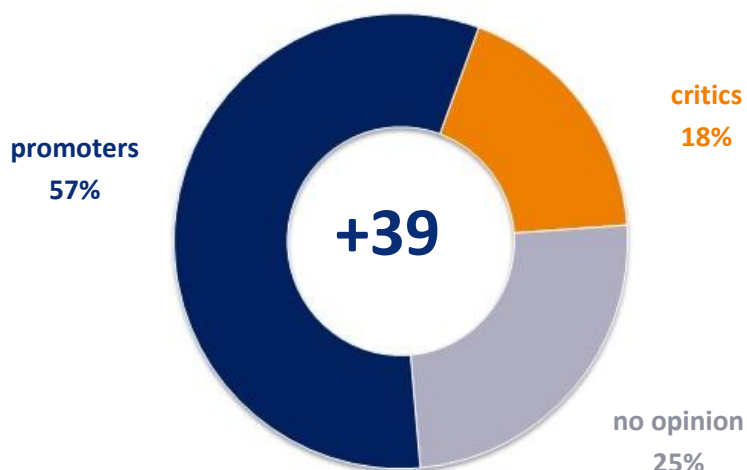


Source: „Customer satisfaction survey after electrician visit” 2018, 4P Research Mix

Our internal operating data are confirmed by survey results that indicate increasing satisfaction with reduced average connection installation time (average declared connection process time is approx. 6 months). The NPS score for this process is at 39 points (a scale from -100 to 100). Also noteworthy are the high marks received by PGE Dystrybucja employees for explaining the content of documents that the client is required to submit in order to get service ("Survey of customer satisfaction in connection process" 2018, 4P Research Mix).

Diagram: NPS for PGE Dystrybucja's connection services

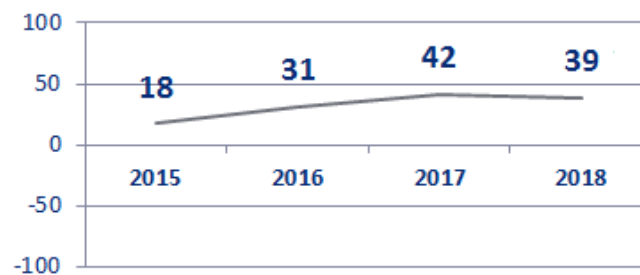
Question: Based on your recent experiences with becoming connected to PGE Dystrybucja's grid, would you recommend PGE Dystrybucja's services to your friends, colleagues, family?



Source: "Customer satisfaction survey after connection process" 2018, 4P Research Mix

NPS is +39 points and shows a rising trend over time.

Diagram: NPS for PGE Dystrybucja's connection services over the years



Source: "Customer satisfaction survey after connection process" 2018, 4P Research Mix

All PGE Energia Ciepła branches and companies conduct periodic customer satisfaction surveys. At CHP Zielona Góra, the overall customer satisfaction level reached over 85% in 2017. An even higher rate of customer satisfaction in district heating

was achieved by KOGENERACJA in Wrocław in 2017 - 92%. At PGE Toruń, customer satisfaction reached 89% in 2018. In Kraków, in the 2018 edition of the social survey "Communal services in the opinions and budgets of Kraków residents" 93.1% of Kraków's residents were satisfied with services provided by the supplier of district heating produced at PGE EC's CHP and 89.9% were satisfied with warm technical water supplies.

In 2018, a satisfaction and preference survey of PGE Energia Ciepła SA's existing and potential clients in the district heating and additional services area was conducted at eight of the company's locations. The survey covered institutional clients, developers, designers and architects as well as individual clients. The OCS reached 83% for institutional clients, 76% for retail clients, 73% for developers and 69% for designers and architects. The survey showed very high loyalty of existing clients as well as willingness to recommend services in both heating and warm technical water areas.

In January 2019, PGE Obrót for the sixth time received the title "Customer-Friendly Company." This is a certificate confirming the high quality of services and good relations with clients, awarded based on independent satisfaction surveys. PGE Obrót's overall score in this year's edition was 91%, placing the company above the positive certification threshold. In 2018, PGE Obrót also received the "Trustworthy Brand" title and laurel in a survey conducted by the monthly My Company Polska. This survey was intended to show which brands are most often used by businesses. PGE Obrót won in the "energy supplier for businesses" category.

8.2 Communication with clients

Good communication is the foundation of client relations therefore we make every effort to transparently and fully inform about our offering. Development of modern solutions is a priority, which is why we have created programmes for specific customer and user groups:

- Quality Ambassador - programme continued in 2018. Its task is to maximally reduce clients' waiting time for service, provide substantive and product information and assist in filling out documents.
- From 2016, select customer service locations of PGE Obrót feature holographic hostesses - modern holograms that, by interacting with PGE's clients, can more quickly find answers to questions about our company.
- PGE Contact Center's helpline and online access to customer service through PGE's eBOK function allow clients to deal with many issues at their convenience using computer or smartphone applications.
- PGE Obrót also offers electronic invoicing for customers' convenience and environmental reasons.
- Chatbot - allows the users of Messenger, a communicator integrated with Facebook, to interactively select the optimal and fully tailored offering to purchase energy and additional services.

At the turn of January and February 2018, service was transferred from PGE Dystrybucja branches to the Telephone Service Centre. The aim for introducing the Telephone Service Centre was to manage submissions lodged using the 991 emergency number. The company began work on automating certain customer service processes in contact with the 991 emergency number. We have deployed optimal technical, organisational and economic solutions to address the objectives: separate telephone-based customer service from operations of the Company's power grid;

- handling of submissions in the system (24 hours per day, 365 days per year);
- automation of submission handling, using IVR technology;
- keeping records of submissions, using IT systems, with option to identify the stage and handling time for submissions;
- increase the availability of the 991 emergency number, especially in the case of mass failures, through automated messaging or clients about on-going emergency interruptions;
- capacity to handle large call volumes without the direct participation of the Company's personnel using voice messages;
- performance of harmonised business processes to inform clients about breaks in electricity supplies and handle their submissions with the Company's structure;
- harmonisation of tools to support the customer submission handling process, which can be flexibly tailored to the Company's future needs;
- improvement in the quality of customer service through continuous access to information.

In a dedicated survey, customers highly graded the Telephone Service Centre. The NPS score in 2018 reached 41 points on a scale from -100 to 100. Overall satisfaction with contacts received 4.39 (scale 1-5, where 5 means very satisfied), and two-thirds of the surveyed customers got through to the Telephone Service Centre on first try (Customer satisfaction survey - 991 emergency number" 2018, 4P Research Mix).

In 2018, PGE Dystrybucja completed preparations to launch a remote channel for filing requests for a connection to the power network, i.e. the New Client Connection Panel. This is a convenient solution that meets our clients' expectations as they will be able to provide the essential documents without visiting the Company's office. Applications for a connection may be submitted online from the beginning of 2019.

PGE Obrót and PGE Dystrybucja pay particular attention to properly informing their clients about the terms and rules of products, prices and other significant elements of service. In the case of contracts being executed outside the company's offices, consumers are also informed about their right to withdraw from the contract within 14 days.

PGE Obrót has a certificate from the Energy Trading Association (TOE) and has adopted the Code of Good Practices of Electricity Sellers. Every year, it participates in TOE's nationwide educational and informational campaign for electricity customers: "Choose wisely: Check who sells you energy."

KNOWLEDGE SHARING

PGE Obrót regularly conducts activities intended to inform clients about fraud mechanisms applied by unfair energy sellers, who often pretend to be from the proven and trusted PGE. The company warns against this issue by creating own local media campaigns (in regional press, websites and radio stations). Informational leaflets on this subject are available at PGE Obrót's customer service offices and sales sites. In recent months, the company has been distributing booklets with stories showing the methods being used by fraudsters on the energy market. It regularly publishes information on this matter on its website.

Another important channel of pro-consumer activities in local communities is meetings organised for people over the age of 50. Various surveys show that the elderly are the most exposed to unfair practices in energy sales. The company works with local government authorities (city town halls, voivodship offices, marshal's offices), police, fire-fighters and other entities such as PGE employees provide knowledge to participants that allows them to protect themselves against suspicious proposals. In 2018, such meetings were held in the operating area PGE Obrót's branches in Skarżysko-Kamienna, Białystok, Warsaw and Rzeszów. Another cycle is planned, which will increase the reach of our campaign. We also carry out strictly local activities inspired by questions from journalists concerning fraud in a given area. We initiate media discussions and press articles of educational and informational nature to highlight the problem.

In 2018, during more than four weeks of holidays, PGE placed PGE Obrót's mobile information zones in 30 cities (Przystanek PGE). Every day, experts responded to questions regarding tariff changes, explained formal issues related to invoices and contracts, informed about products and modern solutions. A significant objective of the campaign was to raise clients' awareness of the dangers related to unfair competition on the energy market. Flyers warning and informing about how not to get cheated were handed out. In addition, modern tablets were used at the mobile sites. Clients were able to sign contracts and select services on site. All data was entered electronically and signatures were made using a special pen on a pad therefore it immediately showed up in the tablet under the data entered. A complete document was created this way without using a single sheet of paper. Clients received tree and shrub seeds for selecting electronic invoicing or electronic customer service.

SERVICE WITHOUT BARRIERS

One of the priorities of PGE Obrót is providing service to disabled persons. 78% of PGE Obrót locations are equipped with ramps for wheelchairs and are located on the ground floor. In addition, people having difficulties entering our facilities may use remote channels, which PGE Obrót is constantly expanding. The employees of the 12 largest customer service sites at PGE Obrót are capable of providing service in sign language. Based on their experiences, they developed case studies for the most frequently occurring situations. All brick-and-mortar service sites at PGE Obrót also have magnifying glasses available for the elderly and the visually impaired. Thanks to this, they are able to read documents on their own, whether it is an offering or a contract.

For client and staff safety, customer service locations in Warsaw, Pruszków and Legionowo are equipped with AED defibrillators.

9. Employees

In line with its business strategy, PGE Group strives to develop an organisational culture that is based on partnership, development, responsibility, and that is created by involved employees with relevant competences. Our organisation's values and competence model are of significance not only to the quality of business processes but also to employee relations and development programmes.

CSR - AREA: VALUE CREATION

Business strategy objectives	Rule-based CSR Code of Ethics	Operations
Value-based culture	Value creation	We act in line with ethical rules
Involved employees with relevant competences	We care about health and safety	We promote safety and we care about employee satisfaction and involvement
	People at our company	We create conditions for the development of innovative ideas

9.1 Our policies and approach to management in the area of labour matters at PGE Group and PGE S.A.

The key document defining our organisation's ethical culture is the [PGE Group Code of Ethics](#). All employees, including management and any other people working for PGE Group, are required to observe the code. The code covers operations as well as PGE Group's relations with employees, clients, business partners and the widely defined surroundings.

The ethics code sets out the values and rules that guide our daily work across all jobs. The code serves as proof of PGE Group's intent to operate in accordance with the law, internal regulations and the highest standards. It contains practical tips and ways to complete undertakings.

Moreover, intensive educational and communication activities are being conducted at the entire Group regarding compliance both inside and outside the organisation as significant support for the Compliance Management System.

Currently, 22 PGE Group companies have a compliance function. In fulfilling its obligations arising in the Code of Ethics, PGE Group adopted in 2017 a Code of Procedure for PGE Group's Business Partners and an Anti-corruption Policy.

