



*Polska Grupa
Energetyczna*

Integrated Report 2019 | Brochure



GREEN DIRECTION OF PGE

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Both the market, our shareholders, as well as clients and business partners expect that the largest energy company in Poland not only analyses the environment on an ongoing basis and undertakes appropriate reactions, but also creates its own solutions and thus sets trends for the energy sector.

Decision-making processes undertaken in the energy sector are characterized by high complexity. Therefore, apart from economic calculation, regulatory reasons and the needs of the Polish power system, I also see the need to maintain a constant dialogue with the society and take actions aimed at obtaining social acceptance for our activities. By assuming the position of the president of the Management Board, with the team of managers, I undertake the task of giving a management impulse to the PGE Capital Group.

The climate policy of the European Union and social expectations are elements that affect the energy sector. Activities related to the European Green Deal in the area of achieving the climate neutrality goal by 2050 and the review of the emission reduction target by 2030 will determine the work of the PGE Management Board. On the basis of a reasonable schedule, we intend to utilize financial mechanisms to achieve these goals.

I consider the attitude of employees of the entire Group and their cooperation-oriented approach to be a key element in the successful implementation of the tasks we are facing.

I also count on constructive dialogue with financial markets, primarily with the environment of investors, banks and insurers.

The green direction is achievable taking into consideration of a conventional basis that will allow balancing the growing number of renewable sources being created and will provide our economy and society with stable electricity and heat supplies.

Wojciech Dąbrowski

President of the Management Board
PGE Polska Grupa Energetyczna S.A.



VALUE CREATION MODEL



MANUFACTURED CAPITAL

We own the largest generation asset base in Poland in the area of electricity and heat production. This is the material foundation of our business. At the same time, we are the second largest distributor of electricity in Poland.

HUMAN CAPITAL

Employees are PGE's most valuable capital. It is thanks to their experience and involvement that we are able to build an organisation that combines social responsibility with business objectives.

INTELLECTUAL CAPITAL

PGE Group's business experience and brand's position are values that enable us to maintain our market position and adapt to a changing world. We invest in innovations. To order to build intellectual capital being the basis of success.

SOCIAL CAPITAL

For us, social capital means good relations with the local communities in areas where we operate. We believe that in the long term only sustainable development based on partner relations is possible.

FINANCIAL CAPITAL

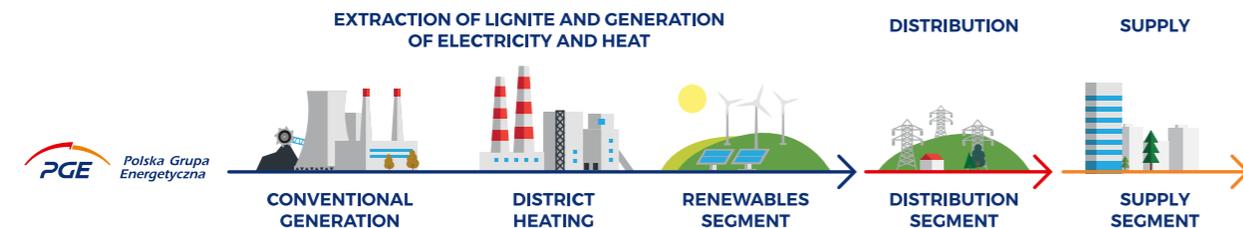
We use funds generated in the course of operating activities as well as equity and debt financing in order to develop the Group and create lasting value for shareholders and bondholders.

NATURAL CAPITAL

We are investing in technologies that directly use the forces of nature - wind, water and sun energy, which are converted into electricity at our renewables installations. We strive to effectively use natural resources. Our priority is to limit negative environmental footprint.

OUR BUSINESS MODEL

We are the largest vertically integrated producer and supplier of electricity and the largest producer of district heating in Poland. We operate across the entire value chain: we produce electricity and heat at our power plants and CHP plants, then we sell and deliver it to our clients throughout Poland, including to households, businesses, institutions and local governments.



