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ESG Assessment from the Perspective of the Management Board and Trade Unions on the Example of the Opole Power Plant

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Abstract: The Opole Power Plant is part of the PGE group (Polish Energy Group), the largest power company in Poland. It produces electricity from coal combustion, which means that ESG (environmental, social and corporate governance) policy should be one of the power plant's strategic priorities. The article focuses on evaluating the ESG activities implemented by the power plant and their relation to the standards set at the corporation. The article's primary hypothesis is that ESG activities are a significant element of the power plant's strategy, with most of them determined by policies undertaken at the level of the PGE Group as a whole. The secondary hypotheses assume that trade union representatives attach greater importance (than management) to the social elements of ESG (H2) and that individual management representatives rate higher regarding the importance of those ESG areas for which they are personally responsible (H3). The research method used in the article consists of interviews conducted with representatives of the power plant's board of directors responsible for individual areas of ESG activities and representatives of trade unions. In addition to groups of questions relating to corporate governance, the empirical material was organized from the perspective of power plant stakeholders. The results obtained support the acceptance of the first two hypotheses posed and the rejection of the third one.

Keywords: ESG; power plant; management board; trade unions; survey research

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1. Introduction

The value of a company is increasingly determined by intangible resources, which are not always reflected in management reports. Companies, in search of competitive advantage, are increasingly turning to values in line with corporate social responsibility (CSR) in an effort to act as a good employer, citizen and neighbor [1]. The concept of CSR, taking into account social and environmental goals in addition to economic ones, according to many authors, should become part of a company's strategy, as it is expected by the economic environment [2–4]. Nowadays, the concept of ESG (Environmental, Social and Corporate governance), emphasizing the importance of corporate governance, is increasingly applied to socially responsible activities at the corporate level.

The article refers to ESG activities undertaken by Poland's third-largest coal power plant, owned by the country's largest energy company. The authors start from the assumption that, as far as the scope of ESG is concerned, the solutions adopted at the Group level dominate, with the power plant being able to take additional actions of its own. Verification of this assumption was based on interviews with management and trade union representatives.

The article fills the literature gap concerning assessment of the degree of adherence of officially declared principles of ESG policy by a coal power plant. It is of great importance in the case of an enterprise that can be nuisance to the environment and local community. The importance of the subject matter is due to the fact that coal-based power generation will continue to function for several dozen years, contributing to the strengthening of the greenhouse effect. The primary hypothesis formulated in the article is that ESG activities are a significant element of the power plant's strategy, with most of them determined by policies undertaken at the level of the PGE Group as a whole, which includes the Opole Power Plant. The research tool is a survey questionnaire, purposefully addressed to the company's management and representatives of trade unions operating at the power plant. Since the members of the management board may be prone to treat ESG activities as a form of public relations, their declarations were confronted with the assessments of the representatives of the trade unions. Trade unions have a strong position in Poland and often put themselves in the role of an organ controlling the activities of the management board. The differences in the ratings obtained from the two groups of respondents may indicate areas in which company's management rate their ESG achievements too highly.

The first part of the article contains a literature review, including a presentation of the ESG concept, the current situation in the Polish power industry and the place and importance of the analyzed entity in the PGE concern. The second part presents the method of the conducted research and its results. The article ends with a discussion and conclusions.

1.1. ESG Policy as a Source of Corporate Competitiveness

In a globalized environment, value assessments of companies depend less and less on the availability of fixed assets, current financial performance and the company's market share, while the importance of intangible assets is increasing [5,6], such as the value of intellectual capital resources, including: the intellectual potential of human resources [7], brand value [8], process capital and innovation capital [9] and all intellectual property [10,11].

The pressure of the environment makes the importance of corporate social responsibility considered as obligations to society, i.e., a company's commitment to honest behavior (taking into account, in addition to economic, the social and environmental consequences of its activities) [12,13]. In relation to sustainability at the corporate level, the academic community uses the terms CSR (Corporate Social Responsibility), ESG (Environmental, Social and Corporate governance) and EGSEE (Economic, Governmental, Social, Ethical and Environmental Sustainability). Some authors treat these terms interchangeably, while some consider CSR a starting concept, treating the other approaches as more specific lines of research [14–16]. Some publications point out the differences between the priorities behind the concepts under consideration, e.g., emphasizing that CSR is oriented towards the general public without defining the scope of the company's responsibilities, which in turn is the main focus of stakeholder theory [17]. Based on the literature search conducted, for the purpose of the article, it was assumed that the concepts of CSR and ESG are similar, with the latter placing more emphasis on governance and corporate management as a codifying and supporting element of sustainability activities, while CSR addresses governance indirectly through environmental and social issues [18].

The term ESG is used in management [19,20], financial [21,22] and qualitative [23] contexts, creating difficulties in formulating a clear definition. It is often defined by a set of relevant activities that an enterprise should introduce into its strategy and implement [12]. According to the ESG concept, responsible business is characterized by appropriate environmental, social/employee conduct and good corporate governance practices [24].

The environmental (E) dimension measures a company's impact on the natural ecosystem (climate change, biodiversity) through its emissions (e.g., greenhouse gases), efficiency of natural resource use in the production process (including energy, water, materials), pollution and waste created, impact on deforestation, etc. [12,25]. The company should establish environmental management systems that take into account research, development investment and innovation (including product and improving the environmental supply chain) [26]. Legal and regulatory requirements related to environmental protection play an important role in this ESG dimension [27].

The social (S) dimension encompasses the company's relationship with its employees, customers and society. Its goals are community building, attention to public health, ethical behavior, respect for human rights, product responsibility (quality), responsible marketing, ensuring data privacy, activities directed at personnel (supporting diversity and inclusion, career development, training, improving working conditions, attention to health and safety) [27]. Activities within the social dimension are intended for the company to ensure employee loyalty, customer and community satisfaction (building an image of a good neighbor) and society as a whole (through, among other things, charitable activities and supporting employee volunteerism) [12,25,27].

The corporate governance dimension (G) involves: existing management systems, including a corporate social responsibility strategy, ESG reporting and transparency, safeguarding shareholder rights (e.g., defending against corporate takeovers), a well-functioning board of directors (with, among other things, experienced, diverse and independent members), motivated by a well-designed executive compensation policy, audit procedures, compliance procedures and ethical principles (e.g., a code of conduct and avoidance of illegal practices such as fraud and bribery) [12,25,26]. ESG governance is based on a set of integrated processes, structures and systems to support the board of directors in guiding the company [28]. The assumptions of corporate governance affect the quality of management [29] and thus the efficiency of capital allocation, the ability to maintain and grow capital over the long term [30]. The inclusion of the corporate governance dimension (G) as the third pillar of corporate social responsibility assessment is important because it is characterized by a higher level of transparency (than the environmental and social areas) [12], making it easier to assess a company's sustainability efforts.