HUMAN CAPITAL MANAGEMENT STRATEGY

On September 4, 2017, the Management Board of PGE S.A. adopted a resolution on an updated Human Capital Management Strategy, confirming the directions of changes set out in 2015. The Human Capital Management Strategy is in effect at the following Business Lines: PGE GiEK, PGE Dystrybucja, PGE Obrót, PGE EO, PGE EJ 1 sp. z o.o. ("PGE EJ 1") and the following companies: PGE S.A., PGE Systemy S.A. ("PGE Systemy"), PGE Synergia sp. z o.o. ("PGE Synergia") and PGE Dom Maklerski S.A. ("PGE Dom Maklerski").

In 2018, an updated version of the Human Capital Management Strategy was also adopted by PGE Energia Ciepła SA, which is subject to all solutions and tools within the Strategy. The HR departments at the remaining companies operate in line with their own standards and procedures.

In 2015-2018, we carried out groups of strategic initiatives, the effect of which were regulations in the HR area at the Business Lines and at the following companies: PGE S.A., PGE Systemy, PGE Synergia and PGE Dom Maklerski. Corporate rules for human capital management were introduced, along with procedures tailored to local specifics as well as HR tools at PGE Group level: Workplace Architecture and Competence Model.

The following documents were adopted:

- Corporate Rules for Cooperation in Human Capital Management Area
- Corporate rules for training and development
- Corporate rules for systemic management of key managers
- Corporate rules for mobility
- Corporate rules for employment

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- Corporate rules for social relations
- Corporate rules for HR oversight
- Corporate rules for workplace architecture
- Procedure for competence assessment at PGE Group

HR managers at specific companies are responsible for adopting and applying documents and HR tools developed and distributed at PGE Group for the human capital management area. In 2018, the above-mentioned business lines and companies performed activities in compliance with the corporate rules for the Human Capital Management Area and additionally for adapting procedures to the needs of the Business Lines and companies and for their approval by each of the employers. Performance of HR processes should be strictly in line with the standards contained in the corporate rules and procedures. New HR tools were also developed for this group of initiatives.

PGE GROUP'S COMPETENCE MODEL

We created and implemented a Workplace Architecture for the entire Group, which is the starting point for additional HR solutions and tools. The Competence Model, in effect at the entire PGE Group, is a tool prepared and implemented in 2018 on the basis of Workplace Architecture. This is a set of all competences for the entire organisation, taking into account both firm-wide sources of competitive advantage, as described in PGE Group's mission, values and strategic objectives, as well as requirements concerning specific organisational roles and those resulting from performance of activities in given subject-matter areas. Across all Business Lines and the following companies: PGE S.A., PGE Systemy, PGE Synergia and PGE Dom Maklerski, the SAP HRM system was also launched, allowing to systemically manage the Competence Model and Competence Assessment within an IT system.

In 2018, we introduced an Employee Competence Evaluation based on Workplace Architecture and the related Competence Model. Pilot testing in this area began at PGE S.A., while in 2019 we are beginning implementation at selected PGE Group companies.

Diagram: PGE Group's competence model

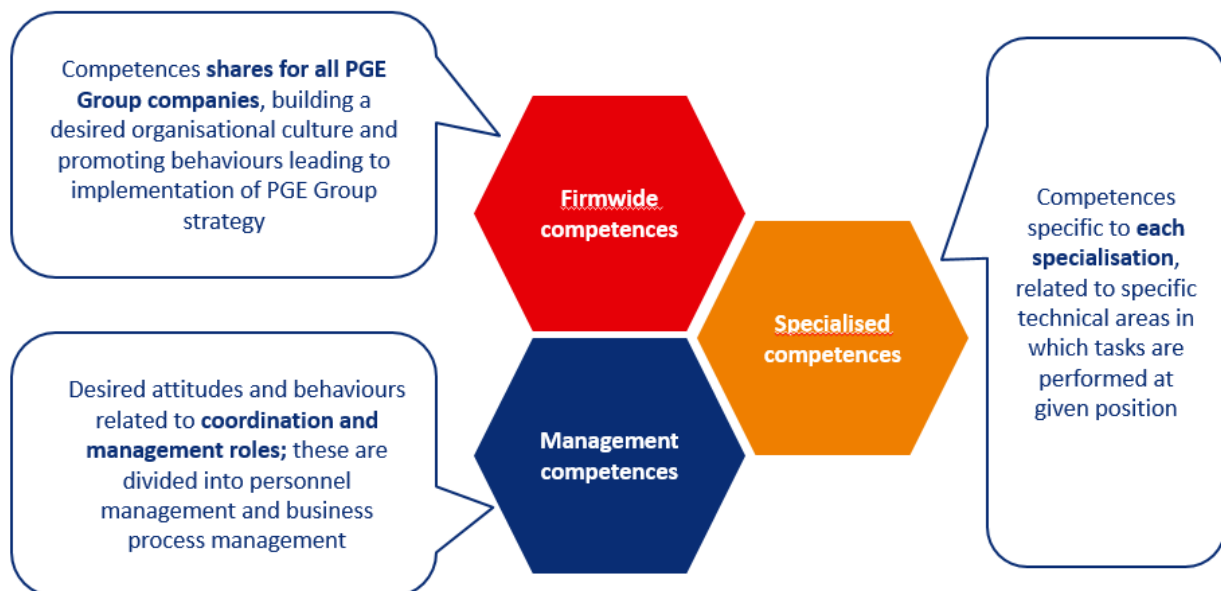
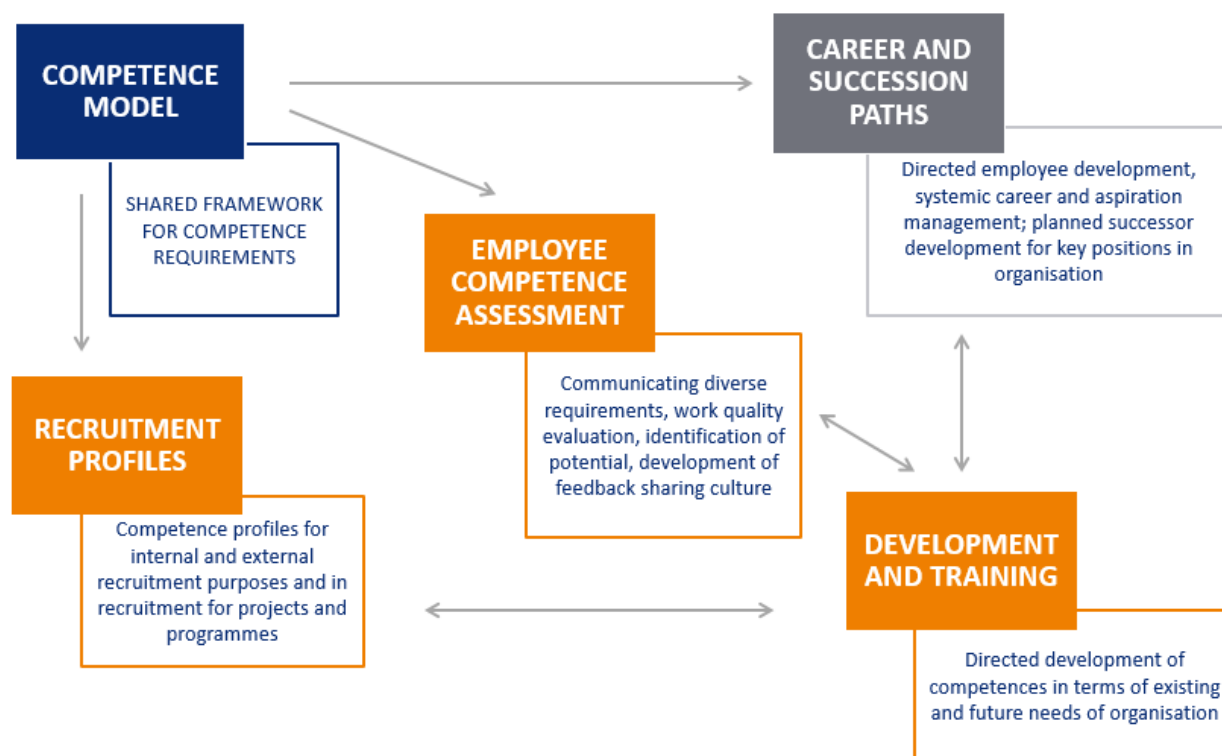


Diagram: Competence model - application at PGE Group



At certain locations, we are implementing an HR as Business Partner model, which corresponds to the vision and initiatives announced in the Human Capital Management Strategy. This involves the separation of transaction and strategic functions in the HR area, which will function based on three pillars:

- HR and payroll transactions (units providing service to employees as part of HR transaction processes),
- HR Business Partner (units supporting managers in managing their personnel),
- HR expertise (units responsible for creating corporate HR policies, overseeing their implementation and monitoring their performance in supporting the business - HR oversight).

In 2019, we plan to expand the number of locations that will feature the HR Business Partner function.

Changes in the HCM area will make it possible to make costs and resources more flexible and increase the use of scale effects, where the HR Business Partner function will be in place.

VOLUNTARY LEAVE PROGRAMME

One of the objectives in the Group's strategy is to make changes that will make PGE the most effective energy group in Poland. This ambitious task requires the employment structure to be re-organised. In previous years, the Voluntary Leave Programme was conducted at certain Group companies as a consequence of a plan to optimise employment. In 2018, departures within the Voluntary Leave Programme took place at PGE Energia Ciepła only.

Table: Voluntary Leave Programme at PGE Group and PGE S.A. (in persons)

	PGE Group	PGE S.A.
Voluntary Leave Programme in 2018	88	0
Voluntary Leave Programme in 2017	312	0

HIRING RULES

At business lines and the following companies: PGE S.A., PGE Systemy, PGE Synergia and PGE Dom Maklerski common recruitment and selection rules are in place, as described in "[Corporate rules for hiring at PGE Group](#)." In recruiting employees, PGE Group makes every effort to ensure that the process is transparent and friendly for participants and effective for the company.

From day one on the job, PGE wants to create an atmosphere of being a part of the Group. Newly-hired employees from key PGE Group companies undergo an adaptation programme that is in place not just at the company where they work but at the entire Group. In 2018, four editions of the "Włącz Prąd" programme were conducted, with 900 participants. The programme aims to transfer knowledge about PGE Group, build engagement and motivation and speed up employee on boarding within the structure, and to develop a desired organisational culture.

ADDITIONAL BENEFITS

PGE Group offers its employees not just interesting professional challenges and an extensive training package but also a high level of social benefits. Given the specific nature of each business line, each of the companies determines what additional benefits it offers to its employees. These benefits includes: additional pay for holidays, additional healthcare, additional pension benefits, subsidies for electricity or additional life insurance.

EMPLOYEE TRAINING AND DEVELOPMENT

We aim to appropriately use our employees' competences and effectively manage the transfer of their knowledge and skills. We encourage employees to self-improve and share knowledge. This way, we are building a self-learning organisational culture. We provide our employees with opportunities to raise their qualifications by participating in specialist training, workshops in soft, management and IT competences, post-graduate studies and foreign language courses.

We are placing strong emphasis on Central Training and Development Programmes. In 2018, we ran the programme PGE Group Internal Audit Academy, addressed to the internal audit staff at: PGE S.A., PGE GiEK, PGE Dystrybucja, PGE Obrót, PGE Energia Ciepła, PGE Systemy, PGE EO. The programme aims to strengthen the role of internal audit at PGE Group, develop consistent methodology for conducting audit work and develop audit skills in accordance with the international standards IIA, as well as to increase employee engagement in the internal audit area. The Audit Academy will introduce the Certified Internal Auditor CIA® module, which confirms the professionalism and standards for internal auditors and their professional competences.