	7 141	2 880	1 186	517	2 306	280
Contribution to total EBITDA	40%	17%	7%	32%	4%	
Sales revenues (PLN million)	37 626	19 245	6 058	1 039	6 155	17 312
EBIT (PLN million)	- 4 175	- 7 109	595	657	1 101	247
CAPEX (PLN million)	7 009	4 018	548	151	2 225	30
Market share	32% electricity	19% heat from cogeneration 6% electricity	10% renewables without co-combustion of biomass and biogas	25%*	33%*	



CONVENTIONAL GENERATION

Segment includes lignite mining, generation of electricity and heat in conventional sources.

- 2 lignite mines
- 2 lignite power plants
- 3 hard coal power plants
- 47.61 TWh** - net power generation of conventional generation assets
- 5.61 PJ** - heat production



DISTRICT HEATING

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

- 16 combined heat and power plants
- 44.72 PJ** - Heat production
- 8.42 TWh** - electricity production



RENEWABLES

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

- 17 onshore wind farms
- 33 run-of-river hydro and pumped-storage power plants
- 1 photovoltaic power plant
- 2.29 TWh** - net power generation of renewables assets



DISTRIBUTION

We are the second-largest energy distributor in terms of the number of clients, with an approx. 25% share of the Polish energy distribution market. Our distribution area covers nearly 40% of Poland's territory. Using approx. 290 000 km of energy networks, we supply electricity to almost 5.4 million clients.

- 36.38 TWh** - volume of distributed energy
- 293 686 km** - total length of power lines
- 94 383** - number of distribution stations



SUPPLY

The segment covers electricity sales to end customers, wholesale trade in electricity on the domestic and foreign markets.

- 5.33 m** - customers
- 42.90 TWh** - volume of distributed energy

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

DEVELOPMENT DIRECTIONS

Due to the changes taking place in our environment, PGE must change its face in order to meet the challenges of modern energy. We intend to present the details of the PGE Group's development vision in the fall of 2020. However, we are already carrying on our investments in line with the chosen green direction striving to diversify our generation mix and reduce CO₂ emissions.

Both for the transformation of the Polish energy sector and PGE itself the development of renewable energy sources and the construction of new, flexible generation capacities based on natural gas are of key importance. The low-emission fuel makes it possible to adapt conventional plants to the increasing volatility in the electricity market along with the increase in intermittent generation capacities. The modernization of district heating also plays an important role in the transformation of the energy sector.

OFFSHORE WIND FARMS



- PGE is actively involved in the development of offshore wind farms in the Baltic Sea, planning the construction of wind farms with a capacity of 3.5 GW.
- We have 3 farm projects that we systematically implement, obtaining the necessary permits, and conducting environmental and technical studies. We are planning to build the first two farms with a capacity of 2.5 GW by 2030. Our aspirations go beyond the projects carried on and we are looking for further development opportunities.

ONSHORE WIND FARMS



- The PGE Group is the leader of Polish wind energy with an installed capacity of nearly 700 MW. Our ambition is to maintain our market position developing organically and acquiring already operational farms and projects.

PHOTOVOLTAICS



- Photovoltaics is the most dynamically developing segment of the energy sector in Poland. PGE participates in this development by implementing the photovoltaic power development program. We are actively securing land for photovoltaic investments all over Poland. We pay special attention to the areas belonging to the Group, willing also to utilise the potential to develop photovoltaic farms at our conventional power plants. Our project of development of solar energy assumes 2.5 GW of capacity in 2030.

CONSTRUCTION OF GAS AND STEAM UNITS AT DOLNA ODRA POWER PLANT



- Having regard to the changes on the electricity market and the rising costs of CO₂ emissions, it has become of key importance to ensure the continued operation of our conventional power plants, as they play an important role in the stability of the power system.
- This vision of development is already being implemented at Dolna Odra Power Plant. The modern gas and steam units being under construction will replace the coal-fired units operating today taking advantage of the fuel available (Baltic Pipe gas pipeline, LNG terminal).