With regard to corporate governance and its impact on the company's performance, the shareholder model (accountability of top management to shareholders) is contrasted with the stakeholder model [31], based on taking into account the interests of all stakeholders who can contribute to the company's long-term performance and, consequently, shareholder value [24,32]. Some authors [15,33] suggest that one of the causes of the financial crisis of 2007-2008 was the prevalence in economic reality of the first model, and in order to avoid further crises, they advocate a shift to the second model, which in their view will ensure the long-term stability of companies.

The shareholder model is not necessarily at odds with the stakeholder paradigm, for, as proponents of the second model point out, actions aimed at other stakeholders have a positive impact on shareholder wealth. Companies that invest in CSR tend to have stronger reputations [34–36], and stakeholders in these companies may have a greater incentive to contribute resources to them and accept less favorable contract terms [37].

Managers are the key decision makers in any organization. Their task, from an ESG perspective, is to identify and reconcile the diverse and often conflicting interests of the company's key stakeholders [38–40], which must be incorporated into the corporate culture, management strategy, business model, actions taken and their reporting [15]. Managers are under institutional pressure from social and cultural environments (legislators, regulators, customers, local communities and environmental organizations), which influences their strategic decisions [41,42].

Proponents of expanding stakeholder outreach point to its benefits. Among them, they list improved reputation, trust and brand loyalty of customers [43,44] and employees [45,46], which helps ensure steady revenue streams and staff retention [24]. Social responsibility also has a positive impact on a company's bottom line, helping to reduce operating costs and financial risks [12]. For example, if the adoption of more environmentally friendly ways of operating (reducing the source of pollution) is recognized and viewed positively by the environment, in addition to reducing waste disposal costs and potential penalties, it will positively affect the satisfaction and loyalty of customers and other company stakeholders [28].

If the predictions of proponents of expanding stakeholder activities are confirmed in business practice, the attractiveness of socially responsible companies in the eyes of investors increases. They assume that socially responsible companies not only have a better reputation, but also are better managed and more stable, as managers make decisions from the perspective of long-term goals [15,24,28]. Such companies can provide better long-term financial performance also because sustainable corporate policies reduce negative risks (regulatory, supply chain, product and technology, litigation, reputation and physical risks) [39,40,47], which reduces the cost of capital for the company [18]. Investors assume that socially responsible companies have a higher predictability of return for stocks [48]. Confirmation of investors' positive perception of companies involved in ESG is the rapid growth in recent years of professionally managed portfolios focusing on this group of companies [24,49].

Since ESG is treated by investors as an additional tool for evaluating companies [39], reporting of ESG activities (information on non-financial aspects of companies' activities) is important [28,50]. Interest in ESG effects may be driven by investors' moral (ethical) motivations or driven by economic considerations (seeking to improve risk profile and portfolio returns) [41]. ESG reporting typically includes: measuring a company's emissions (environmental impact), use of natural resources and labor, health and safety, legal compliance, supply chain management, product responsibility, anti-corruption, social investment, etc. [16]. Investors often perceive the ESG report as being linked to the strength of a company's brand, risk management and business performance [40]. Some authors argue that ESG information is mainly used by investors to identify companies to avoid (because they do not implement a correct ESG strategy, which may pose a risk to doing business in the long term) [29]. The ESG reports are a valuable supplement to financial statements [39], which by their nature are collective summaries, and in the case of enterprises that are part of larger economic organizations, they include financial flows between related entities. The ESG report helps stakeholders to track the company's activities, including directions and level of expenditure on ESG activities.

Unfortunately, in the case of ESG reporting, no universally accepted standards (list of ESG issues and their relevance) have been developed so far, and ESG measures taken are rarely presented in the context of an organization's business model and strategy, so the comparability of ESG reports is low [25,41,51]. The result is limited reliability of ratings developed by different institutions, as manifested by very low correlation of results between data providers [26,49,52]. An additional limitation to the comparability of ESG measures internationally is the differences in institutional settings, and at the country level, differences between industries [50,51].

In countries with strong regulations and commitments to international treaties, companies are more likely to adopt CSR strategies to comply with legal requirements [53]. The leading region of the world in regulation (and support for sustainable development strategies) is the European Union, which since the 1990s has encouraged member countries and the companies operating within them to implement CSR in their strategies [54].

The approach to implementing ESG strategies depends on industry conditions [18,49,50], which determine the weights of individual ESG domains [26]. This is especially true in the environmental governance area, measures for which, in addition to the represented industry, depend on institutional regulations in the country [41]. Particularly high expectations are directed at the industrial and mining industries, which were the first to face environmental risk management [10], since they place the heaviest burden on the environment and as such are subject to intense social scrutiny [55].

Regarding the impact of CSR on companies, the results of most studies indicate that it is beneficial to shareholders, further creating positive values in line with stakeholder theory [56].

With a few exceptions, empirical evidence supports the view that ESG positively influences customer loyalty and satisfaction [44,57] and lowers the risk and cost of capital [18,58]. There is a noticeable positive relationship between ESG and employee satisfaction and commitment in the organization [45,59,60]. Disclosing ESG results improves corporations' access to finance [14,41,61] and the positive impact of ESG on the firm appears to be stable over time [62].

Of course, the research results presented above do not guarantee that an investment in CSR/ESG will pay off for every company [63]. It is important to remember that socially responsible initiatives generate additional costs that can have a negative impact on financial performance and reduce a company's bottom line in the short term [16]. In addition, they compete with other important strategic activities that could prove more profitable [64,65]. For this reason, the impact of CSR spending on financial performance depends on the individual strategy determined by the specifics of the company [66].

Some authors emphasize the importance of an economic approach, writing that CSR should have a business rationale [67,68]. From an economic perspective, according to a preliminary view of Carroll's pyramid [69], suggesting the priority of economic responsibility over the others (legal, ethical and philanthropic), actions should first be directed to stakeholders affecting the company's financial performance [30,55]. Operating according to this strategy, companies focus on stakeholders in which it is profitable to invest [70], on whom sales and the ongoing operation of the company depend (customers, employees, suppliers, investors). Different stakeholder groups contribute differently to the creation and maintenance of the enterprise's resources, and therefore have different types of claims and rights to use these resources [33]. Managers try to take into account the expectations of all stakeholders, as long as it is beneficial (will translate into an increase in competitiveness), depending on the strength of each stakeholder (importance, legitimacy and urgency of claims) [71,72]. Decisions on the targeting of activities (expenditures), take into account the impact of these activities on stakeholder behavior and the associated expected effects [73,74].