In 2018, we continued workshops in the Compliance Academy on the following subjects:

- Code of ethics and good procurement practices
- Workshops for Compliance Coordinators
- Anti-corruption policy workshops
- Counter-intelligence prevention training with appropriate behaviour when dealing with information threats

We also conducted cyclical workshops for the employees of PGE Group companies in the following areas: finance and taxes, audit, corporate communications, compliance and public aid.

In connection with new personal data protection laws entering into force due to GDPR, we conducted a cycle of training sessions at PGE Group companies for all employees, mainly from the HR, security and communication areas.

In March 2018, we completed the "Lead with energy" management competence development programme for line managers at the following companies: PGE S.A., PGE EO and PGE Synergia. Its aim was to build awareness of the role of manager in shaping the involvement of the manager's employees.

In 2018, the Expert Academy programme for high-level IT specialists at PGE Systemy was completed. The programme was intended to develop specialised competences based on non-standard development methods and responded to individual needs of these specialists in relation to the company's business objectives. Employees in this programme also participated in conferences (also abroad), symposiums, scientific meetings and specialised training workshops. In addition, experts were prepared to act as mentors as part of this programme.

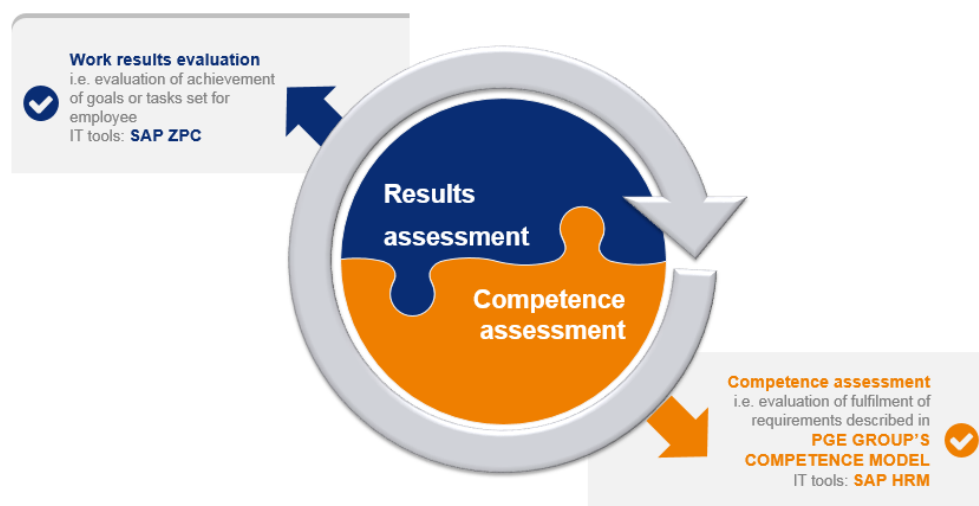
PGE Obrót SA in 2018 conducted a cycle of sales workshops: "There are no difficult clients, just difficult situations," addressed to customer service staff. These workshops were conducted by an internal trainer. The Internal Trainer Team Development programme for experts, which promotes knowledge sharing among the company's employees, was continued. PGE Obrót began

a strategic Mentoring Programme. This project's main goal is to select a group of mentors with specific, unique knowledge and experience, who are ready to share this and support their subordinates in gaining new skills.

EMPLOYEE EVALUATION AT PGE GROUP

Employee evaluation at PGE Group is planned as a system providing comprehensive information on the employee in a given period, taking into account both the employee's efficiency and effectiveness in performing tasks and achieving objectives (work result evaluation) as well as the employee's approach to performing tasks, his/her attitude and behaviour (competence evaluation).

Diagram: Employee evaluation at PGE S.A.



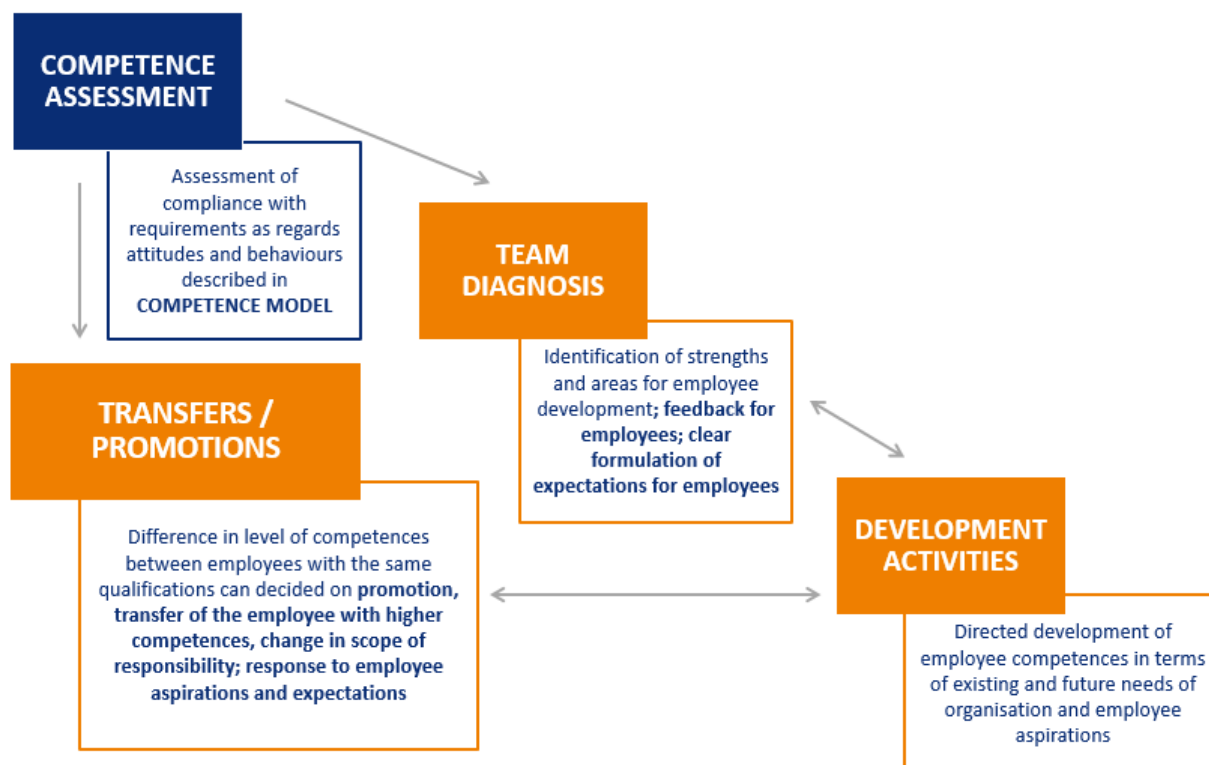
An employee evaluation system based on management of work results serves a supporting function and motivates employees in implementing tasks at PGE Group companies. This system applies to the employees of PGE S.A., PGE Obrót, PGE Systemy, PGE EJ 1, the management team at PGE EO and some of the management team at PGE GiEK and PGE Dystrybucja.

In evaluating work effectiveness and results, PGE GiEK has a management by objectives system for upper management. A system of periodic grades for all employees is in place at Elektrownia Bełchatów and Elektrownia Opole branches as well as at all companies and branches of PGE EC.

The evaluation of employee competences is based on a Competence Model and is one of the key tools and one of the main initiatives currently being implemented in line with PGE Group's human capital management strategy. A pilot programme was conducted at PGE SA in 2018, while work on implementing a harmonised solution at PGE Group will begin in 2019.

Competence evaluation is based on defined competences for specific groups of jobs: management, specialised, executive. Each employee regardless of his/her place in the organisational structure will be evaluated in terms of two firm-wide competences: cooperation and involvement. The employees' substantive knowledge is subject to this evaluation. The evaluation of work results involves setting and accounting for tasks and the employee's development is discussed as part of the evaluation of competences. Employee evaluation makes it possible to make key management decisions based on its results.

Diagram: Management decisions and actions based on employee evaluation results



9.2 Workplace health and safety

As a responsible employer, we care about ensuring that our employees work in safe conditions. PGE Group's objective is to promote amongst its employees a culture of workplace safety. Such initiatives are primarily based on preventive activities as well as the exchange of know-how and experience. Each Group company has its own workplace health and safety regulations. This is mainly due to the different nature of our business lines. Employees of PGE GiEK, PGE Dystrybucja, PGE EC and PGE EO are exposed to the highest risk. Promoting safety among employees is inscribed in PGE Group's strategy as an objective to be achieved as part of corporate social responsibility and sustainable development.

PGE EC has workplace health and safety steering committees. These are decision-making units that also monitor progress in safety plans. Managers at operational level supervise workplace health and safety activities during field observations and visits. A programme to select experts in different domains is intended for experienced employees to share knowledge with their less experienced and competent colleagues. They become mentors sharing knowledge with others and give advice in their areas of expertise. Having authority, experience and knowledge, they become role models in safety for their colleagues.

To promote workplace safety rules, the Workplace Health and Safety Leader programme was established - S.O.W.A. The S.O.W.A. programme was launched in February 2015 and its main goals include:

- partner cooperation with PGE EC's key counterparties on workplace health and safety,
- increasing the level of safety at all levels
- providing the employees of sub-contractor firms with tools and skills that will allow them to effectively respond to threats and unsafe behaviours in the workplace.

A Fire and ATEX Safety Network was appointed in 2015. This team includes representatives from each location of PGE EC and its subsidiaries who have strong competences that are necessary to increase technological safety. The network is supervised by the workplace health and safety committee. The formation of the Fire and ATEX Safety Network is a response to new challenges related to implementing an investment programme (construction of new desulphurisation and denitrogenation systems, construction of gas unit in Toruń). Developing a safety culture is also aided by exchanging practices between workplace

health and safety teams at all facilities. This is done through the workplace health and safety network, which has been operating for 10 years.

PGE EC is also conducting the ABS - Awareness Building System project, which aims to fully eliminate workplace accidents and systematically increase the level of safety culture. In 2018, four workshops were conducted within this project for Workplace Health and Safety Leaders, during which the following leadership skills were discussed and trained:

- Providing feedback and using the JA message,
- Push and Pull questions - as a tool supporting impact on employees,
- Transactional analysis - as a tool for interpersonal communication,
- OSKAR model - a model for motivational talks.

PGE EJ 1's overriding value is the workplace safety of its employees and all participants in the process to prepare the investment to build the first Polish nuclear power plant and subsequently operate it. In accordance with a new Safety Culture Policy, adopted in 2018, and Workplace Health and Safety Policy, the company develops its own safety culture adapted to the specific nature of the nuclear power sector.

Given the specific nature of tasks performed by the company's employees at this stage of EJ's programme, which are low-risk, the largest emphasis is placed on monitoring the work of contractors performing site and environmental surveys.

PGE GiEK, which owns power plants and lignite mines, every year successfully passes an audit of its Integrated Management System at the central office and branches, which included the Workplace Health and Safety Management System. The company maintains relevant certificates, including a certificate of compliance with the PN-N 18001 standard: "Workplace Health and Safety Management Systems - Requirements."

The workplace health and safety management methods applied at the Company bring measurable results in the form of improvements in workplace health and safety for employees. Branch management are required to implement an objective set by the management board of PGE GiEK S.A. in the form of continuous improvement in workplace health and safety by implementing detailed goals in accordance with the evaluation criteria in place.

Every year, PGE GiEK branches actively participate in numerous competitions and initiatives related to workplace health and safety, with excellent results, which shows their commitment to promoting safe work. In a contest organised by the Central Institute for Work Protection - Forum of Safe Work Leaders - PGE Górnictwo i Energetyka Konwencjonalna S.A., branch Elektrownia Turów, received the Gold Card for Safe Work Leader for years 2019-2020. This accolade is testimony to the effectiveness of actions being taken for many years at PGE GiEK branches to improve workplace health and safety.