MODERNIZATION OF DISTRICT HEATING



- We are aware of the importance of district heating in Poland. Thanks to the developed infrastructure, we provide heat to recipients throughout the country, and by connecting new customers, we contribute to reducing emissions from individual heating sources, which are the main source of smog. Only in 2019, we recorded a record number of connections to the network. The buildings connected have a heat demand of approx. 240 MWt.
- Bearing in mind the EU climate policy and the obligation to provide our customers with heat at the lowest possible cost we are to replace coal-fired units with modern low-emission units, primarily gas ones. PGE's new investments will further contribute to the improvement of air quality in Polish cities. In line with the strategy of the District Heating segment of PGE Group, share of low-carbon fuels in the generated energy should exceed 50 percent by 2030.



ENVIRONMENT

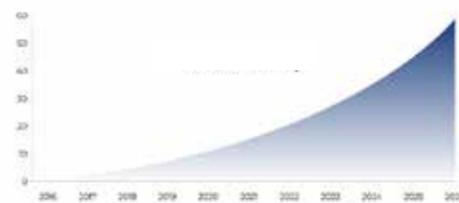
The investments of the PGE Group are aimed at gradually lowering our emission rate. When taking up the challenge of gradual decarbonisation and diversification of the fuel mix, we count on the support of European Union and financial institutions as long-term partners of an effective and fair transformation of the energy sector.

ENERGY TRANSFORMATION

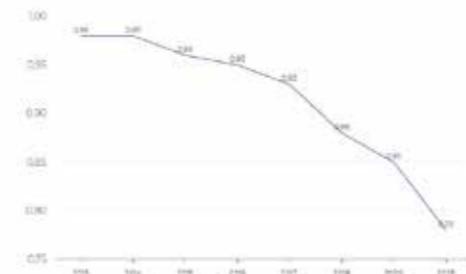


As a result of the investment, the net emission ratio (in terms of tonnes of CO₂ per MWh) will fall from 0.98 tonnes of CO₂ / MWh in 2013, to 0.88 tonnes of CO₂ / MWh in 2018, to 0.78 tonnes of CO₂ / MWh. After 2025, the emissions of the PGE Group units will continue to decrease, as a result of such developments as starting electricity production in offshore wind farms. The commissioning of currently implemented and planned investments will avoid CO₂ emissions at the level of 60 million tonnes in 2016-2026. Projects for the construction of low-carbon sources mean that transformation costs are getting higher. Therefore, when taking up the challenge of gradual decarbonisation and diversification of the fuel mix, the PGE Group counts on the support of financial institutions, which will allow for an effective, but at the same time fair transformation of the energy sector.

Ca. 60 m CO₂ tonnes saved



Overall PGE Group emission rate (tCO₂/MWh)



COGENERATION-EFFICIENT USE OF FUEL ENERGY

According to our District Heating Strategy, we plan to develop our cogeneration activities. It contributes in many aspects to reducing the Group's emissivity. Given the efficient use of chemical fuel's energy, at around 80-85% in new installations, CO₂ emissions are reduced in comparison with the separate generation of heat and electricity. On the other hand, the development of district heating is heading towards zero- and low-emission fuels. One of the objectives in our District Heating Strategy is to increase the use of these fuels to 50% by 2030.

SOCIETY

Our investments constitute a very substantial element of economic growth and their implementation helps to improve the quality of life and work for local communities. We provide stable employment to approximately 42 000 people across more than 200 locations in the country. The taxes that we pay to the municipalities, in which we operate, account for a significant part of the local governments' budgets.

KEY EMPLOYER

We are the third largest employer in Poland. Most of our personnel live in localities in the vicinity of our assets and a large number of our subcontractors are local enterprises, for which the co-operation with us provides the ability to develop their business activity.

INVESTMENTS AND ACTIVITIES THAT INVIGORATE THE REGIONS

We are one of the largest domestic investors. Since the foundation of PGE Group 13 years ago, our capital expenditures have reached over PLN 75 billion. These funds were spent on the construction of new capacities, eco-friendly modernisations of existing assets and expansion of power and district heating networks. In 2019, we invested PLN 7 billion. Our investments constitute a flywheel for the Polish economy – they include not only orders, many of which are commissioned to Polish enterprises, but also thousands of work places at construction sites and then operating units.