Some studies indicate that CSR programs primarily target customers [55]. Studies of CSR managers in large and medium-sized companies in Poland have indicated that companies focus CSR activities aimed at public authorities, customers, suppliers and employees. In terms of the profitability of investing in relationships, the profitability of activities for customers and employees was rated highest [75].

With the proviso that there are sometimes studies indicating no relationship [76] or even a negative link [77], the majority of studies indicate a positive relationship between ESG and financial performance [78,79]. Meta-analyses [80–83] based on reviews of published studies also point to this pattern. Over time, the ambiguity of meta-analyses decreases (the share indicating positive effects increases), as the institutionalization and progressive standardization of ESG measures increases their comparability, and there is better access to sustainability information from, e.g., consumers [63]. It can be assumed that the effectiveness of expanding ESG activities will increase as managers have access to knowledge about the effects of actions taken by other companies.

Summing up the theoretical considerations, it should be noted that ESG priorities may be different from the perspective of managers and employees (represented by trade unions). Managers must simultaneously recognize the validity of the claims of various stakeholders and protect the interests of the corporation [84,85]. Maximizing shareholder wealth is not the only objective function of managers, they also perform the role of shareholder agents (company owners remain their most important stakeholders) [86,87]. Workers pay less attention to the company's profitability, and they expect decent income and appropriate working conditions for their work, which affects their job satisfaction and productivity [88]. Usually, employees are interested in implementing CSR principles because they are in line with their personal and professional goals, such as personal development, career path, income growth, creation of good workplace and improvement of the natural environment [89].

1.2. Situation in the Polish Energy Sector

The priority of governments is to promote the creation of a sustainable energy sector that ensures the country's energy security while reducing harmful environmental impacts [11]. The three main goals of sustainable energy development are to increase energy efficiency, use renewable energy sources and reduce greenhouse gas emissions [90].

In order to reduce the environmental burden of the power industry, appropriate regulations are being created, the level of which varies from country to country [30]. In the case of EU countries, the coal power industry is under additional pressure due to the climate goals adopted by the EU, i.e., decarbonization and achieving climate neutrality by 2050, according to the Green Deal [91]. The main tool for impacting the power industry is regulations imposing additional costs on electricity generation from non-renewable sources, due to carbon dioxide emissions [92]. The permissible limits on free CO_2 output are being successively lowered, and the price of allowances for additional emissions tends to rise. Tightening emission limits will result in a loss of competitiveness for coal-fired energy [93], making it uneconomic to invest in additional fossil fuel capacity from 2025 onward, and will cause coal and natural gas to be phased out of the power sector in the 2040s [94].

Poland faces a more serious energy transition challenge than other EU countries [95], due to the fact that its energy mix is still dominated by coal (in 2021 energy source in Poland was more than 3/4 of its electricity from coal, i.e., 49.7% from hard coal and 25.7% from lignite) [96]. The depth of the necessary changes means that they require time and significant financial resources for implementation [25]. An additional factor slowing down the transition in Poland is the fact that the sector's focus on environmental protection must come to terms with divestment in coal and power companies [25], and these sectors in Poland are still largely owned (or co-owned) by the state. On the one hand, the state is trying to maintain the availability of capacity in the power system, while on the other hand, it has decided to phase out coal supplied units in favor of a progressive increase in capacity from low- or zero-carbon sources [11].

One of the main objectives of Poland's energy policy is to minimize the negative impact on the environment (reducing emissions, negative effects on the condition of the earth's surface and watercourses, reducing waste, changing production to low-carbon). Investment in emission reduction and pollution prevention is of interest to energy companies themselves, as it provides opportunities to improve financial performance [63]. In addition, energy companies are feeling increasing pressure from their stakeholders, who expect sustainable products and clean energy, and at the same time demand disclosure of information about the environmental impact of companies' operations [11].

Energy companies are being forced to disclose business practices that have a positive impact on sustainability in order to preserve their image and reputation [90]. The credibility of reports provided by companies remains an issue, as they may be prone to greenwashing, or image manipulation, in order to hide environmental and social shortcomings [97]. Energy companies may treat sustainability reports as a public relations tool, hiding information about the measurement and methodology used, minimizing or concealing certain information about their environmental impact to alleviate pressure from stakeholders [98].

As the research indicates, the annual reports of Polish energy companies relating to CSR issues, among others, vary considerably in the volume, type and scope of information (among other reasons, because the publication of this information is voluntary in Poland). Companies focus on presenting awards and other facts that build trust and image (implemented quality systems, anti-corruption practices, adherence to codes of ethics, investment projects, good financial performance, etc.). As a result of stakeholder pressure, the quality of annual reports is expected to improve [99].

Another study based on data from the consolidated annual reports of energy companies listed on the Warsaw Stock Exchange for 2016–2020 showed that Polish energy companies were very poorly engaged in the implementation of low-carbon energy sources. From a stakeholder perspective, their engagement was highest with contractors and employees, while it was lower with the public, lenders and the environment [100].

1.3. The Opole Power Plant as Part of PGE

The Opole Power Plant is part of PGE (Polish Energy Group), the country's largest energy company. In its strategy, the PGE declares that it wants to become the leader of Poland's sustainable energy transition, to play a key role in modernizing the sector, stressing that achieving climate neutrality will be a multi-year process (i.e., it will take until 2050, when all energy produced is to come from renewable sources). The strategy is in line with both the European Union's expectations and the government's indications, including the assumption that there will be no investment in coal mining and power generation, and that coal assets will be spun off by 2025. Strategic goals were defined as: providing environmentally friendly energy (investment in renewable sources), modern energy services (ensuring customer satisfaction), and an efficient and effective organization (improving productivity and cost efficiency) [101].

The research for 2012–2019, conducted among energy companies listed on the Warsaw Stock Exchange, indicated that there is no relationship between declarations to include CSR in strategy (manifested by joining the RESPECT index—socially responsible companies) and profitability, the level of stock market quotations and their stability on the Polish stock exchange. The best results (the highest profitability ratios, the lowest level of loss of market value with the highest stability of profitability and stock market valuation) were achieved by a company that did not join the stock market index grouping socially responsible companies. Out of the four considered, Poland's largest power companies, PGE ranked third in terms of changes in profitability (ratios: ROE -Return on Equity, ROA -Return on Assets, ROS -Return on Sales) and second in terms of changes in the level of listing [102].