Elektrownia Turów placed first in the category for facilities employing over 250 people in the competition "Employer - Organiser of safe work" for businesses in the Upper Silesia region. This award confirms the appropriateness of the employer's activities in the area of workplace health and safety and observance of labour regulations. An inspector from the National Labour Inspectorate (PIP) emphasised that a power plant can be an example for others and that the undertaken activities are of a high quality. Another proof of this came in the competition "Most active social work inspector" for the Workplace Social Work Inspector at PGE GiEK, branch Elektrownia Turów. The National Labour Inspectorate organises this contest.

The company's employees every year participate in the Nationwide Knowledge Competition on Work Safety at Power Plants and Heat-and-Power Plants. In the 21st edition of the competition, the Bełchatów plant repeated its team success from previous years, placing first.

PGE Dystrybucja is also constantly raising the level of safety for its employees at work. Electricians who work in the direct vicinity of electricity sources are given special attention. Caring for safety is systematised using formal and stringent procedures and instructions for conducting work as well as those less formal such as the magazine "Bezpiecznik," which promotes safe behaviour and depicts dangers. Protective clothing made of modern, fire-resistant Nomex fabric is used at the company since several years. In 2018, the company became a member of the Forum for Leaders of Safe Work CIOP and the Polish Association Forum BHP ISO 45000.

9.3 Social dialogue and freedom of association

There are 126 trade unions at PGE Group. Such significant employee representation requires an active social dialogue, taking into account the considerable diversity of its participants across many dimensions. Cooperation with trade unions at PGE Group covers three levels:

- central level - social dialogue is conducted by PGE S.A.'s Management Board with frequent participation of CEOs of each Business Line and employee representatives at PGE Group, e.g.:
- Business Line level - social dialogue, coordinated by companies' management boards, is conducted with all trade unions:
- Employers' level - social dialogue is conducted by specific employers on an on-going basis in compliance with the Labour Code, the Act on trade unions and the Act on informing employees and conducting employee consultations on economic, social and legal matters.

In 2018, it was possible to end most of the collective disputes at PGE Group, including disputes initiated at the key business lines by PGE Group's Coordination and Protest Committee at the turn of October and November 2017.¹

As regards collective disputes, it should be noted that at PGE S.A. the social partners reached agreement on wages, which put an end to three wage-related collective disputes, including two from 2015. Moreover, in December 2018 an agreement ending a collective dispute concerning the competence model/evaluation was signed.

PGE S.A. and PGE GiEK S.A. signed "Memorandums on rules of cooperation" with some of the trade unions at PGE GiEK that are members of PZZP Miedza and MZK, which specify the rules for cooperation at supra-branch level, while at PGE EO S.A. the employers executed an agreement on cooperation with the employees, addressing dialogue at the lowest level but closest to the employees.

In May 2018, the Management Board of PGE S.A. decided to separate from the Human Capital Management Department the social dialogue area and create a new dedicated organisational unit - Dialogue and Social Relations Department.

TRANSFER AGREEMENTS IN PROJECT KOGENERACJA

Through a decision of the Management Board of PGE S.A., a Negotiations Team was appointed for conducting talks with the staff of CHPs - PGE GiEK branches, concerning the transfer of workplaces to a new employer as part of the Kogeneracja project. The aim of these talks between social partners was to reach a transfer agreement securing the terms for employee transfers to new entities within PGE Energia Ciepła and guaranteeing work stability.

The talks were held in three stages: with the Joint Trade Union Representation for CHP Employees at PGE GiEK S.A., which represents 19 out of 21 trade unions active in the branches being transferred, with one trade union at the Zespół Elektrociepłowni Bydgoszcz and one at Elektrociepłownia Gorzów.

In the end, on 21 November 2018 an agreement was signed with the Joint Trade Union Representation, guaranteeing all employees employment certainty and continuity as well as retention of the same labour rights.

THREE-PARTY GROUPS

In order to conduct effective social dialogue at national level and solve industry problems, PGE S.A. representatives work in three-party groups - Three-Party Group for the Energy Industry and Three-Party Group for the Lignite Industry. The Groups' tasks are aligned and cover three-party social dialogue, addressing and solving the industry's problems and developing common positions by social partners in certain matters.

These groups include the representatives of government, employers and employees. Effects of signed agreements may include draft bills, programmes or strategic documents. Moreover, the groups prepare joint statements on matters of importance to the industry and employees' interests.

9.4 Managing the generational gap

Certain aspects of the human capital management strategy are becoming urgent in the light of a generational gap. The key initiatives intended to close the generational gap are internship programmes and vocational learning support programmes.

INTERNSHIP PROGRAMMES

As PGE Group, we are actively involved in internship programmes for students and graduates. With these activities, PGE Group strives to reduce a generational and competence gap and continuously build its organisational culture that promotes involvement, professionalism and innovativeness.

Programmes completed in 2018:

¹ At the end of 2018, there were 12 collective disputes active at PGE Group (2 at PGE S.A., 4 at PGE GiEK S.A. and 6 at companies supervised by PGE GiEK S.A.).

- PGE in cooperation with PKN Orlen S.A. and PGNiG S.A. launched the third edition of the #Energia dla Przyszłości internship programme. The programme is conducted under the aegis of the Ministry of Energy. Participants include graduates and students who gain experience over the course of a one-year internship in their areas of interest and learn about work in the energy industry.
- PGE S.A. implemented its own summer internship programme - PROjektuj karierę. The programme is addressed to the students and graduates of Polish universities, who join 3-month paid internships at PGE Group. The key objective of the programme is for the internee to carry out a project that will contribute to development of the organisation and help him/her in acquiring new competences or develop existing ones.
- PGE joined "UKSW's internship programme for law students - equal changes on a competitive market." We have accepted over a dozen law students who under the guidance of experts gained experience in real working conditions.
- PGE worked with The Boston Consulting Group on organising the first edition of the Empower PL mentoring programme, as part of which Polish managers provided mentoring to students studying at Oxford, Cambridge, Warwick and LSE. This is a programme that BCG launched in cooperation with the Federation of Polish Student Associations in the U.K. in order to strengthen relations between the Poles studying there at the best British universities and Polish businesses.

WE SUPPORT VOCATIONAL EDUCATION

PGE Group is implementing the "Vocational education support programme," also in connection with the vocational education system reform being conducted by the Minister of National Education. The programme aims to:

- promote professions in the energy industry,
- ensure high-quality practical education for the electricity and energy industry,
- close the generational and competence gaps at PGE Group companies,

The Programme's objectives are being achieved through:

- Cooperation with vocational education institutions (trade schools, technical secondary schools),
- Organising vocational internships for vocational education students in accordance with an ordinance by the Minister of National Education,
- Launching and conducting classes for the education directions that are dedicated to the energy industry. The best graduates of these classes may constitute future staff at PGE Group companies and branches;
- Supporting schools in equipping specialised workshops.
- Hosting job-learning trips at facilities.
- Conducting training for teachers.

These tasks show that PGE Group employers are willing to work with the vocational education system, as expressed in a letter of intent signed by the Minister of National Education and PGE Group in April 2018.

PGE Group companies also cooperate with universities based on scientific and technical cooperation agreements, with joint undertakings being implemented as a result of this:

- exchange of experiences,
- solving theoretical and practical problems,
- practical use of the university's scientific potential and acquisition of engineering and technical staff.

PGE is implementing a vocational education support programme, which includes cooperation with local trade schools and technical secondary schools, which provide education in professions related to the energy industry. This cooperation covers:

- establishment of sponsored classes,
- organisation of practical job learning (classes and internships) combined with visits to the company's branches,
- preparations for obtaining requisite qualifications and conducting exams for students,
- additional training for students and teachers,
- scholarships for the best students,
- support in modifying the teaching programme,
- participation in recruitment meetings and campaigns promoting a given school, with the intention to acquire students for first classes
- widely-understood promotion of vocational education.

Students take part in internships in a real work environment, which reduces their on-boarding time. The first sponsored classes were created in the school year 2018/2019.

PGE's sponsored class programme aims to revive vocational education and educate a high-quality personnel that meets the needs of the Polish economy, including the energy industry. PGE GiEK signed agreements on sponsored classes for first years at five secondary schools within the Zgorzelec, Bełchatów and Gorzów poviats. Starting in school year 2018/2019, selected technical secondary school classes that are aligned with PGE GiEK's business profile will be held under the auspices of PGE. Based on these agreements, students will be able to study the following professions: electrician technician, mechanics technician, energy technician, mechatronics technician and automatics technician.

PGE Energia Ciepła also cooperates with vocational schools. The Wybrzeże branch in 2018 received for the second time the title "Employer friendly to Gdańsk vocational education." Launching partnership cooperation with local trade schools is an opportunity to strengthen the company's perception as a good employer and thus attract qualified personnel in a time of generational change.

The rising share of renewables micro-installations in the national power system and therefore rising demand for personnel specialised in this type of technology create the need to act in order to develop opportunities for educating professionals in the assembly and operation of renewable energy source installations. In September 2017, the school ZSP 1 Stanisław Staszic in Siedlce launched a new educational direction under the auspices of PGE EO entitled "Renewable energy equipment and systems technician." The company provide specialised teaching equipment for a modern workshop, including a solar collector, photovoltaic panel and a wind turbine. In 2018, similar activities were undertaken at other schools in Zgorzelec, Opole, Radom, Wejherowo and Gorlice. In each of the schools with which PGE EO began cooperation on teaching this profession, one such class (30 people) or half a class (15 people) was established. It is estimated that in the coming years demand for designers, assemblers and service staff for renewables equipment will be growing.

9.5 Identified risks and management measures in the labour area at PGE Group and PGE S.A.

LABOUR MATTERS AT PGE GROUP

Workplace health and safety risk	Risk associated with social dialogue	Risk associated with human resources
<p><i>resulting from the consequences of the company, employees and people working for the company failing to observe workplace health and safety regulations and rules</i></p>	<p><i>connected with a failure in achieving agreement between the Group's management and employees, what could lead to strikes/collective labour disputes.</i></p>	<p><i>resulting in unwanted personnel turnover</i></p>
<p>Risk reduction tools</p>		
<p>Control of work environment</p> <p>Workplace health and safety</p>	<p>Development of multi-channel internal communications</p> <p>Continuous analysis of labour</p>	<p>Competitive remuneration system, comparing to other employers</p> <p>Rules regarding recruitment</p>

<p>training and job-specific instructions prior to start of work at specific workplace</p> <p>Hiring of employees with qualifications and health status adequate to the Company's needs</p> <p>Initial and periodic medical check-ups</p> <p>Periodic assessment of technical state</p> <p>Rules regarding use of protective equipment and work tools</p>	<p>union's expectations</p> <p>Conducting employee surveys</p>	<p>Managing employee development</p> <p>Work with high schools and colleges offering energy-related studies</p> <p>Mentoring</p> <p>Training on Code of Ethics</p>
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LABOUR MATTERS AT PGE S.A.