OUR CONTRIBUTION TO LOCAL BUDGETS

We are also one of the biggest tax payers in Poland. At central and local level, our business in 2019 brought in approx. PLN 6.2 billion in taxes (approx. PLN 6.3 billion in 2018). This amount mainly includes: VAT, taxes and contributions for PGE Group employees, property taxes, CIT, excise tax, as well as other taxes and fees.

Tax income -local governments in voivodships (in PLN million)*



* Estimates based on the consolidated financial statement, tax returns and documentation of other payments made to local governments under the law. The estimated division into individual levels of local government and territorial units was made on the basis of information on the amounts of taxes paid by individual PGE Group companies, employment in individual companies and provinces, and information on the distribution of income from PIT and CIT between local government units and the State Treasury.

GOVERNANCE

The PGE Group is a huge organism. To utilise its capabilities in an optimal way and to meet the expectations of stakeholders the proper supervision and coordination of the activities of all companies in the Group is a must.



THE APPOINTMENT OF THE HOLDING COUNCIL

The appointment of the Holding Council will strengthen the supervision over individual segments and companies. The Holding Council should act as advisory body, define potential risks and recommend solutions as a result of exchanges of relevant information and experiences at the Council forum. The Council will also supervise the implementation of the Group's strategy. In the opinion of the management board, the functioning of the Council will contribute to improvement of the efficiency, and to strengthening of the market position of the entire PGE Capital Group.

The Holding Council of the PGE Group is of key importance for strengthening supervision and increasing operational efficiency of the Group. The decision to establish the Council is also the confirmation of the management impulse I have already announced and reorganization of the structure of the Group. Thanks to the works of the Council Board, it will be easier to integrate activities and coordinate processes in all segments and companies of the PGE Capital Group.

Wojciech Dąbrowski,
President of the Management Board

WE SUPPORT SUSTAINABLE DEVELOPMENT GOALS

GOAL 4 QUALITY EDUCATION

The PGE Capital Group must face the challenge of generation and competency gaps. We establishment of sponsored classes and organise practical job learning as well as we prepare our future employees for obtaining requisite qualifications. We fund scholarships for the best students and modify the teaching programs.

GOAL 7 AFFORDABLE AND CLEAN ENERGY

We improve air quality by implementing investment projects that reduce emissions of our installations and by building renewable energy sources. At the same time, we are involved in the initiatives to eliminate local heating sources.

GOAL 8 DECENT WORK AND ECONOMIC GROWTH

We are committed to building a safe work culture - we develop health and safety initiatives, such as „Zero Accidents“ Training Centers at PGE Energia Ciepła. We take care of good working conditions by established compliance structures in the Group and transparent procedures of reporting irregularities.

GOAL 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

We actively implement the idea of circular economy and strive to minimize generated waste, as well as to reuse those already existing. We are involved in innovative projects aimed at, among other things, increasing efficiency of generating sources, for example our photovoltaic laboratory in Siedlce.

GOAL 11 SUSTAINABLE CITIES AND COMMUNITIES

We undertake the fight against low emissions (combustion of coal in home furnaces) by promoting district heating. We connect to municipal heating networks powered by our combined heat and power plants more and more houses and buildings. As part of the „We share heat“ program, the branches of PGE Energia Ciepła have been supporting socially vulnerable customers for over 10 years.

GOAL 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

We are aware of our impact on the environment. We do our best to make our installations operate in such a way as not to harm the natural environment and neutralize the effects of their activity.

GOAL 13 CLIMATE ACTION

We have ambitious plans for the development of photovoltaic installations, onshore and offshore wind farms. The implementation of these investments will reduce the carbon footprint.

GOAL 17 PARTNERSHIPS FOR THE GOALS

We are open to cooperation, especially at the local government level. This is particularly reflected, for example, in our commitment to creating energy clusters, or the organization of energy forums.



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