The Opole Power Plant, the subject of the analysis in this article, has been operating in the Polish energy market for nearly 30 years. It is one of the most modern and largest coal supplied power plants in Poland. After its expansion in 2019, it is the third largest power plant in Poland, able to meet 12% of the country's current electricity demand. Since 2010, the Opole Power Plant has operated as an independent entity belonging to the PGE Capital Group. It stresses that its approach to social responsibility is in line with PGE's business strategy. Among its objectives, it lists building shareholder value, guaranteeing energy security for customers and stability of employment for employees combined with care for the social environment and the natural environment. As part of its concern for the environment, the power plant stresses that it makes every effort to continuously reduce its impact, and that the by-products of coal combustion (ash, slag and gypsum) are used in full economically. As part of its social responsibility, it also engages in social and charitable activities and sponsorship of community initiatives [101].

Taking into account the literature review and the characteristics of the studied entity, the following primary hypothesis was formulated for the purpose of the article:

Hypothesis H1. *ESG activities are a significant element of the Opole Power Plant's strategy, with the majority of them determined by policies undertaken at the level of the PGE Group as a whole.*

Additional hypotheses, related to the characteristics of respondents participating in the study, were formulated as follows:

Hypothesis H2. *Trade union representatives attach more importance (than management representatives) to the social elements of ESG.*

Hypothesis H3. *Individual representatives of the management board rate higher the importance of those ESG areas for which they are personally responsible.*

2. Materials and Methods

In order to verify the hypotheses, a survey questionnaire was constructed based on a five-point Likert scale. The questions were formulated in a way that allows assessment of the adopted ESG strategy, its implementation and limitations in its extension, as well as actions taken for the benefit of the company's stakeholders. The respondents answered questions about the degree of implementation of ESG activities by selecting from the following answer options: Definitely no (1), Rather not (2), I have no opinion (3), Rather yes (4), Definitely yes (5).

The main groups of questions concerned: corporate social responsibility strategy at the level of the PGE group and the Opole Power Plant, assessment of the functioning of ESG principles taking into account the perspective of stakeholder theory, directions of improvement of ESG policy at the Opole Power Plant with consideration of stakeholder theory, and reasons for limiting (restricting) the Opole Power Plant's activities in the ESG area.

The questionnaire was addressed to the company's management and representatives of trade unions operating at the power plant. The representatives of the management board included: Branch Director and managers of the areas: ESG, HRM (Human Resources Management) and environmental protection. Representatives of all 5 trade unions currently operating at the Opole Power Plant took part in the survey (in Poland, there is no limit on the number of trade unions in an enterprise). The limitation of the number of respondents to 9 was dictated by the need to contact persons competent in the field of ESG from the company's management and representatives of trade unions. Enlarging the group of respondents with people not related to ESG issues could have resulted in a significant share of responses "I have no opinion" (3), which would have distorted the survey results.

The study was conducted in May and June 2022, reaching respondents through the Head of the Organization and Administration Department responsible for ESG.

To verify the first hypothesis, the level of responses to the first and fourth groups of questions in the questionnaire was used. To verify the second hypothesis, the evaluations of trade union representatives were confronted with those representing the company's management. The analysis focuses on the differentiation of the respondents' answers to the second and third groups of questions included in the questionnaire. The non-parametric Mann-Whitney U test was used to verify hypothesis 2 in relation to the assessment of the level of ESG activities for various stakeholder groups.

This test was used to verify the hypothesis that the differences between the medians of the study variable were not significant in two populations. The Mann-Whitney test does not require the fulfilment of the assumption that the compared groups are equal, so it was used to compare differences between two independent groups (4 members of the management board and 5 representatives of trade unions participated in the study).

In line with the theoretical scope of the social dimension of ESG policy adopted in the introduction, four groups of stakeholders were taken into account: customers, personnel, the local community and charity recipients. Verification of the third hypothesis is based on the variation in the evaluations of those involved in each area, with particular attention to the field the respondent is responsible for. The Opole Power Plant was selected as the subject of research due to its size (the third in Poland) and belonging to the PGE Capital Group, which declares a sustainable energy reform. The study is preliminary, the authors intend to continue research on a sample of 10 coal power plants.

3. ESG Activities at the Opole Power Plant in the Light of Research Results

The first group of 9 questions in the survey questionnaire referred to the corporate social responsibility strategy at the level of the PGE and the Opole Power Plant (Table 1). In this regard, respondents assessed the strategy adopted by PGE, the level of its validity and reporting on activities, as well as its impact on the operations of the power plant (management's independence and incentive system, audit system, transparency of corporate governance principles and the degree of ease of its implementation). This group of questions closes with a determination of the extent to which the corporate governance principles adopted at PGE are sufficient from the perspective of the Opole Power Plant's operation.

Table 1. Assessment of corporate social responsibility strategy at the level of PGE and the Opole Power Plant.

Questions/Issues		Responses of Respondents *								
		MB 1	**MB 2**	**MB 3**	**MB 4**	**TU 5**	**TU 6**	**TU 7**	**TU 8**	**TU 9**
ESG (environmental, social responsibility, governance) activities in the area of the environment, social/employee issues, and good corporate governance practices										
Q.1	PGE has a good corporate social responsibility strategy	5	5	5	5	3	4	2	4	5
Q.2	Implementation of ESG strategy (environmental, social and corporate governance issues) is important for PGE	5	5	5	5	2	4	4	4	5
Q.3	ESG reports published by PGE are well prepared	5	5	4	5	3	2	3	4	5
Q.4	Management of the Opole Power Plant has sufficient autonomy in decision-making	5	5	4	4	2	1	1	1	4
Q.5	The incentive system for the management of the Opole Power Plant is well designed	5	5	4	4	2	2	2	1	4
Q.6	The system for auditing the Opole Power Plant's operations is well designed	5	5	5	5	3	2	3	3	5
Q.7	Corporate governance principles adopted in PGE are clear and transparent	5	5	5	4	2	2	3	4	5
Q.8	Corporate governance principles adopted in PGE are easy to implement in the Opole Power Plant	5	4	4	4	3	2	3	2	5
Q.9	PGE's adherence to corporate governance is sufficient from the perspective of the Opole Power Plant's operations (no additions required)	5	4	4	4	3	3	3	4	5

Source: own research. * Respondents: M1—Branch director, M2—responsible for ESG, M3—responsible for HR, M4—responsible for environment, TU5–9 representatives of the five trade unions operating at the Power Plant.

In the group of questions Q.1–Q.9, the overall respondents gave the highest rating to the ESG strategy and the relevance of its implementation at the PGE concern level. Additionally, ESG reports published by PGE and the auditing system were rated at level 4 (rather yes). The lowest rating was given to the power plant management's independence in decision-making. Due to significant differences between the ratings of the two groups of respondents, they should be considered separately.