Workplace health and safety risk	Risk associated with social dialogue	Risk associated with human resources
<p><i>resulting from the consequences of the company, employees and people working for the company failing to observe workplace health and safety regulations and rules</i></p>	<p><i>connected with a failure in achieving agreement between company management and employees, what could lead to strikes/collective labour disputes.</i></p>	<p><i>resulting in unwanted personnel turnover</i></p>

Risk reduction tools

<p>Control of work environment</p> <p>Training for employees on workplace health and safety and workplace instructions prior to start of work at given workplace</p> <p>Hiring of employees with qualifications and health conditions adequate to the Company's needs</p>	<p>Development of multi-channel internal communications</p> <p>Conducting employee surveys</p> <p>Information meetings concerning the scope of changes and the manner in which they are introduced</p>	<p>Competitive remuneration system, comparing to other employers</p> <p>Rules regarding recruitment</p> <p>Managing employees</p>
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Initial and periodic medical check-ups	Negotiations with employees	Training on Code of Ethics
Rules regarding first aid during workplace accidents	Continuous analysis of labour union's activities	
Periodic reviews of workplaces		
Detailed definitions of actual requirements and qualifications expected from candidates for future employees		
Continuous analysis of costs related to ensuring appropriate conditions for safe work		

9.6 Selected indicators in the labour area at PGE Group and PGE S.A.

Table: Number of employees by type of employment and type of employment contract, by gender (number persons)

As at December 31	PGE Group				PGE S.A.			
	2018		2017		2018		2017	
	Female	Male	Female	Male	Female	Male	Female	Male
Total number of employees	41 763		41 629		628		536	
Total number of employees by gender	8 522	33 241	8 445	33 184	313	315	261	275
Employment contracts, full-time	8 429	33 133	8 358	33 092	301	307	249	268
Employment contracts, part-time	92	106	87	92	12	8	12	7
Employment contracts, indefinite term	7 601	30 986	7 510	30 899	296	291	248	261
Employment contracts, definite term	920	2 253	936	2 285	17	24	13	14
Contracts of services	383	575	340	466	4	11	4	1
Contracts for tasks	1	7	4	9	0	0	0	0
Number of self-employed staff	2	22	8	17	0	0	0	0
Ratio of self-employed staff to all employees	0.023%	0.066	0.095%	0.051%	0%	0%	0%	0%

The trading area was combined as part of further integration of EDF's assets, which increased employment at PGE S.A.

Table: Number of employees covered by collective agreement

As at December 31	PGE Group		PGE S.A.	
	2018	2017	2018	2017
Number of employees covered by collective bargaining agreements				
Number of staff	41 763	41 629	628	536
Percentage of total employees covered by collective bargaining agreements	31 393	32 137	4	508
Percentage of employees covered by collective agreement (in relation to all employees)	75,2%	77,2%	1%	95%

Remuneration rules were introduced at PGE SA from January 2018, which replaced previous remuneration regulations, including the Workplace Collective Labour Agreement. The previous regulations had expired at the end of 2017. The new remuneration rules constitute an element of the employees' individual employment contracts.

Table: Number and share of newly-hired and departed employees, by gender and age (number of persons)

As at December 31	PGE Group		PGE S.A.	
	2018	2017	2018	2017

As at December 31	PGE Group		PGE S.A.	
Total number of newly-hired employees	2 785	3 507	81	79
Female	855	891	39	33
Male	2 022	2 616	42	46
Under 30 years of age	1 020	991	28	25
30-50 years of age	1 578	1 766	46	51
Over 50 years of age	278	750	7	3
Share of newly-hired employees	7%	8%	13%	15%
Female	2%	2%	6%	6%
Male	5%	6%	7%	9%
Under 30 years of age	2%	2%	4%	5%
30-50 years of age	4%	4%	7%	10%
Over 50 years of age	1%	2%	1%	1%
Total number of departed employees	2 688	2 564	49	64
Female	774	699	20	25
Male	1 960	1 865	29	39
Under 30 years of age	363	357	11	14
30-50 years of age	910	965	26	34
Over 50 years of age	1 461	1 242	12	16
Share of departed employees	6%	6%	8%	12%
Female	2%	2%	3%	5%
Male	5%	4%	5%	7%
Under 30 years of age	1%	1%	2%	3%
30-50 years of age	2%	2%	4%	6%
Over 50 years of age	3%	3%	2%	3%

Employee turnover in 2018 did not result in a change in headcount at PGE Group.

Table: Average number of training days per year per employee, by gender and employment structure (no. of persons).

As at December 31	PGE Group		PGE S.A.	
	2018	2017	2018	2017
Total number of training days per year	53 551	55 630,75	1 597	1 011,75
Average number of training days during reporting period per employee	1.28	1.34	2.54	1.89
Average number of training days during reporting period per employee, by:	2.83	2.57	2.73	1.86
Female	1.53	1.56	2.90	2.30
Male	1.35	1.44	3.31	2.46
Upper management (Management Board, Directors)	4.82	5.56	2.88	4.53
Management positions	3.38	3.55	3.73	3.55
Other employees	1.10	1.29	2.28	2.13

In 2018, the Management Board of PGE S.A. decided to increase the role of managers and their influence on employee development. The "Lead with energy" management competence development programme for line managers was therefore prepared. Its aim was to build awareness of the role of manager in shaping the involvement of the manager's employees.

Table: Percentage of employees receiving regular performance and career development reviews, by gender

As at December 31	PGE Group		PGE S.A.	
	2018	2017	2018	2017
Percentage of employees subject to regular evaluation of quality of work, by gender	23.5%	28.8%	100%	100%
Number of employees regularly receiving work evaluations	9 804	11 991	628	536
Number of women regularly receiving work evaluations	2 764	2 989	313	261
Number of men regularly receiving work evaluations	7 039	9 002	315	275
Number of directors (management posts, names can differ depending on the company)	1072	1185	153	117
Percentage of employees regularly receiving work evaluations (total women and men - % of total number of all employees)				
Women (% of women out of all women)	32.1%	35.4%	100%	100%
Men (% of men out of all men)	21.1%	27.1%	100%	100%
Directors	37.2%	41.3%	100%	100%

Table: Composition of management and supervisory bodies, management staff, by category, gender and age

As at December 31	PGE Group		PGE S.A.	
	2018	2017	2018	2017
Number of people in the Management	86	90	6	6
Female	7	7	0	0
Male	79	83	6	6
Under 30 years of age	0	1	0	0
30-50 years of age	47	46	2	2
Over 50 years of age	39	43	4	4
Number of people in the Supervisory	181	165	8	6
Female	52	43	2	2
Male	129	122	6	4
Under 30 years of age	0	1	0	0
30-50 years of age	123	112	4	1
Over 50 years of age	58	52	4	5
Total number of employees	41 763	41 629	628	536
Female	8 522	8445	313	261
Male	33 241	33 184	315	275
Under 30 years of age	3 041	2902	96	89
30-50 years of age	20 856	21 196	448	369
Over 50 years of age	17 866	17 521	84	78
Percentage of people on the				
Female	8.1%	7.8%	0.0%	0.0%
Male	91.9%	92.2%	100.0%	100.0%
Under 30 years of age	0.0%	1.1%	0.0%	0.0%
30-50 years of age	54.7%	51.1%	33.3%	33.3%
Over 50 years of age	45.3%	47.8%	66.7%	66.7%
Percentage of people in the Supervisory				
Female	28.7%	26.1%	25.0%	33.3%
Male	71.3%	73.9%	75.0%	66.7%
Under 30 years of age	0.0%	0.6%	0.0%	0.0%
30-50 years of age	68.0%	67.9%	50.0%	16.7%
Over 50 years of age	32.0%	31.5%	50.0%	83.3%
Percentage of employees				
Female	20.4%	20.3%	49.8%	48.7%
Male	79.6%	79.7%	50.2%	51.3%
Under 30 years of age	7.3%	7.0%	15.3%	16.6%
30-50 years of age	49.9%	50.9%	71.3%	68.8%
Over 50 years of age	42.8%	42.1%	13.4%	14.6%

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404-3

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GC-6

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405-1

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GC-6

Table: Type and rate of injuries and work absences and total number of work-related accidents, by company and gender

Period: 1.01 – 31.12	PGE Group		PGE S.A.	
	2018	2017	2018	2017
Total number of work-related accidents:	155	184	1	0
Female	16	20	0	0
Male	140	173	1	0
Fatal accidents	0	1	0	0
Female	0	0	0	0
Male	0	1	0	0
Group accidents	1	6	0	0
Female	0	1	0	0
Male	2	14	0	0
Grave accidents	2	0	0	0
Female	0	0	0	0
Male	2	0	0	0
Minor accidents	152	177	1	0
Female	16	19	0	0
Male	136	158	1	0
Accident frequency rate*	2,71	3,87	1,59	0
Accident seriousness indicator**	24,05	28,64	0	0
Absentee rate***	10608	12239	0	0
Female	1129	1165	0	0
Male	9423	11074	0	0

number of accidents in 2018 / number of employees (as at 31.12.2018) 1000

**total number of absent days of people injured at work / number of people injured at work (excluding victims of fatal accidents)

***total number of absent days due to work accidents (counting calendar days)

PGE Group is undertaking a number of preventive activities and raising its employees' awareness in the workplace health and safety area. Because of this, in 2018 the number of accidents declined, which is also reflected in accident frequency and seriousness indicators. No fatal accidents occurred in 2018.

10. Human rights

All of PGE Group's activities are in compliance with the Universal Declaration of Human Rights, International Labour Organization standards and United Nations Global Compact commitments. The Group underlines its commitment to the right to dignity, association, freedom of opinion, freedom of speech and right to privacy. The above declaration is confirmed in PGE Group's Code of Ethics.

ETHICS POLICIES AND CODES

Human rights matters are taken into account in numerous internal documents and procedures at our company. One of the most important is PGE Group's Code of Ethics, which describes the core ethical values and standards that the organisation expects from all of its employees, including the management. All employees, including management, are required to observe the code. PGE Group's [Code of Ethics](#) is available at the Intranet and at PGE Group's external website.

CUSTOMER RIGHTS

[The set of electricity consumer rights and set of gas fuel consumer rights](#) have been developed by the Energy Regulatory Office in cooperation with the President of the Office of Competition and Consumer Protection based on guidelines from the European Commission. These guides have an educational and informational value for the consumers of electricity and gas fuels and they contain a set of rights that consumers have in their relations with electricity sellers. Each of the guides contains a list of institutions that provide information on the way in which the electricity market, including energy sales and delivery, and the gas fuel market operate. These consumer rights mainly concern grid connections, contracts, seller selection, tariffs, invoices and payments, complaints and the combating of unfair market practices.

PGE Obrót S.A. makes these guides available at its website and customer service locations. At the same time, the Company observes these customer rights and makes every effort to respect them in all of its contacts with clients. Moreover, PGE Obrót S.A. in cooperation with the Energy Trading Association (TOE) participated in drafting the document Good Practices for Electricity Sellers, i.e. what the client can expect from an honest seller. As an honest seller, PGE Obrót applies and promotes good practices, with a view toward building positive relations with clients by creating comfortable cooperation conditions for the company's clients.

A [Compliance Programme](#) document is in place at PGE Dystrybucja, which addresses the tasks of a Distribution System Operator that are needed to ensure that existing and potential system users are treated in a non-discriminatory manner. The requirement to draft and apply the Compliance Programme is specified in art. 9d sec. 4 of the Energy Law, implementing Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity. Due to the fact that PGE Dystrybucja provides energy distribution (transport) services to many entities, including competing energy sellers, it is essential for the Distribution System Operator to treat all market participants in the same, equal and non-discriminatory manner. The Compliance Programme thus specifies a framework for the Distribution System Operator and the resulting obligations for employees. The document is preventive in nature. It is a set of obligations for the Distribution System Operator's employee, i.e. protection of sensitive information, and it specifies prohibited activities - conflicts of interest and unequal treatment of system users. Each PGE Dystrybucja employee has been trained in this aspect and has signed a relevant declaration.

The document was approved through decision DRR-7124-60(5)2014/MKo1 of the President of the Energy Regulatory Office dated 1 August 2014.