All management representatives highly rated the ESG strategy adopted by PGE giving it maximum scores. A set of maximum scores also applied to the relevance to PGE of the adopted strategy and the auditing system. Management representatives dealing with separate areas (ESG, HR, environment) rated the ease of implementation of corporate governance and its sufficiency from the perspective of the power plant at level 4 (rather yes). These are the lowest given ratings in this section of questions, which is probably due to the identification of specific conditions (organizational, social, environmental) present at the power plant. The remaining questions relating to corporate governance, concerning the quality of reports, management self-reliance and incentive system, quality and transparency, received ratings of 4 (rather yes) or 5 (definitely yes) from management representatives. It should be noted that none of the answers given by management representatives in this group of questions was lower than 4, with the chief manager (Branch Director) giving all questions in this group the maximum rating (definitely yes). This level of ratings supports the acceptance of the first hypothesis, concerning the determination of ESG policy at the level of the power plant by that undertaken at the level of the entire PGE Group.

The evaluations of trade union representatives were significantly lower and more diverse. They gave the highest ratings to the ESG strategy and its implementation at the PGE level, and to the statement that the corporate governance in place at PGE does not require additions from the perspective of the power plant. Trade unionists gave the lowest ratings to management's self-reliance in decision-making and the management motivation system. With a high level and little variation in ratings from management representatives, the differences in the level of assessments of two groups of respondents were determined by the assessments of trade union representatives. The lowest difference occurred in the case of the statement that the corporate governance in place at PGE does not require additions from the perspective of the power plant. The highest differences in rating appeared when assessing the management's incentive system and its independence in making decisions.

It should be emphasized that the results obtained in the course of the research are the respondents' own declarations. Some of them can be verified on the basis of company documents. However, the authors would have to obtain permission to access them (at the PGE group level), which may be impossible due to their strategic nature. Therefore, a question about assessment of the audit system has been added as an image of credibility of the answers to the ESG questions. The purpose of the audit system is to assess to what extent the audited company meets the ESG assumptions adopted at the PGE concern level. The audit system received the highest rating from all company's management representatives and one union representative. Significantly lower score from trade unionists results from the fact that three of them gave a grade of 3. However, it should be noted that this grade reads "I have no opinion", which may point to, inter alia, insufficient knowledge of the trade union representatives in the field of the audit system (may mean refraining from making an assessment).

The second group of questions concerns the evaluation of the functioning of the ESG principles from the perspective of stakeholder theory, i.e., in relation to:

- personnel (correct procedures, avoidance of discrimination, working conditions, development opportunities, incentive system and participation in management),
- customers (observance of consumer rights, fair advertising, compliance with energy trading regulations),
- suppliers (reliability in settling obligations, adherence to the code of ethics, protection against corruption),
- lenders (reliability in payment of obligations and information provided on the current economic and financial situation),
- public authorities and the tax apparatus (timely payments, cooperation with local and regional government and central authorities),
- local communities (support of community activities support of public sector services at the local and regional level),
- recipients of charitable activities (participation in PGE activities, independently undertaken charitable activities, support of employee volunteerism)
- natural environment (adherence to standards, undertaking activities that exceed imposed standards, efficiency in the use of natural resources, use of environmental management systems).

Table 2 presents detailed assessments of respondents on the achieved level of ESG activities in relation to selected groups of stakeholders.

The answers to the group of questions Q.10-Q.35 were intended to diagnose the current situation. They allow us to formulate a hierarchy of targeting ESG activities from the perspective of stakeholder theory. Since a different number of specific activities in different areas were proposed for evaluation, the hierarchy should be considered on the basis of the summed average for each stakeholder.

According to the opinion of the respondents, the highest ratings were given to activities for suppliers and the government and tax apparatus. Activities for: lenders, charity recipients and the environment received similar ratings. By far the lowest rating was given to ESG activities for personnel.

Table 2. Assessment of the functioning of ESG principles from the perspective of stakeholder theory.

Questions/Issues		Responses of Respondents *								
		MB 1	**MB 2**	**MB 3**	**MB 4**	**TU 5**	**TU 6**	**TU 7**	**TU 8**	**TU 9**
How do you assess the functioning of ESG recommendations in the operations of the Opole Power Plant in the basic areas?										
Personnel										
Q.10	HR procedures developed and compliance with them is at a high level	5	5	5	4	2	5	4	1	5
Q.11	The power plant effectively counteracts discrimination against employees based on gender, age, job position	5	5	5	4	2	5	5	4	5
Q.12	The power plant provides good working conditions	5	5	5	5	4	4	4	5	5
Q.13	The power plant cares about employee development	5	5	5	5	3	4	3	4	4
Q.14	Employees accept the incentive system	5	4	4	4	2	2	3	2	4
Q.15	Employees have the opportunity to participate in management	5	5	4	4	1	2	4	2	4
Customers										
Q.16	The power plant respects consumer rights	5	5	5	5	4	5	4	3	5
Q.17	The power plant uses fair information and advertising	5	5	5	5	4	5	4	3	5
Q.18	The power plant complies with regulations governing energy trading	5	5	5	5	4	5	4	5	5
Suppliers										
Q.19	The power plant pays its obligations reliably and on time	5	5	5	5	5	5	4	4	5
Q.20	The power plant complies with the Code of Ethics	5	5	5	5	3	4	4	3	5
Q.21	The power plant attaches importance to safeguarding against corruption	5	5	5	5	4	4	4	4	5
Lenders										
Q.22	The power plant pays its obligations reliably and on time	5	5	4	5	4	5	3	3	5
Q.23	The power plant provides reliable information on the current economic and financial situation	5	5	4	5	4	5	3	4	5
Public authorities and tax apparatus										
Q.24	The power plant makes timely tax and contribution payments	5	5	4	5	5	5	4	3	5
Q.25	The power plant cooperates with local and regional governments	5	5	5	4	4	5	4	4	5
Q.26	The power plant cooperates with central authorities (government, Ministry responsible for energy)	5	5	5	5	3	5	4	2	5
Local community										
Q.27	The power plant supports community activities undertaken by various entities	5	5	4	5	3	4	2	4	5
Q.28	The power plant supports the operation at the local (regional) level of public sector activities (schools, health services, etc.)	5	5	4	5	3	4	4	4	5
Charity recipients										
Q.29	The power plant participates in charitable activities undertaken by PGE	5	5	5	5	4	4	4	4	5
Q.30	The power plant independently undertakes charitable activities	5	5	5	5	4	2	4	2	4
Q.31	The power plant supports the volunteer work of its employees	5	5	5	5	4	4	4	5	-
Environment										
Q.32	The Opole Power Plant complies with all standards related to environmental protection	5	5	4	5	5	5	4	5	5
Q.33	With respect to the environment, the Opole Power Plant undertakes activities that exceed the standards imposed by law	5	5	4	4	4	4	4	4	4
Q.34	The Opole Power Plant effectively uses natural resources (energy, water, materials) in the production process	5	5	5	4	5	4	4	4	5
Q.35	The power plant uses environmental management systems	5	5	5	5	3	4	4	3	5

Source: own research. * Respondents: M1—Branch director, M2—responsible for ESG, M3—responsible for HR, M4—responsible for environment, TU5–9 representatives of the five trade unions operating at the Power Plant.