SUBSIDIARIES AND SUB-CONTRACTORS

A business partner for PGE Group companies is defined as a natural person, legal entity or organisational unit without legal status operating in the public or private sector, with which PGE Group has any sort of business relation. This includes in particular: contractors, subcontractors, consultants, trading partners in the wholesale trading area, agents, financial institutions, trade organisations and other entities with which PGE Group does business, excluding mutual relations between PGE Group entities.

With a view towards ensuring the highest standards of doing business, we as PGE Group want to work with business partners who respect the law, identify with our rules and apply them in every-day business. PGE Group observes all rules and laws related to the prohibition of forced labour and child labour, and we expect the same of our business partners.

Our expectations of our business partners are described in the [Code of Conduct for PGE Group Companies' Business Partners](#), which can be accessed through our website. All companies that have adopted the Code of Conduct for Business Partners publish it on their websites.

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GC-4
GC-5

In addition, the obligation to observe the law and ethical standards, with a direct reference to the provisions of the Code of Conduct for Business Partners, is included as a standard clause in contracts executed with business partners.

10.1 Compliance

PGE Group has cells and persons dedicated to the compliance area. At PGE S.A., this is the Compliance Department Director, reporting directly to PGE's Management Board and the Audit Committee at the Supervisory Board. Compliance Coordinators are appointed at PGE Group companies and branches (58 people in the Group), some of whom manage larger cells. Trainers are selected and trained at PGE Group companies, who then conduct training on the Code of Ethics and the Anti Corruption Policy.

Moreover, some PGE Group companies have an agreement with an external company - an expert in ethical standards - for serving as "Impartial Advisor." The Impartial Advisor acts as an info-line, an advisor, a place where irregularities concerning mobbing, discrimination or molestation may be submitted. In addition, employees can schedule a session with a lawyer or psychologist.

PGE Group's Code of Ethics was adopted in 2016 and since then a compliance system for PGE Group is being developed. Its various elements incorporate an ethics audit, among other things. Given that compliance solutions are being developed at PGE Group voluntarily since just recently, no such audit has yet been conducted. An ethics audit is planned for 2020.

IRREGULARITY REPORTING SYSTEM

PGE Group has in place the "General Procedure - Submitting and handling Non-Compliance Incident Submissions at PGE Group and protecting whistleblowers." This procedure aims to define the rules for handling notifications of suspected or actual non-compliance incidents that take place at PGE Group companies.

Employees and other stakeholders have the right and obligation to report non-compliance incidents, including suspected and actual incidents.

The system has several options to submit such reports, including: report to direct supervisor, report to compliance cell, report via email or info-line and report via mail - including anonymously. PGE examines all reports - even anonymous ones. The whistleblower can send an anonymous letter or email - using a fictional address to one of the following addresses: uczciwybiznespge@gkpge.pl and pge@liniaetyki.pl, and additionally at PGE Dystrybucja uczciwybiznes@pgedystrybucja.pl. A special dedicated phone line is available for reporting irregularities: +48 22 340 12 02. Persons reporting irregularities and their anonymity are subject to protection.

Some PGE Group companies offer the Independent Advisor service. Persons reporting non-compliance receive the status of whistleblower and are subject to protection. Whistleblowers are protected against retaliatory measures from employees, other people and the employer with regard to their reports.

PGE Group companies respect the Whistleblower's right to anonymity within the scope designated by them and protection them mainly through:

- ensuring the confidentiality of their personal data and conducting explanatory proceedings in such manner as to prevent their identification,
- drawing professional consequences for people behaving inappropriately, i.e. harassing the Whistleblower or disclosing his/her identity,
- protecting the Whistleblower's rights against any retaliatory activities or mutual accusations with regard to their reports.

Organisational cells that manage the documentation of people covered by such a report, containing personal data gathered in non-compliance incident reports, process such documentation with special care, in compliance with the laws on personal data protection and the relevant internal regulations, including those guaranteeing the security of personal data and only authorised access to such data.

Organisational cells that manage documentation concerning reports, which constitutes a trade secret, process such documentation with special care, in compliance with the laws on combating unfair competition and the relevant internal regulations, including those guaranteeing the security of such data and only authorised access to such data.

CASE STATISTICS

PGE Group companies have launched the Whistleblower function, i.e. a system for reporting irregularities. Anyone can be a Whistleblower, especially employees, consultants, contractors, sub-contractors, suppliers. A Whistleblower is a person reporting irregularities, information on suspected or actual non-compliance incidents, the effects of which may be harmful

for PGE Group companies. Reports may especially concern criminal activities. Corruption, infringement of employee rights, conflict of interest.

A register of cases is maintained internally at the Compliance Department. 15% of cases concerning PGE Group companies in 2018 addressed the human rights area.

10.2 Training and education

Employee training concerning the human rights policy and procedures that take into account human rights took place in 2018 at those companies that have a compliance function. As at December 31, 2018, this applied to 23 PGE Group companies.²

Table: Employee training concerning the human rights policy and procedures that take into account human rights.*

Code of Ethics	PGE S.A.	PGE GiEK	PGE Supply	PGE Distribution
Total number of training hours completed	16	156	108	150
Number of employees trained	565	16110	1463	10231
Percentage of employees trained	99.6%	99.5%	93.7%	98.8%

Code of Ethics	PGE EO	PGE EJ 1	PGE Systemy	PGE Dom Maklerski
Total number of training hours completed	164	4	10	1,5
Number of employees trained	75	71	543	26
Percentage of employees trained	100%	85.5%	64%	100%

Code of Ethics	PGE Synergia	Megazec sp. z o.o.	Elbest sp. z o.o.	Elbest Security sp. z o.o.
Total number of training hours completed	2	2	72	20
Number of employees trained	150	176	438	1144
Percentage of employees trained	97.4%	98.3%	92.6%	100%

Code of Ethics	Bestgum sp. z o.o.	PTS Betrains sp. z o.o.	Elbis sp. z o.o.	Eltur-Serwis sp. z o.o.
Total number of training hours completed	12	308	4	54
Number of employees trained	76	1403	114	680
Percentage of employees trained	73.8%	99.4%	100%	100%

Code of Ethics	MegaSerwis sp. z o.o.	Elmen sp. z o.o.	Ramb sp. z o.o.	PGE EC
Total number of training hours completed	36	22	18	250
Number of employees trained	1031	371	1404	1654
Percentage of employees trained	99.6%	100%	99%	97%

*No data for the following companies: PGE Centrum sp. z o.o. and PGE Ventures sp. z o.o.

Training on the Code of Ethics, containing a training module concerning human rights, is organised at PGE Group every three years. Each employee who passes an exam at the end of this training session receives a certificate. The document is valid for three years, until the next training session. The stated number of employees who have been trained at the given company is the number of employees with a valid certificate.

² Compliance structures are in place at the companies listed in the table concerning training for the human rights policy and at the following companies: PGE Centrum sp. z o.o. and PGE Ventures sp. z o.o.

10.3 Identified risks and management measures in the human rights area at PGE Group and PGE S.A.

Risks associated with respect for human rights, such as discrimination, mobbing or molestation, have been identified, and activities that are at the basis of preventing such risks are indicated and described in the Code of Ethics, Code of Conduct for Business Partners and certain other procedures. Provisions protecting against these risks are placed directly in the form of ethical clauses in contracts with business partners thanks to which our high standards are also imposed on other companies. In the Code of Ethics, risks associated with human rights such as discrimination in employment, mobbing and molestation, hiring of children, illegal hiring, work in unsafe conditions, are addressed by: having permanent employment contracts as the basic form of employment, ensuring the highest standards in organising a safe workplace, applying objective and non-discriminatory criteria for hiring and promoting employees. We show respect to diversity in terms of race, gender, sexual orientation, age, culture, marital status, religious and political beliefs, freedom of membership in social and professional organisations. We comply with all requirements concerning workplace health and safety.

HUMAN RIGHTS MATTERS AT PGE GROUP

Risk associated with mobbing and molestation

Risk associated with employee discrimination

associated with the possible occurrence of property, personal or financial losses as a result of employee actions

resulting from potential unlawful acts

Risk reduction tools

Training for employees and management

Whistleblower function - possibility to submit irregularities observed in the organisation

Labour regulations

Employee training

Internal standards related to submitting irregularities and providing information

HUMAN RIGHTS MATTERS AT PGE S.A.

Risk associated with mobbing and molestation

associated with the possible occurrence of property, personal or financial losses as a result of employee actions

Risk associated with employee discrimination

resulting from potential unlawful acts

Risk reduction tools

Training for employees and management

Whistleblower function - possibility to submit irregularities observed in the organisation

Impartial Advisor function - possibility to contact an external company in cases related to mobbing

Labour regulations

Employee training

Internal standards related to submitting irregularities and providing information

11. Combating corruption

Compliance units as at December 31, 2018, were in place at 23 PGE Group companies. Each of them was assessed in terms of corruption incidents.

Table: Total number and percentage of companies evaluated in terms of corruption.

	2018
Number of companies evaluated in terms of corruption risk	23
Percentage of companies evaluated in terms of corruption risk	100%

As regards the counter-corruption area, PGE Group companies apply the provisions of PGE Group's Code of Ethics and PGE Group's Anti-Corruption Policy, adopted by the Management Board of PGE S.A. on October 13, 2017. It is in effect at a vast majority of PGE Group companies. At the same time, members of PGE Group management boards underwent training in Anti-Corruption Policy.

Provisions concerning anti-corruption measures are found in PGE Group's Code of Ethics and the Code of Conduct for PGE Group Companies' Business Partners, both of which are available at the website of each Group company. The companies are required to have all of their employees read and receive training on these provisions. The companies provide quarterly reports on these training activities.

In 2018, 23 companies informed members of their management boards, supervisory boards and all employees on PGE Group's policy and procedures in the anti-corruption area.

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GC-10

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Table: Training related to anti-corruption policies and procedures.*

	PGE S.A.	PGE GiEK	PGE Obrót	PGE Dystrybucja
Percentage of management board and supervisory board members trained in combating corruption	100%	100%	75%	33%
Percentage of employees trained in combating corruption	53%	84%	91%	0.6%
Percentage of employees in management positions trained in combating corruption	88%	99%	92%	7%
Percentage of other employees trained in combating corruption	41%	83%	90%	0%

	PGE EO	PGE EJ 1	PGE Systemy	PGE Dom Maklerski
Percentage of management board and supervisory board members trained in combating corruption	50%	18%	78%	100%
Percentage of employees trained in combating corruption	57%	86%	86%	100%
Percentage of employees in management positions trained in combating corruption	92%	66%	91%	100%
Percentage of other employees trained in combating corruption	53%	88%	86%	100%

	PGE Synergia	Megazec sp. z o.o.	Elbest sp. z o.o.	Elbest Security sp. z o.o.
Percentage of management board and supervisory board members trained in combating corruption	75%	83%	33%	100%
Percentage of employees trained in combating corruption	97%	86%	71%	80%
Percentage of employees in management positions trained in combating corruption	95%	100%	95%	100%
Percentage of other employees trained in combating corruption	97%	85%	70%	80%

	Bestgum sp. z o.o.	PTS Betrans sp. z o.o.	Elbis sp. z o.o.	Eltur-Serwis sp. z o.o.
Percentage of management board and supervisory board members trained in combating corruption	100%	28%	100%	57%
Percentage of employees trained in combating corruption	27%	89%	99%	83%
Percentage of employees in management positions trained in combating corruption	100%	100%	100%	100%
Percentage of other employees trained in combating corruption	22%	89%	99%	83%

	MegaSerwis sp. z o.o.	Elmen sp. z o.o.	Ramb sp. z o.o.	PGE EC
Percentage of management board and supervisory board members trained in combating corruption	37%	100%	100%	92%
Percentage of employees trained in combating corruption	82%	97%	12%	76%
Percentage of employees in management positions trained in combating corruption	100%	100%	100%	92%
Percentage of other employees trained in combating corruption	82%	96%	9%	73%

*No data for the following companies: PGE Centrum sp. z o.o. and PGE Ventures sp. z o.o.

11.1 Identified risks and management measures in the anti-corruption area at PGE Group and PGE S.A.

FRAUD AND CORRUPTION MATTERS AT PGE GROUP

Fraud and corruption risk

Procurement risk

resulting from potential unlawful acts

stemming from errors in the process of procuring materials and service

Risk reduction tools

PGE Group's Code of Ethics

Employee training

Internal control system

Guaranteed confidentiality for people reporting fraud

Internal and external audits concerning the company's internal processes and regulations

Universal access to regulations related to the company's operations (codes, rules, regulations)

PGE Group's Anti-Corruption Policy

Procurement policy

Analysis of terms of reference

Mandatory observance of Good Procurement Practices and Code of Ethics

Declarations by procurement procedure participants

Code of Conduct for PGE Group Companies' Business Partners

FRAUD AND CORRUPTION MATTERS AT PGE S.A.

Fraud and corruption risk

Procurement risk

resulting from potential unlawful acts

stemming from errors in the process of procuring materials and services

Risk reduction tools

PGE Group's Code of Ethics

Employee training

Internal control system

Guaranteed confidentiality for people reporting fraud

Internal and external audits concerning the company's internal processes and regulations

Universal access to regulations related to the company's operations (codes, rules, regulations)

PGE Group's Anti-Corruption Policy

PGE S.A.'s procurement policy

Oversight of procurement procedures

Mandatory observance of Good Procurement Practices and Code of Ethics

Declarations by procurement procedure participants

Code of Conduct for PGE Group Companies' Business Partners

12. Report approval

This report on non-financial data of PGE Polska Grupa Energetyczna S.A. and PGE Group for 2018 was approved for publication by the Parent's Management Board on March 8, 2019.

Warsaw, March 8, 2019

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 Wasilek
Vice-President of the Management Board	Emil Wojtowicz

13. Industry glossary

BAT	Best Available Technology
Biomass	Solid or liquid substances of plant or animal origin, subject to biodegradability, 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.
BREF	Best Available Techniques Reference Document
Distribution	transport of energy through distribution grid of high (110 kV), medium (15kV) and low (400V) voltage in order to supply it to customers
Pumped storage plants	A special type of hydropower plant allowing for energy warehousing. An upper body of water is used for this, where water is pumped from a lower body of water using electricity (usually excess electricity in the system). Pumped storage facilities provide regulatory services for the national power system. In times of higher demand for electricity, water from the upper body of water is released through a turbine. This way electricity is produced.
GJ	Gigajoule, a unit of work/heat in the SI system, 1 GJ = 1000/3.6 kWh = approximately 278 kWh
Circular economy	A system that minimises the consumption of resources and the level of waste as well as emissions and energy losses by creating a closed loop of processes in which waste from one process is used as resources in other processes so as to maximally reduce the quantity of production waste
ITPOE	Thermal Waste Processing Installation with Energy Recovery
Energy cluster	A civil-law arrangement that may include natural persons, legal entities, scientific units, research institutes or local government units, concerning the generation, distribution or trade in energy and energy demand balancing, with this energy being from renewable sources or other sources or fuels, within a distribution grid with nominal voltage below 110 kV, with the operational area of the given cluster, not exceeding the area of one district in the meaning of the act on district authorities) or 5 municipalities in the meaning of the act on municipal authorities; an energy cluster is represented by a coordinator, which is a cooperative, association, foundation appointed for this purpose or any member of the energy cluster indicated in the civil-law arrangement.
Cogeneration	the simultaneous generation of heat and electricity or mechanical energy in the course of a single technological process
kV	kilo volt, an SI unit of electric potential difference, current and electromotive force; 1kV= 10 ³ 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
MW	megawatt, a unit of capacity in the SI system, 1 MW = 10 ⁶ W
MWe	one megawatt of electric capacity
Nm ³	normal cubic meter; a unit of volume from outside the SI system signifying the quantity of dry gas in 1 m ³ of space at a pressure of 1013 hPa and a temperature of 0°C.
NO _x	nitrogen oxides
Renewable energy source	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
Distribution system operator (DSO)	an energy 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
Prosumer	final customer who purchases electricity under a comprehensive agreement and generates electricity only from renewable sources at a micro-installations for own purposes, unrelated to economic activities.
Regulator	President of the Energy Regulatory Office (URE), 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.
SAIDI	System Average Interruption Duration Index – an indicator showing the average system interruption duration (long, very long or catastrophic), expressed in minutes per customer per year, constituting the product of multiplying its duration and the number of customers exposed to it during the year, divided by the total number of customers. SAIDI does not include interruptions shorter than 3 minutes and is calculated separately for planned and unplanned interruptions. It applies to interruptions on LV,

MV and HV lines, although SAIDI in the quality tariff does not include LV interruptions.

SAIFI	System Average Interruption Frequency Index – measures the average frequency (number) of interruptions, expressed as the number of customers exposed to the effects of all interruptions in a given year divided by the total number of customers. SAIFI does not include interruptions under 3 minutes and is set separately for planned and unplanned interruptions. It applies to interruptions on LV, MV and HV lines, although SAIFI in the quality tariff does not include LV interruptions.
Low voltage (LV) line	a power line with nominal voltage of up to 1 kV
Medium voltage (MV) line	a power line with nominal voltage of between 1 kV and 110 kV
High voltage (HV) line	a power line with nominal voltage of 110 kV
SO _x	sulphur dioxide
Start-up	an early-stage company established in order to build new products or services and characterised by a high level of uncertainty. The most common features of start-ups are: short operational history (up to 10 years), innovativeness, scalability, higher risk than in the case of traditional businesses but also potential higher returns on investment
Renewable energy origin certificate	a document confirming generation of electricity from renewable sources, issued by the President of the Energy Regulatory Office (URE), i.e. green certificate
Tariff	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
URE	Energy Regulatory Office (Urząd Regulacji Energetyki)
CSI	Customer satisfaction indicator
NPS	Customer loyalty indicator

14. Research and development projects in environmental protection at PGE GiEK and PGE EC

Item	Project name	Company	Project objective	Research partners
Reduction of emissions into the air				
1	Technology for the production of activated carbon and its dosage method in order to reduce mercury emissions from combustion processes in power boilers	PGE GiEK / ELB branch	Mastering the technology of producing lignite-based sorbents and the method of their dosage into the flue gas system in order to achieve the required emission limits resulting from BREF/BAT conclusions.	Warsaw Energy Institute, Chemical Coal Processing Institute in Zabrze
2	Study on the impact of dedicated bromine salts mixtures on emission reduction of mercury and SO ₂ in the flue gases of Bełchatów Power Plant	PGE GiEK / ELB branch	Assessment of the possibility of reduction mercury by technology of the dosage to fuel dedicated bromine salts mixtures, knowledge of mercury behaviour in combustion processes of the lignite coal and the selection of a dose to ensure the maintenance of the mercury level below 7 µg / Nm ³ in the exhaust.	ZPBE Energopomiar Sp. z o.o.
3	Influence of targeted bromine salt mixtures on the reduction of mercury emission in flue gases of Turów Power Plant	PGE GiEK / ELT branch	Assessment of the possibility of reduction mercury by technology of the dosage to fuel dedicated bromine salts mixtures, knowledge of mercury behaviour in combustion processes of the lignite coal and the selection of a dose to ensure the maintenance of the mercury level below 7 µg / Nm ³ in the exhaust.	ZPBE Energopomiar Sp. z o.o.
4	Study on the effectiveness of application of selected dusty sorbents for reduction of mercury emissions at Bełchatów Power Plant	PGE GiEK / ELB branch	Selection of optimal technology for reducing mercury emissions for unit 14 at Bełchatów plant. The subject of research is dosage of bromine salt mixtures to fuel, the subject of research will be the dosage of activated carbon or active coke dust to exhaust fumes.	Project at planning stage. The contractor will be selected in a purchasing procedure.
5	Increasing the effectiveness of IMOS desulphurisation of the Bełchatów Power Plant, with simultaneous minimisation of precipitation of hard sediments in absorbers by dosing of innovative chemical preparations.	PGE GiEK / ELB branch	Developing the chemical composition and dosage method of an innovative biological preparation that reduces sulphur dioxide emission at simultaneous limiting the precipitation of hard sediments in the absorber and avoiding understating the power of the units while complying with the environmental standards resulting from BREF/BAT conclusions.	Megmar Sp. z o.o.
6	Development of a low-cost method of increasing the efficiency of flue gas desulphurisation installation	PGE GiEK / ELB branch	Development and testing of technology enabling the reduction of SO ₂ emissions to the level of new environmental conclusions in the field of sulphur oxides emissions below 130 mg / Nm ³ . (BREF / BAT). (BREF/BAT)	RAFAKO Racibórz
7	Development of technology increasing the efficiency of sulphur dioxide removal in FGD absorbers by applying the sorbent with increased reactivity without the need to grind.	PGE GiEK / ELB branch	Construction of dosing installation an alternative sorbent with increased reactivity, and development and testing of the optimal operating algorithm of the sorbent feed plant for FGD. This will allow to maintain a permissible level of SO _x emissions to the atmosphere in the case of combustion of coal with significant sulphation or failure of limestone mills.	Project at planning stage. The contractor will be selected in a purchasing procedure.
8	Minimisation of nitrogen oxides emissions from Bełchatów Power Plant by dosing to the FGD absorber innovative dedicated chemical components.	PGE GiEK / ELB branch	Development the chemical composition and dosage method of an innovative biological preparation that reduces nitrogen oxides emissions to a level meeting the BAT conclusions emission standards, i.e. below 175 mg / Nm ³	Megmar Sp. z o.o.
9	Development and application of preparations allowing reduction of NO _x and SO ₂ emissions from hard coal-fired power units at Opole Power Plant.	PGE GiEK / ELO branch	Development of the composition and dosage method of an innovative biological preparation allowing for the reduction of NO _x and SO ₂ emissions from power units.	Megmar Sp. z o.o.
10	FLEXICAL - Development of flexible coal-fired power plants with CO ₂ capture in Calcium Looping technology	PGE EC	The aim of the project is to evaluate and increase the flexibility of the power plant integrated with CO ₂ capture in the so-called Calcium Looping. During project implementation, two new concepts will be verified - the flexibility of the Calcium Looping installation and the extension of the system using energy storage using CaO / CaCO ₃ . Data on load changes and energy storage will be used to check dynamic systems and reactor models to increase the efficiency and flexibility of the calcium loop systems. The final result will be the technical and economic concept of the integrated Calcium Looping system with the selected PGE EC plant.	Agencia Estatal Consejo Superior de Investigaciones Científicas, Spain Universität Stuttgart, Germany Politecnico di Milano, Italy Hulleras del Norte S.A., Spain,