With the proviso that, in the case of management representatives, ratings for activities for all stakeholders are very high, the highest valued activities were those aimed at:

customers, suppliers and recipients of charitable activities (they received maximum scores from all respondents). While given the nature of the power plant's operations, the first two groups of stakeholders are not surprising, the highest score for recipients of charitable activities may indicate a high proportion of the ESG policy's focus on the company's image. It is also surprising that the relatively lowest rating was given to activities aimed at staff and in rating they are very close to activities for lenders, the local community and the environment). The rating of ESG activities for personnel was underestimated by the manager responsible for the environment, who gave higher scores to activities for all other stakeholders. None of the management representatives rated any of the detailed stakeholder activities below 4, and the Branch Manager gave all questions in this group the maximum score. This shows the confidence of the management representatives in the good implementation of ESG activities from a stakeholder perspective.

As in the case of the first group of questions, almost all of the trade unionists' ratings for areas of assessment are lower than those of management representatives (the exception is the rating of compliance with all environmental standards). Despite the lower scores, trade unionists are positive about the level of ESG activities achieved, as the means of ratings for activities aimed at individual stakeholders mostly exceeded the level of 4 (rather yes). Slightly lower ratings were given to activities aimed at staff and recipients of charitable activities. In the case of personnel, low ratings of employees' acceptance of the incentive system and the opportunities of participation in management are noticeable. Three out of five trade unionists rated these areas of action for workers at level 2 (probably not) or even 1 (definitely not).

In this group of questions, the differences in responses between groups of respondents is much smaller. The greatest differences are in the aggregate ratings of activities for: staff, charity recipients and the community As for the individual questions, the biggest differences occurred in the evaluation of employee participation in management, self-reliance in undertaking charitable activities and employee acceptance of the incentive system.

Although, trade union representatives assessed the achievement of social ESG goals (activities directed at customers, personnel, local community and charity recipients) lower than the representatives of the management board, but the results of the Mann-Whitney U test indicate that only in the case of three questions, the differences in assessment are statistically significant.

Two of these cases concern personnel:

Q.13 The power plant cares about employee development (p = 0.015873)

Q.14 Employees accept the incentive system (p = 0.031746)

In the second case, it is about charity recipients:

Q.30 The power plant independently undertakes charitable activities (p = 0.015873)

In the case of the remaining 11 questions (concerning selected four stakeholder groups), the differences in the assessments of management board members and trade union representatives turned out to be statistically insignificant ($p > 0.05$).

The analysis of this group of responses allows us to verify the third hypothesis posed in the article, based on the differences in the ratings of the three management representatives responsible for the evaluated areas (it was assumed that they rated the areas they were responsible for the highest). The hypothesis was verified negatively, mainly as a result of the highest scores of the manager responsible for ESG, who rated the actions taken by the power plant as highest as possible for all questions, except for the acceptance of the incentive system by employees. As a result, the HR manager and the manager in charge of the environment could at most equalize the score of the manager responsible for ESG. The HR manager rated both ESG activities for staff and the environment higher than the manager responsible for the environment.

The next group of questions Q.36–Q.43 dealt with directions for improving ESG policies at the Opole Power Plant, taking stakeholder theory into account. Respondents answered questions on how they assessed the possibilities for improving activities aimed at the identified groups. Since the same groups of stakeholders were assessed as in the previous group of questions, there is an opportunity to confront the results obtained (comparing the level of assessment of actions taken and the need to expand them).

According to the general opinion of the respondents, the three highest rated directions of ESG improvement were: activities for personnel (the only indication exceeding a rating of 3), the local community and recipients of charitable activities.

The high rating of the current state of implementation of activities for stakeholders by management representatives (the second group of questions—Table 3), is accompanied by a low rating of the possibility of expanding activities for them. A reversal of the hierarchy of ratings is noticeable. The lowest scores include the ability to expand activities for customers and suppliers (as well as lenders and public authorities), while the highest scores list the ability to expand activities aimed at employees (as well as the community and the environment). Although the rating is usually markedly lower than 3, it signaled opportunities to expand activities aimed at employees (with relatively the lowest rating of current ESG activities for their benefit in the second group of questions) and (despite the high scores for the degree of implementation of ESG activities) also for the local community and the environment. The identification of these areas as important directions for improving ESG policy may indicate a link between ESG activities and the creation of the company's image.

Table 3. Directions for improvement of ESG policy at the Opole Power Plant, taking into account the theory of stakeholders.

Questions/Issues		Responses of Respondents *								
		MB 1	**MB 2**	**MB 3**	**MB 4**	**TU 5**	**TU 6**	**TU 7**	**TU 8**	**TU 9**
Q.36	Customers	1	1	2	1	3	2	5	3	2
Q.37	Employees	1	2	4	2	5	4	5	4	4
Q.38	Suppliers	1	1	2	1	3	2	5	3	2
Q.39	Lenders	1	1	2	1	3	2	3	3	2
Q.40	Public authorities and tax apparatus	1	1	2	1	3	2	3	1	2
Q.41	Local community	1	2	4	2	3	4	5	4	2
Q.42	Recipients of charitable activities	1	2	3	2	3	4	4	3	4
Q.43	Environment	1	2	4	2	3	2	4	3	2

Source: own research. * Respondents: M1—Branch director, M2—responsible for ESG, M3—responsible for HR, M4—responsible for environment, TU5–9 representatives of the five trade unions operating at the Power Plant.

The lower ratings for the implementation of stakeholder activities compared to management (Table 3), are accompanied for trade unionists by higher ratings for ESG improvement directions. The three clearly preferred directions are activities for staff, community and charity recipients. The highest gap in the evaluations of the two groups of respondents occurred in the case of activities aimed at employees. Despite the fact that employees are among the priority groups in management's assessment, the evaluation of the need to expand activities for their benefit by trade unionists was definitely higher.

The differences in the ratings of the three management representatives in charge of the assessed areas also indicate a rejection of hypothesis three-managers do not give higher scores to the areas they manage. While it is true that the HR manager scored the highest on opportunities to develop activities for employees, he also scored the highest on all other lines of action. The responses of the ESG manager and the manager in charge of the environment were identical, indicating what they considered minimal opportunities to expand stakeholder activities (four responses each of "definitely not" and "rather not"). The Branch Manager gave all questions in this group a minimal rating, confirming that management representatives (except the HR manager) consider the ESG activities carried out so far for stakeholders sufficient. In this group of questions, for the first time, there was a big difference between the responses of management representatives, for ex.: the Branch Director and the HR manager assessment for the possibility of increasing activities aimed at employees, the community and the environment. The Branch Director definitely does not see the possibility of increasing the activities for these groups (rating 1), while the HR manager believes that these activities should be expanded (rating 4).

The last group of questions concerns the reasons for limiting (restricting) the Opole Power Plant's ESG activities (Table 4). Respondents assessed to what extent these limitations are due to: already achieved (high) level of ESG activities, limitation related to solutions adopted in PGE, financial constraints, concerns about the unprofitability of ESG activities.

Table 4. Reasons for limiting (restricting) the Opole Power Plant's ESG activities.

Questions/Issues		Responses of Respondents *								
		MB 1	**MB 2**	**MB 3**	**MB 4**	**TU 5**	**TU 6**	**TU 7**	**TU 8**	**TU 9**
Q.44	Sufficiently high level of ESG activities already achieved	5	4	4	4	2	2	2	3	2
Q.45	Limited possibilities to expand activities beyond those adopted within the PGE Group	1	5	4	5	4	4	5	5	2
Q.46	Lack of financial resources	1	2	2	2	5	4	5	5	4
Q.47	Risk of non-reimbursement of funds allocated for ESG	1	2	2	2	5	1	2	3	3

Source: own research. * Respondents: M1—Branch director, M2—responsible for ESG, M3—responsible for HR, M4—responsible for environment, TU5–9 representatives of the five trade unions operating at the Power Plant.

All respondents as the primary reason for limiting the over plant's activities in the ESG area, indicated the limitation of the possibility of expanding activities beyond those adopted within the PGE, while the lowest rating was given to the risk of non-reimbursement of funds allocated for ESG.

The responses of the management representatives confirm their position declared on the occasion of the group of questions Q.1–Q.9. The managers of the isolated areas rated the already achieved level of ESG activities at level 4 (the Branch Manager indicated level 5), at a slightly higher level they rated the limitation of the possibility of expanding activities beyond those adopted within PGE (in contrast to the Branch Director). For this question, there was the highest possible difference spread between the ratings of HR and environmental managers (rating of 5) and the Branch Director (rating of 1). The manager of the whole company, in contrast to those in charge of separate departments, does not see limits to the expansion of ESG activities due to the solutions adopted at the group level. Limiting ESG activities for financial reasons or the risk of non-reimbursement of funds directed to such activities received a rating of 1 (definitely not) from the Branch Manager and 2 (rather not) from the other management representatives. The results of this group of responses indicate a high evaluation of ESG activities already undertaken on the part of management.

The evaluations of trade unionists differ markedly from those of managers, and the hierarchy of responses about limiting ESG activities is also different. Trade unionists rate the lack of financial resources significantly higher as a reason for limiting, the risk of lack of return on ESG investments slightly higher, and the limit in exceeding the standards adopted in the corporation slightly higher. On the other hand, they rank the sufficiently high achieved level of ESG activities as a reason for limiting ESG activities. As a result, the reasons for limiting ESG activities occupying the first and last places in the hierarchy of respondents from both groups swap places, and the highest differences in ratings appeared in relation to the lack of funds and in the case of a satisfactory level of ESG activities.

4. Discussion

In Poland, the mining sector has been successively (though at a moderate pace) restructured for more than 30 years, but these developments have not been effective enough to accelerate changes in the energy mix (the country's declining coal output was supplemented by imports) [103]. The change in the attitude of the authorities was caused by external factors, i.e., pressure from the EU and the war in Ukraine [11]. Poland is seeking a ban on coal imports from Russia, in conditions where the domestic mining sector is unable to provide an adequate supply. The consequences will include accelerating investments aimed at transitioning to cleaner energy [104]. For example, the PGE corporation has announced investments in seven new photovoltaic farms, which will be commissioned in spring 2023. PGE Group's PV program calls for the construction of solar installations with a total capacity of 3 GW by 2030 [105].

Stakeholder pressures and expectations indicated in the literature [11–13] are reflected in the actions taken by the publicly traded PGE corporation and, consequently, the Opole Power Plant. The dominant influence on behavior comes from regulations and solutions favored by the government. The low propensity to invest in RES in Poland to date can be linked to an attempt to maintain employment in the mining industry (for social reasons). Since the energy sector is largely in the hands of the state, managers are subject to legal regulations and current policies implemented by the Ministry in charge of energy.

The above institutional conditions are reflected in the research findings. The Opole Power Plant, as a coal-fired power unit, emphasizes care for the environment, for example, in the form of economic use of coal combustion by-products [101]. During the study, all respondents belonging to the Board gave the maximum score to the statement that the power plant uses environmental management systems. The maximum score was also given to the statement that the power plant cooperates with central authorities (government, Ministry responsible for energy). Attention is drawn to the very unambiguous position of the general manager, scoring highest among the respondents on corporate governance the achieved ESG results in relation to stakeholders and the lack of restrictions on developing activities for them.

One of the priorities for coal power plants, which are expected to operate in Poland for a couple of decades yet, should be to maintain ESG standards. One of the priorities for coal power plants, which are expected to operate in Poland for a couple of decades yet, should be to maintain ESG standards, which results in their competitiveness (at least inside the sector). Customers expect power plants to deliver energy in a timely manner at an acceptable price. The quality and timeliness of the delivered fuel depend on the suppliers. Lenders provide ongoing financing of the company's operations.

In the context of employees, the power plant does not have direct competition in the region, but it has to recruit new employees even to supplement those who are retiring. The Opolskie Voivodeship has the lowest population in the country, there are depopulation phenomena in it related to demographic processes and to emigration to other regions and abroad. It is also characterized by one of the lowest levels of unemployment (in line with the Eurostat methodology at the end of 2020, the unemployment rate was 2.8%) [Statistical Yearbook of the Regions—Poland 2021, access 21 September 2022]. In addition, the prospects for reducing production and, consequently, after several decades of decommissioning coal-fired energy, significantly limit the interest in employment on the part of young people entering the labor market.