GC

GC-9

GC

GC-7

Reduction of emissions into waste water				
1	Performing pilot studies of the boron removal process from FGD sewage	PGE GIEK / ELO branch	Design, construction and installation of a pilot installation to remove boron from FGD sewage. The assumption for the implementation of the project is the forecast increase in the level of boron concentrations, which may exceed the maximum concentrations set by law.	Silesian University of Technology in Gliwice
2	Precipitation of heavy metals from slime generated from the sewage treatment plant from FGD	PGE GIEK / ELB branch	Avoidance of the need to store / utilise slime from FGD sewage treatment plant at Bełchatów plant, which constitutes hazardous waste by development a waste-free technology for the recovery of heavy metals from sewage or slime generated during the treatment of FGD sewage.	Project at planning stage.
3	Removal of various forms of nitrogen from sewage - advisory activities, pilot plant for the removal of nitrates in Gdansk	PGE EC	Development of a technology concept for the removal of ammonia and nitrates from wastewater from wet flue gas desulphurisation for the Gdańsk CHP Plant.	Environmental Protection Institute - State Research Institute
4	Optimisation of water consumption for energy purposes	PGE EC	Identification of possibilities for reducing costs related to water management at PGE Energia Ciepła	PGE EC's in-house research
5	Removal of heavy metals from wastewater at IMOS - development of technology based on Polymer Inclusion Membranes (PIM)	PGE EC	The aim of the project is development of a membrane inclusion module (PIM - Polymer Inclusion Membrane) for removing selected heavy metals from wastewater. The project objectives focus on reinforced diaphragm development and design a modular system equipped with a series of membranes to purify wastewater. Development of automatics system, module control system and condensate transport system for collection of heavy metals from waste water is additionally planned.	Czestochowa University of Technology
6	Removal of heavy metals from wastewater from IMOS - implementation of INNUPS technology in Gdynia	PGE EC	The aim of the project is to determine the possibility of selling metal concentrates and calcium borate from the INNUPS plant in Gdynia. Works will be carried out at the INNUPS installation in Gdynia. Work will begin with technical and economic analyses of the possibility of recovery of metals from the INNUPS installation.	Purolite sp. z o.o.
7	Removal of various forms of nitrogen from sewage - development of technology as part of a co-financed project	PGE EC	The aim of this project is to develop complex technology for the removal of various forms of nitrogen (nitrates, nitrites, ammonium nitrate and organic nitrogen) from industrial wastewater after wet flue gas desulphurisation (wetFGD) process in CHPs, by combination of biological processes. In the project biological methods will be tested: auto- and heterotrophic denitrification, nitrification, Anammox. An important argument for the launch of the project is the need to develop a comprehensive technology to remove various forms of nitrogen from FGD wastewater resulting from legal requirements.	PGE EC's in-house research
Management of combustion by-products				
1	Installation for ashes vitrification in boiler hybrid combustion system (VITRO-ASH)	PGE GIEK / ELB branch	Reducing the quantity of ash and slag intended for landfill and producing a useful material that can be applied in various branches of industry, including in construction. Innovative technology for the processing of substantial quantities of ash and slag in an energy boiler combustion system at ELB consists of using some of coal dust fed to main burners in a process for processing combustion waste in an additional combustion chamber with liquid off-take of slag integrated with the boiler.	Warsaw Energy Institute
2	Intensification of the management of combustion by-products in order to increase the economic efficiency of the Company	PGE GIEK / ELB branch	Reduction, starting from 2019, by at least 10% of the annual costs management of the combustion by-products (UPS), compared to 2015. The activities were mainly planned in the following directions: 1. Management of furnace wastes in unprocessed form, by filling in areas that have been adversely transformed outside the areas owned by the Company. 2. Development of technology for the production of substances based on furnace waste, which can be used for the reclamation of land owned by the Company. 3. Development of technology for the production of market product (s) based on furnace waste.	WASA Sp. z o.o. SUL Sp. z o.o. LSA Sp. z o.o. Project shut-down due to emergency Some of the project work was transferred to a new project entitled Installation for ashes vitrification in boiler hybrid combustion system (VITRO-ASH)
3	Research on the properties of fluidised	PGE GIEK	Conducting research and evaluations of the obtained ashes	Institute of

	fly and bottom (deposit) ash in terms of economic applications and in the R-5 recovery process after implementation of flue gas desulphurisation at units 4-6 and a change in the chemical properties of ashes	/ ELT branch	or their mixtures in order to develop a product capable of being rationally used in the economy and conducting a recovery process at the KWB Turów excavation in a safe and environmentally friendly manner.	Ceramics and Building Materials - Warsaw
4	Measuring and control of ammonia content in fly ash	PGE EC	The aim of the project was reduction of fly ash contamination risk with excess ammonia resulting from the use of deNO _x installations by means of development of the measurement and control method.	PGE Ekoserwis
5	Optimisation of fly ash fineness	PGE EC	The aim of the project is to develop, test and verify the technically and cost-optimal method of improving the coal-combustion fly ash fineness in order to obtain the parameters required by the European PN-EN 450-1 standard.	PGE Ekoserwis
6	Development of technology for functional materials production based on fly ash activated with wastewater from power industry	PGE EC	The aim of the project is technology development for synthetic functionalised materials production (sorbents, zeolites, mesoporous materials) based on coal-combustion fly ash that does not meet the European standards as additive for concrete. The overarching idea of the project is the implementation of the Circular Economy (CE) in the operational activity of PGE EC.	AGH University of Science and Technology
7	Assessment of possibilities to utilise decarbonisation sludge in agriculture	PGE EC	The project objective was assessment of decarbonation sludge usage as a substitute or additive for calcium and sulphur base fertilizers. Second aspect was focus on evaluation and development of sludge drying technology suited for physical and chemical parameters of raw decarbonation sludge.	Wrocław University of Environmental and Life Sciences
Noise emission reduction				
1	Noise emission reduction at transport routes between digger - conveyor belt - stacker at Bełchatów field and Szczerców field using innovative idlers.	PGE GIEK / KWB branch	Compliance with noise emission standards for conveyor transport by improving and introducing changes to idlers at conveyor belt systems.	Zakład Ochrony Środowiska "DECYBEL" s.c.

15. Useful links

- PGE Group website <https://www.gkpge.pl/>
- Integrated Report for 2017 <https://raportzintegrowany2017.gkpge.pl/pl>
- PGE Group's updated strategy 2020 <https://www.gkpge.pl/Relacje-inwestorskie/Grupa/Strategia>
- PGE Group's district heating strategy <https://www.gkpge.pl/Relacje-inwestorskie/Grupa/Strategia/Strategia-Cieplownictwa>
- PGE S.A.'s environmental statement <https://www.gkpge.pl/csr/Srodowisko>
- Elektrownia Opole's EMAS environmental statement <https://elopole.pgegiek.pl/Ochrona-srodowiska/Deklaracja-srodowiskowa>
- PGE Energia Ciepła's EMAS environmental statement <https://pgeenergaciepla.pl/o-spolce/system-zarzadzania>
- PGE Group's Code of Ethics <https://www.gkpge.pl/compliance>
- Code of Conduct for PGE Group companies' business partners <https://www.gkpge.pl/compliance/Kodeks-dla-partnerow-biznesowych>
- PGE Dystrybucja's Compliance Programme <https://pgedystrybucja.pl/spolka/O-Spolce/Program-Zgodnosc>
- Code of Good Practices for Distribution System Operators <https://pgedystrybucja.pl/spolka/O-Spolce/Kodeks-Dobrych-Praktyk-Operatorow-Systemow-Dystrybucyjnych>
- Rights of consumers <https://www.gkpge.pl/Oferta/Strefa-Klienta/Regionalna/Zbiory-Praw-Konsumenta>
- RESPECT Index https://www.gkpge.pl/csr/o_csr/Respect-Index or <https://www.gkpge.pl/Biuro-Prasowe/Komunikaty-grasowe/inne/PGE-ponownie-w-gronie-spolek-odpowiedzialnych-spolecznie-RESPECT-Index>
- Corporate rules for human capital management at PGE Group <https://www.gkpge.pl/kariera/Praca-u-nas/Standardy-HR>
- Student and graduate programmes <https://www.gkpge.pl/kariera/Praca-u-nas/Programy-dla-studentow-i-absolwentow>
- Internship programme 2018 <https://www.gkpge.pl/kariera/Program-stazowy-2018>
- Summer internship programme 2018 <https://www.gkpge.pl/kariera/Program-Praktyk-Letnich>
- PGE Accelerator <https://akceleratorpge.pl/>
- PGE mobility <https://pgemobility.pl/>

16. List of GRI Standards and Global Compact indicators

Presented below is a list of GRI Standards and Global Compact indicators reported in each of the area of PGE S.A.'s and PGE Group's report on non-financial data.

GRI Standards	The Ten Principles of the UN Global Compact	Page
Chapter: "PGE Group"		
GRI-102-1	Name of the organization	5,7
GRI-102-2	Activities, brands, products, and services	7
GRI-102-3	Location of headquarters	Poland, Warsaw
GRI-102-4	Location of operations	PGE Group operates mainly in Poland
GRI-102-11	Precautionary Principle or approach	13 Information also on pages: 23-24, 39-40, 56-59, 65-66, 68-69
GRI-102-45	Entities included in the consolidated financial statements	6
GRI-102-50	Reporting period	1.01.2018 – 31.12.2018
GRI-102-52	Reporting cycle	Annually reported
GRI-102-55	GRI content index	77-78
Chapters: "Managing corporate social responsibility and sustainable development at PGE Group and PGE S.A." and "Society"		
GRI-102-12	External initiatives	GC-1 GC-2
GRI-102-13	Membership of associations	11
GRI-102-16	Values, principles, standards, and norms of behavior	GC-10
GRI-102-40	List of stakeholder groups	3
GRI-102-43	Approach to stakeholder engagement	3-4
GRI-203-1	Infrastructure investments and services supported	31-39
Chapter: "Environment"		
	Approach to environmental challenges	GC-7
GRI 303-1	Water withdrawal by source	14-30, 73-75
GRI 304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	26
GRI 304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	GC-8
GRI 305-1	Direct (Scope 1) GHG emissions	21-23
GRI 305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	25
GRI 305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	26
GRI 306-1	Water discharge by quality and destination	GC-7
GRI 306-1	Water discharge by quality and destination	GC-8
GRI 306-2	Waste by type and disposal method	27
GRI 306-2	Waste by type and disposal method	GC-8
GRI 307-1	Non-compliance with environmental laws and regulations	28
GRI 307-1	Non-compliance with environmental laws and regulations	GC-8
	Encourage the development and diffusion of environmentally friendly technologies.	GC-9
GRI -EU5	Allocation of CO ₂ emissions allowances or equivalent, broken down by carbon trading framework	15-23, 73-75
GRI -EU5	Allocation of CO ₂ emissions allowances or equivalent, broken down by carbon trading framework	25
Chapter: "Clients"		
GRI-EU28	Power outage frequency	41
GRI-EU29	Average power outage duration	41
Chapter: "Employees"		
	Employment	GC-4
	Employment	GC-5
	Freedom of association and the right to collective bargaining	GC-3
	Freedom of association and the right to collective bargaining	53-54

GRI-102-8	Information on employees and other workers	GC-6	58
GRI-102-41	Collective bargaining agreements	GC-3	58
GRI 401-1	New employee hires and employee turnover	GC-6	58-59
GRI 401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees		50
GRI 403-9	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities		61
GRI 404-1	Average hours of training per year per employee	GC-6	59
GRI 404-3	Percentage of employees receiving regular performance and career development reviews	GC-6	60
GRI 405-1	Diversity of governance bodies and employees	GC-6	60
Chapter: "Human rights"			
GRI 412-2	Employee training on human rights policies or procedures	GC-1 GC-2	64
Chapter: "Combating corruption"			
GRI 205-1	Operations assessed for risks related to corruption	GC-10	66
GRI 205-2	Communication and training about anti-corruption policies and procedures	GC-10	66-67