Taking into account the expected separation of carbon resources. "There is a transformation concept in Poland based on the separation of conventional coal-fired generation assets to an entity that is a 100% State-owned company operating under the name of the National Energy Security Agency ("NABE"). Treasury share, will be the owner of coal generation assets. NABE's role will be to ensure the necessary power balance in the energy system, limiting itself to the necessary replacement investments and gradual shutdown of coal-fired units along with the progressive increase in power from low and zero-emission sources, ensuring the country's energy security." [106]. The Opole power plant will be in a new economic structure 100% owned by the state, hence the importance of appropriate relations with central and regional authorities and the fiscal apparatus. Avoiding breakdowns and nuisance related to production limits the dissatisfaction of the local community and prevents possible protests. Target audience of charity activities can influence the image of the enterprise by influencing other stakeholders.

Compliance with the technological regime limiting the nuisance to the environment in the case of coal power plants has measurable economic effects related to charges for CO_2 emissions, not forgetting the importance for society. Good relations with stakeholders ensure stability of functioning, and thus improve the competitive advantage.

It must be emphasized at this point that the current operating conditions of coal power plants make it impossible to reconcile the expectations of all stakeholders. Current operating conditions of coal-fired power plants make it impossible to reconcile the expectations of all stakeholders. Rising production costs result mainly from an increase in raw material prices, the persistence of high fees for carbon dioxide emissions and the wage pressure on the part of employees (related to high inflation). All the above-mentioned factors make it necessary to raise prices, which affects the interests of customers.

The ability of free formation of prices is limited by customer solvency and restrictions imposed by the government. For example, in Poland, it has been announced that the increase in energy prices will be limited for households, local governments and hospitals. In such market conditions, the task of the power plant management board will be to limit the deterioration of relations with the main stakeholder groups.

The study carried out for the article is preliminary, with the aim of determining the current state and prospects. In order to reduce the subjectivity of the assessment, the questionnaire was addressed to respondents who make up the company's management and the trade unions operating within it. While in the case of stakeholder activities, the answers of both groups of respondents were similar in terms of the hierarchy of activities (with lower ratings of goal achievement from the perspective of trade unionists), in the case of corporate governance significant differences emerged.

The absolute differences in the rating of individual ESG measures between the respondent groups are probably due to the confrontation between the self-assessment of management representatives (who tend to emphasize their successes and thus overestimate their ratings) and the expectations of trade unionists (who tend to emphasize the lack of implementation of their demands and thus underestimate their ratings). A notable example of the discrepancy in perceptions of the advancement of ESG activities is the management representatives' assignment to the response that a sufficient level of ESG activities has already been achieved. It should be recalled here that the Mann-Whitney U test for the social aspects of ESG policy only in the case of 3 questions (out of 14) showed statistically significant differences between the assessment of management board members and trade union representatives.

The ratings of the HR manager were the closest to those of the union representatives, which is probably due to the fact that he has the most frequent contact with union members and awareness of their expectations. The questions with the largest answer gaps between the evaluations of the respondent groups on corporate governance indicate imperfect communication between them. The discrepancies in the assessments of the two groups of respondents suggest that the initiatives of trade unionists, presumably mainly concerning personnel policy, are met with information from management indicating its limited independence in decision-making, an insufficient system of motivating management and a lack of financial resources.

A conclusion, that assessment of enterprises from the perspective of ESG activities carried out seems appropriate in the context of corporate social responsibility, is a theoretical implication stemming from both literature review and the results obtained from the study. It is supported by the great importance assigned to corporate governance within the ESG concept, which imposes the method of implementing the company's strategy [18,24]. In order to increase the comparability of ESG activities undertaken by various enterprises, it is necessary to further standardize of corporate social responsibility reports [25,41,51].

The level of generalizability of the obtained survey results should be pointed out as a limitation in the conducted study, due to the fact that one power plant in one country was investigated. Discrepancies between the opinions of the company's management representatives and the trade union representatives, especially (with few exceptions) higher ratings from the company's management, indicate a company's management representatives' tendency to inflate ratings in order to build the company's image or excessive criticism from trade union representatives.

Further research on the issues raised in the article will cover Poland's 10 largest coal and lignite power plants. Assuming that the same group of respondents is considered: representatives of the company's management (chief manager and those responsible for the environment, HR and ESG) and representatives of trade unions in individual power plants, the future study will cover 80 respondents, which will enable wider use of statistical methods in data interpretation.

5. Conclusions

Certainly, the conditions for the functioning of coal-based energy in Poland place high demands on the management of the power plant. Over the next few years, there has been no competition for coal-based energy, but this situation will be changing over time. One should expect a gradual reduction in the use of coal in electricity production and its replacement by alternative sources (e.g., renewable energy). Assuming the separation of coal assets and their takeover by the state, the pace of decommissioning coal-based energy will be decided by the government. The order in which coal power plants will be shut down will depend on the actions of individual management boards (including the implementation of an appropriate ESG policy).

Referring to the hypotheses raised in the article, the Opole Power Plant, as part of the PGE corporation, mainly focuses on the implementation of the group' general strategy. Responses to the first and last groups of questions indicate a strong influence of solutions adopted at the PGE level on ESG activities at the power plant. Despite the occurrence of differences between the groups of respondents, both representatives of the management board and trade unions see the dominant influence of solutions adopted at the group level and the limitations of undertaking ESG activities on the Power Plant's own initiative.

Confronting the two groups of questions regarding the achieved level of ESG activities for the benefit of individual stakeholders and their further orientation, the answers of both groups of respondents indicate a similar hierarchy of preferences. In the opinion of the respondents, a high level of implementation of ESG activities for the benefit of stakeholders has been achieved, and the rationale for their further expansion is therefore limited (with the exception of activities for personnel). Representatives of trade unions attach greater importance (than representatives of management) to the social elements of ESG, however, in most cases, the differences in the assessment are not statistically significant.

The results of the survey support the acceptance of the first two hypotheses raised and the rejection of the third hypothesis. The position taken does not differentiate the evaluations of management representatives, they do not rate higher the relevance of those ESG areas for which they are personally responsible.

Due to discrepancies in the answers to some of the questions of the two groups of respondents, the direction of further research may be to conduct a survey among the employees of the Opole Power Plant, especially in the area of their assessment of ESG aspects in personnel management. Such a survey could be directed at finding out whether the workforce more closely shares the views of management or the trade unions. Additional research areas include turning with the questionnaire to a wider group of power plant stakeholders (especially environmental organizations and local communities) to gather information on the assessment of the company's strategy and its implementation.

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